Seminole District

Concussion

Management

Policies and Procedures

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Introduction

Pursuant to Senate Bill 652, the 2010 General Assembly amended the *Code of Virginia* to include § 22.1-271.5 directing the Board of Education to develop and distribute to school divisions by July 1, 2011, guidelines for policies dealing with concussions in student-athletes, and requiring each school division to develop policies and procedures regarding the identification and handling of suspected concussions in student-athletes.

The goals of the Student-Athlete Protection Act (SB 652) are to ensure that student-athletes who sustain concussions are properly diagnosed, given adequate time to heal, and are comprehensively supported until they are symptom free. According to the Consensus Statement on Concussion in Sport (3rd International Conference on Concussion in Sport, Zurich, November 2008), "the cornerstone of concussion management is physical and cognitive rest until symptoms resolve and then a graded program of exertion prior to medical clearance and return to play."

The Brain Injury Association of Virginia notes that it is important for all education professionals to be aware of the issues surrounding brain injuries and how they can affect the student's abilities in the educational setting. Resulting impairments can be multifaceted and can include cognitive, behavioral, and/or physical deficits. Impairments can be mild or severe, temporary or permanent, resulting in partial or total loss of function. Because these deficits are so varied and unpredictable, it is difficult to forecast the recovery for a student with a brain injury.

Definitions(s)

A **concussion** is a brain injury that is characterized by an onset of impairment of cognitive and/or physical functioning, and is caused by a blow to the head, face or neck, or a blow to the body that causes a sudden jarring of the head (i.e., a helmet to the head, being knocked to the ground). A concussion can occur with or without a loss of consciousness, and proper management is essential to the immediate safety and long-term future of the injured individual. A concussion can be difficult to diagnose, and failing to recognize the signs and symptoms in a timely fashion can have dire consequences.
Most athletes who experience a concussion can recover completely as long as they do not return to play prematurely. The effects of repeated concussions can be cumulative, and after a concussion, there is a period in which the brain is particularly vulnerable to further injury. If an athlete sustains a second concussion during this period, the risk of permanent brain injury increases significantly and the consequences of a seemingly mild second concussion can be very severe, and even result in death (i.e., "second impact syndrome").

Appropriate licensed health care provider means a physician, physician assistant, osteopath or athletic trainer licensed by the Virginia Board of Medicine; a neuropsychologist licensed by the Board of Psychology; or a nurse practitioner licensed by the Virginia State Board of Nursing.

Return to play means participate in a non-medically supervised practice or athletic competition.

An Act to amend the Code of Virginia by adding a section numbered 22.1-271.5, relating to policies for student-athletes with concussions.

[S 652]

Approved April 11, 2010

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding a section numbered 22.1-271.5 as follows:

§ 22.1-271.5. Policies on concussionsin student-athletes.

A. The Board of Education shall develop and distribute to each local school division guidelines on policies to inform and educate coaches, student-athletes, and their parents or guardians of the nature and risk of concussions, criteria for removal from and return to play, and risks of not reporting the injury and continuing to play.

B. Each local school division shall develop policies and procedures regarding the identification and handling of suspected concussions in student-athletes. Such policies shall require:

1. In order to participate in any extracurricular physical activity, each student-athlete and the student-athlete's parent or guardian shall review, on an annual basis, information on concussions provided by the local school division. After having reviewed materials describing the short- and long-term health effects of concussions, each student-athlete and the student-athlete's parent or guardian shall sign a statement acknowledging receipt of such information, in a manner approved by the Board of Education; and

2. A student-athlete suspected by that student-athlete's coach, athletic trainer, or team physician of sustaining a concussion or brain injury in a practice or game shall be removed from the activity at that time. A student-athlete who has been removed from play, evaluated, and suspected to have a concussion or brain injury shall not return to play that same day nor until (i) evaluated by an appropriate licensed health care provider as determined by the Board of Education and (ii) in receipt of written clearance to return to play from such licensed health care provider.

The licensed health care provider evaluating student-athletes suspected of having a concussion or brain injury may be a volunteer.

C. In addition, local school divisions may provide the guidelines to organizations sponsoring athletic activity for student-athletes on school property. Local school divisions shall not be required to enforce compliance with such policies.

2. That the Board of Education, in developing the policies pursuant to subsection A of § 22.1-271.5, shall work with the Virginia High School League, the Department of Health, the Virginia Athletic Trainers Association, representatives of the Children's Hospital of the King's Daughters and the Children's National Medical Center, the Brain Injury Association of Virginia, the American Academy of Pediatrics, the Virginia College of Emergency Physicians and other interested stakeholders.

3. That the policies of the Board of Education developed pursuant to subsection A of § 22.1-271.5 shall become effective on July 1, 2011.

School Name

Concussion Management Policies and Procedures

I. In order to participate in any extracurricular athletic activity, all student-athletes and the student-athlete's parent or guardian must review information on concussions provided by School Name. After reviewing the materials describing the short- and long-term health effects of concussions, each student-athlete and the student-athlete's parent or guardian must sign the Acknowledgement of the Health Effects of Concussion (Attachment 1) which ensures receipt, review, and understanding of the information. This must be performed annually.

II. School Name will develop and implement a concussion management plan (Attachment 2) that outlines the roles of the sports medicine staff (Team Physician, Certified Athletic Trainer, Athletic Director, Physician Assistant, Neurologist).

a. Every athlete will have a baseline assessment available to them. The baseline assessment information will be gathered by the use of one or more of the following tools: Sideline Assessment of Concussion (Attachment 3) and/or ImPACT, which is a computerized neurocognitive assessment tool. The same baseline assessment tools will be used post injury. However, these assessments will not be the sole criteria to determine the presence or absence of a concussion. A comprehensive assessment will be performed by the sports medicine staff.

b. A student-athlete suspected by a coach, athletic trainer, or team physician of sustaining a concussion or brain injury during a practice or game will be removed from the activity and will not return to play that same day. They must be evaluated by an appropriate licensed health care provider and receive written clearance to return to play from such licensed health care provider (Attachment 4). The licensed health care provider evaluating student-athletes suspected of having a concussion or brain injury may be a volunteer.

c. Appropriate licensed health care provider means a physician, physician assistant, osteopath or athletic trainer licensed by the Virginia Board of Medicine; a neuropsychologist licensed by the Board of Psychology; or a nurse practitioner licensed by the Virginia State Board of Nursing.

d. No member of School Name athletic team may participate in any athletic event or practice the same day he or she has been diagnosed with a concussion or exhibits signs, symptoms or behaviors attributable to a concussion. No member of School Name athletic team may return to participation in an athletic event or training on the days after he/she experiences a concussion unless all of the following conditions have been met:

   i. the student no longer exhibits signs, symptoms or behaviors consistent with a concussion, at rest or with exertion;

   ii. the student is asymptomatic during, or following periods of supervised exercise that is gradually intensifying (Attachment 5); and

   iii. the student receives a written medical release (Attachment 4) from a licensed health care provider.

e. Written home instructions will be provided and explained to the student-athlete as well as the parent or guardian. (Attachment 6)

f. Sports medicine staff members shall be empowered to determine management and return-to-play for all injured student-athletes, as deemed appropriate. Conflicts or concerns will be forwarded to individual schools Athletic Director, Administrator, and/or Team Physician for remediation.

g. All student-athletes diagnosed with a concussion will be documented by the sports medicine staff. This documentation will include injury evaluation, management, and clearance to return to play.

III. The School Name concussion policy team will refine and review local concussion management policies on an annual basis. The team shall consist of at a minimum but not be limited to a school administrator, athletic administrator, appropriate licensed health care provider, coach, parent, and student.

IV. Helmet replacement and reconditions policies and procedures
   a. Helmets must be National Operating Committee on Standards for Athletic Equipment (NOCSAE) certified by the manufacturer at the time of purchase.
   b. Reconditioned helmets must be NOCSAE recertified by the reconditioner.

V. Training required for personnel and volunteers
   a. School Name will ensure school staff, coaches, athletic trainers, team physicians, and volunteers receive current training annually on:
      i. how to recognize the signs and symptoms of a concussion;
      ii. strategies to reduce the risk of concussions;
      iii. how to seek proper medical treatment for a person suspected of having a concussion; and
      iv. when the athlete may safely return to the event or training.
   b. All coaches will be given a copy of the concussion management plan, a concussion fact sheet, and will view a video on concussions each year.
      i. (See Attachments 2, 7, 8, 9)
      ii. Video selection is determined by the School Name `sports medicine staff.
   c. The concussion policy management team will ensure training is current and consistent with best practice protocols.
   d. School Name will maintain a tracking system to document compliance with the annual training requirement. This documentation will be maintained by the Athletic Director and/or Athletic Trainer at School Name.
   e. Annual training on concussion management will use a reputable program such as, but not limited to, the following:
      i. The Centers for Disease Control's (CDC) tools for youth and high school sports coaches, parents, athletes, and health care professionals provide important information on preventing, recognizing, and responding to a concussion, and are available at http://www.cdc.gov/concussion/HeadsUp/online_training.html.
         1. (Attachments 7, 8, 9)
      ii. The National Federation of State High School Associations' (NFHS) online coach education course – Concussion in Sports – What You Need to Know. This CDC-endorsed program provides a guide to understanding, recognizing and properly managing concussions in high school sports. It is available at www.nfhslearn.com.

Approved by: _____ Superintendent Date:_____

Approved by: _____ Principal Date:_____

Approved by: _____ Athletic Director Date:_____

Approved by: _____ Athletic Trainer Date:_____

Approved by: _____ Team Physician Date:_____

Attachment 1

Acknowledgement of the Health Effects of Concussions

Parent/Guardian Acknowledgement

I have received, reviewed and understand the concussion information on the "Heads-Up" handout that was given to me. I promise to seek help from an appropriate licensed healthcare provider if I suspect that my child has sustained a concussion or is showing signs or symptoms of a concussion.

_____
Printed Name

_____ _____
Parent/Guardian Signature Date

Student-Athlete Acknowledgement

I have received, reviewed and understand the concussion information on the "Heads-Up" handout that was given to me. I will seek help from an appropriate licensed healthcare provider if I suspect that I have sustained a head injury. I will be truthful with my coaches and medical staff when reporting injuries, including head injuries.

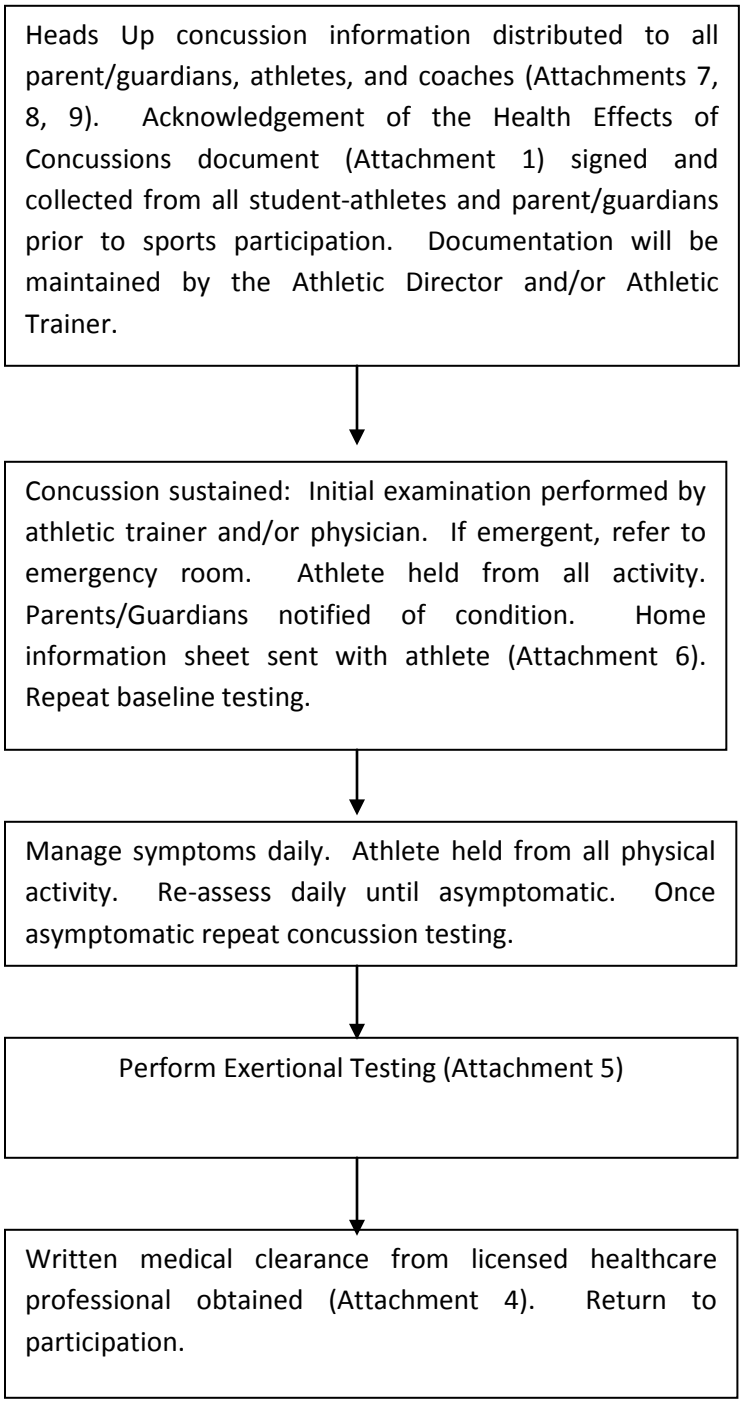
_____
Printed Name

_____ _____
Student-Athlete Signature Date

Please return this form along with your physical to your coach, athletic trainer, or administrator. Per the Seminole District Concussion Policy, you will not be able to play until this form and the physical are completed.

Attachment 2

Concussion Management Plan



Attachment 3

SIDELINE ASSESSMENT OF CONCUSSION

Name: _____
Team: _____ **Examiner:** _____
Date of Exam: _____ **Time:** _____
Exam (*circle one):* **Bline Injury Post-Game**

Neurologic Screening

Loss of consciousness:	Y	N
Witnessed Unresponsiveness: Length: _____		
Post Traumatic Amnesia	Y	N
Retrograde Amnesia	Y	N

	Normal	Abnormal
Strength		
Right Upper Extremity	☐	☐
Left Upper Extremity	☐	☐
Right Lower Extremity	☐	☐
Left Lower Extremity	☐	☐
Sensation (Romberg)	☐	☐
Coordination (Tandem Walk)	☐	☐

Symptom Evaluation

How do you feel?

You should score yourself on the following symptoms, base on how you feel now at the time of this evaluation

Symptom	None	Mild	Moderate	Severe
Headache				
'Pressure in head'				
Neck Pain				
Nausea or vomiting				
Dizziness				
Blurred vision				
Balance problems				
Sensitivity to light				
Sensitivity to noise				
Feeling slowed down				
Feeling like 'in a fog'				
'Don't feel right'				
Difficulty concentrating				
Difficulty remembering				
Fatigue or low energy				
Confusion				
Drowsiness				
Trouble falling asleep				
More emotional				
Irritability				
Sadness				

Total number of symptoms (max possible 21) ☐

Do the symptoms get worse with physical activity Y N

Do the symptoms get worse with mental activity Y N

If you know the athlete well prior to the injury, how different is the athlete acting compared to his/her normal self?

Please circle one response No different Very different Unsure

I. **ORIENTATION**

Month of the year	0 1
Date	0 1
Day of the week	0 1
Year	0 1
Time	0 1
Orientation Total Score:	**/5**

II. **IMMEDIATE MEMORY**

All 3 trials are completed regardless of score on trial 1 & 2; score equals sum across all 3 trials			
List	**Trial 1**	**Trial 2**	**Trial 3**
Elbow	0 1	0 1	0 1
Apple	0 1	0 1	0 1
Carpet	0 1	0 1	0 1
Saddle	0 1	0 1	0 1
Bubble	0 1	0 1	0 1
Total Immediate Memory Recall		**/15**	
Note: Do not inform the subject that delayed recall will be tested			

III. **NEUROLOGICAL SCREENING**

Recollection of injury (pre- or post-traumatic amnesia):
Strength:
Sensation:
Coordination:

IV. **CONCENTRATION**

Digits Backwards: If correct, go to the next string length. If incorrect, read the second trial. 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
Month of the Year in Reverse Order: Athlete must recite entire reverse sequence correctly.		
Dec-Nov-Oct- Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan		0 1
Total Concentration Score:		**/5**

V. **DELAYED MEMORY RECALL**

List	**Trial 1**
Elbow	0 1
Apple	0 1
Carpet	0 1
Saddle	0 1
Bubble	0 1
Total Delayed Memory Recall	**/5**

SUMMARY OF TOTAL SCORES

Orientation	**/5**
Immediate Memory	**/15**
Concentration	**/5**
Delayed Memory Recall	**/5**
Overall Total Score	**/30**

Attachment 4

Concussion Return to Play Clearance Form

This release is to certify that_____ has been examined
(Student-athlete's name)

due to experiencing the signs, symptoms and behaviors consistent with a concussion.

Following an examination, it is my medical opinion that he/she:

_____ **Is unable to return to any participation in athletics until further notice.**

Return appointment scheduled on the following date _____

_____ **May return to full participation in athletics on** _____
(Date)

The above named student/athlete has met the protocol for return to play as set forth by the Virginia Board of Education Guidelines.

a. the student no longer exhibits signs, symptoms or behaviors consistent with a concussion, at rest or with exertion;
b. the student is asymptomatic during, or following periods of supervised exercise that is gradually intensifying; and
c. the student receives a written medical release from a licensed health care provider.

_____ _____
Appropriate Health Care Provider's Name (Type or print) **Date**
(As defined by the Virginia Board of Education)

_____ _____
Appropriate Health Care Provider's Signature **Phone Number**

Note: Appropriate licensed health care provider means a physician, physician assistant, osteopath or athletic trainer licensed by the Virginia Board of Medicine; a neuropsychologist licensed by the Board of Psychology; or a nurse practitioner licensed by the Virginia State Board of Nursing.

Attachment 5

Exertional Testing Protocol Following Concussion

1. 5-15 minutes of cardiovascular exercise; exercise intensity < 70% maximum predicted heart rate
2. Strength training: (i.e. push-ups, sit-ups, squats thrusts)
3. Advanced cardiovascular training: sprint activities
4. Advanced strength training: weight lifting exercises
5. Sport specific agility drills (no risk of contact)

If there is no change or reoccurrence of symptoms the athlete may progress to a **non-contact practice session.**

The athlete may return to full sport participation once this protocol is completed and they have written medical clearance from a licensed healthcare professional.

This protocol should be completed over the minimum of two (2) days. If at any time symptoms should reoccur, all activity will be stopped and athlete will be re-evaluated and held from activity until asymptomatic.

Attachment 6

Concussion Home Instruction Sheet

The _____High School sports medicine staff would like to inform you that _____ sustained a concussion during _____on __/__/__. He/she was evaluated by_____ and will undergo additional concussion testing today/tomorrow. A concussion or mild traumatic brain injury can cause a variety of physical, cognitive, and emotional symptoms. Concussions range in severity from minor to major, but they all temporarily interfere with the way your brain works. It is important to understand that during the next few weeks this athlete may experience one or more of these signs and symptoms.

Headache	Nausea
Balance Problems	Dizziness
Diplopia - Double Vision	Confusion
Photophobia – Light Sensitivity	Difficulty Sleeping
Misophonia – Noise Sensitivity	Blurred Vision
Feeling Sluggish or Groggy	Memory Problems
Difficulty Concentrating	

Following a concussion your brain needs time to heal. **Until you completely recover from your concussion, you will be held out of all athletic activity.** Exercise or activities that involve a lot of concentration, such as studying, working on the computer, or playing video games may cause concussion symptoms (such as headache or tiredness) to reappear or get worse. While your brain is still healing, you are much more likely to have a repeat concussion. In rare cases, repeat concussions can cause permanent brain damage, and even death. Severe brain injury can change your whole life.

WATCH FOR ANY OF THE FOLLOWING PROBLEMS:

Worsening headache	Stumbling/loss of balance
Vomiting	Weakness in one arm/leg
Decreased level of Consciousness	Blurred Vision
Dilated Pupils	Increased irritability
Increased Confusion	

If any of the above symptoms appear or increase, please seek medical attention immediately.

If you have any questions or concerns you may contact your Athletic Trainer, Physician, or nearest hospital.

Athletic Trainer _____ Phone _____

Physician _____Phone _____

Hospital_____Phone_____

When your symptoms are completely gone and your concussion testing results have returned to a normal level, you will perform exertional testing under the supervision of your athletic trainer. **Before returning to your sport, you must have written medical clearance from a licensed healthcare professional.**

Daily School Schedule

Name:_____

Grade:_____

Date of Injury:_____

Period	Class	Teacher
1		
2		
3		
4		
5		
6		
7		

Attachment 7

HEADS UP CONCUSSION IN HIGH SCHOOL SPORTS

A FACT SHEET FOR ATHLETES

What is a concussion?

A concussion is a brain injury that:

- Is caused by a bump, blow, or jolt to the head or body.
- Can change the way your brain normally works.
- Can occur during practices or games in any sport or recreational activity.
- Can happen even if you haven't been knocked out.
- Can be serious even if you've just been "dinged" or "had your bell rung."

All concussions are serious. A concussion can affect your ability to do schoolwork and other activities (such as playing video games, working on a computer, studying, driving, or exercising). Most people with a concussion get better, but it is important to give your brain time to heal.

What are the symptoms of a concussion?

You can't see a concussion, but you might notice ***one or more*** of the symptoms listed below or that you "don't feel right" soon after, a few days after, or even weeks after the injury.

- Headache or "pressure" in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Bothered by light or noise
- Feeling sluggish, hazy, foggy, or groggy
- Difficulty paying attention
- Memory problems
- Confusion

What should I do if I think I have a concussion?

- **Tell your coaches and your parents.** Never ignore a bump or blow to the head even if you feel fine. Also, tell your coach right away if you think you have a concussion or if one of your teammates might have a concussion.
- **Get a medical check-up.** A doctor or other health care professional can tell if you have a concussion and when it is OK to return to play.
- **Give yourself time to get better.** If you have a concussion, your brain needs time to heal. While your brain is still healing, you are much more likely to have another concussion. Repeat concussions can increase the time it takes for you to recover and may cause more damage to your brain. It is important to rest and not return to play until you get the OK from your health care professional that you are symptom-free.

How can I prevent a concussion?

Every sport is different, but there are steps you can take to protect yourself.

- Use the proper sports equipment, including personal protective equipment. In order for equipment to protect you, it must be:
  - The right equipment for the game, position, or activity
  - Worn correctly and the correct size and fit
  - Used every time you play or practice
- Follow your coach's rules for safety and the rules of the sport.
- Practice good sportsmanship at all times.

If you think you have a concussion:
Don't hide it. Report it. Take time to recover.

It's better to miss one game than the whole season.

For more information and to order additional materials ***free-of-charge***, visit: **www.cdc.gov/Concussion**.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

June 2010

Attachment 8

HEADS UP CONCUSSION IN HIGH SCHOOL SPORTS

A FACT SHEET FOR **PARENTS**

What is a concussion?

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

What are the signs and symptoms?

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 after the injury. If your teen reports ***one or more*** symptoms of concussion listed below, or if you notice the symptoms yourself, keep your teen out of play and seek medical attention right away.

Signs Observed by Parents or Guardians	Symptoms Reported by Athlete
• Appears dazed or stunned	• Headache or "pressure" in head
• Is confused about assignment or position	• Nausea or vomiting
• Forgets an instruction	• Balance problems or dizziness
• Is unsure of game, score, or opponent	• Double or blurry vision
• Moves clumsily	• Sensitivity to light or noise
• Answers questions slowly	• Feeling sluggish, hazy, foggy, or groggy
• Loses consciousness *(even briefly)*	• Concentration or memory problems
• Shows mood, behavior, or personality changes	• Confusion
• Can't recall events *prior* to hit or fall	• Just not "feeling right" or is "feeling down"
• Can't recall events *after* hit or fall	

How can you help your teen prevent a concussion?

Every sport is different, but there are steps your teens can take to protect themselves from concussion and other injuries.

- Make sure they wear the right protective equipment for their activity. It should fit properly, be well maintained, and be worn consistently and correctly.
- Ensure that they follow their coaches' rules for safety and the rules of the sport.
- Encourage them to practice good sportsmanship at all times.

What should you do if you think your teen has a concussion?

1. **Keep your teen out of play.** If your teen has a concussion, her/his brain needs time to heal. Don't let your teen return to play the day of the injury and until a health care professional, experienced in evaluating for concussion, says your teen is symptom-free and it's OK to return to play. A repeat concussion that occurs before the brain recovers from the first—usually within a short period of time (hours, days, or weeks)—can slow recovery or increase the likelihood of having long-term problems. In rare cases, repeat concussions can result in edema (brain swelling), permanent brain damage, and even death.
2. **Seek medical attention right away.** A health care professional experienced in evaluating for concussion will be able to decide how serious the concussion is and when it is safe for your teen to return to sports.
3. **Teach your teen that it's not smart to play with a concussion.** Rest is key after a concussion. Sometimes athletes wrongly believe that it shows strength and courage to play injured. Discourage others from pressuring injured athletes to play. Don't let your teen convince you that s/he's "just fine."
4. **Tell all of your teen's coaches and the student's school nurse about ANY concussion.** Coaches, school nurses, and other school staff should know if your teen has ever had a concussion. Your teen may need to limit activities while s/he is recovering from a concussion. Things such as studying, driving, working on a computer, playing video games, or exercising may cause concussion symptoms to reappear or get worse. Talk to your health care professional, as well as your teen's coaches, school nurse, and teachers. If needed, they can help adjust your teen's school activities during her/his recovery.

If you think your teen has a concussion:
Don't assess it yourself. Take him/her out of play.
Seek the advice of a health care professional.

It's better to miss one game than the whole season.

For more information and to order additional materials ***free-of-charge***, visit: **www.cdc.gov/Concussion**.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

June 2010

Attachment 9

U.S. Department of Health and Human Services
centers for disease control and prevention

A Fact Sheet for **COACHES**

To download the coaches fact sheet in Spanish, please visit **www.cdc.gov/ConcussionInYouthSports**
Para descargar la hoja informativa para los entrenadores en español, por favor visite:
www.cdc.gov/ConcussionInYouthSports

THE FACTS

- A concussion is a **brain injury**.
- All concussions are **serious**.
- Concussions can occur **without** loss of consciousness.
- Concussions can occur **in any sport**.
- Recognition and proper management of concussions when they **first occur** can help prevent further injury or even death.

WHAT IS A CONCUSSION?

A concussion is an injury that changes how the cells in the brain normally work. A concussion is caused by a blow to the head or body that causes the brain to move rapidly inside the skull. Even a "ding," "getting your bell rung," or what seems to be a mild bump or blow to the head can be serious. Concussions can also result from a fall or from players colliding with each other or with obstacles, such as a goalpost.

The potential for concussions is greatest in athletic environments where collisions are common.[1] Concussions can occur, however, in ***any*** organized or unorganized sport or recreational activity. As many as 3.8 million sports- and recreation-related concussions occur in the United States each year.[2]

RECOGNIZING A POSSIBLE CONCUSSION

To help recognize a concussion, you should watch for the following two things among your athletes:

1. A forceful blow to the head or body that results in rapid movement of the head.

-and-

2. Any change in the athlete's behavior, thinking, or physical functioning. (See the signs and symptoms of concussion listed on the next page.)

July 2007

It's better to miss one game than the whole season.

SIGNS AND SYMPTOMS

SIGNS OBSERVED BY COACHING STAFF

- Appears dazed or stunned
- Is confused about assignment or position
- Forgets sports plays
- Is unsure of game, score, or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows behavior or personality changes
- Can't recall events prior to hit or fall
- Can't recall events after hit or fall

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
- Does not "feel right"

Adapted from Lovell et al. 2004

Athletes who experience any of these signs or symptoms after a bump or blow to the head should be kept from play until given permission to return to play by a health care professional with experience in evaluating for concussion. Signs and symptoms of concussion can last from several minutes to days, weeks, months, or even longer in some cases.

Remember, you can't see a concussion and some athletes may not experience and/or report symptoms until hours or days after the injury. If you have any suspicion that your athlete has a concussion, you should keep the athlete out of the game or practice.

PREVENTION AND PREPARATION

As a coach, you can play a key role in preventing concussions and responding to them properly when they occur. Here are some steps you can take to ensure the best outcome for your athletes and the team:

- **Educate athletes and parents about concussion.** Talk with athletes and their parents about the dangers and potential long-term consequences of concussion. For more information on long-term effects of concussion, view the following online video clip: http://www.cdc.gov/ncipc/tbi/Coaches_Tool_Kit.htm#Video.

Explain your concerns about concussion and your expectations of safe play to athletes, parents, and assistant coaches. Pass out the concussion fact sheets for athletes and for parents at the beginning of the season and again if a concussion occurs.

- **Insist that safety comes first.**
  - > Teach athletes safe playing techniques and encourage them to follow the rules of play.
  - > Encourage athletes to practice good sportsmanship at all times.
  - > Make sure athletes wear the right protective equipment for their activity (such as helmets, padding, shin guards, and eye and mouth guards). Protective equipment should fit properly, be well maintained, and be worn consistently and correctly.
  - > Review the athlete fact sheet with your team to help them recognize the signs and symptoms of a concussion.

Check with your youth sports league or administrator about concussion policies. Concussion policy statements can be developed to include the league's commitment to safety, a brief description of concussion, and information on when athletes can safely return to play following a concussion (i.e., an athlete with known or suspected concussion should be kept from play until evaluated and given permission to return by a health care professional). Parents and athletes should sign the concussion policy statement at the beginning of the sports season.

- **Teach athletes and parents that it's not smart to play with a concussion.** Sometimes players and parents wrongly believe that it shows strength and courage to play injured. Discourage others from pressuring injured athletes to play. Don't let athletes persuade you that they're "just fine" after they have sustained any bump or blow to the head. Ask if players have ever had a concussion.

- **Prevent long-term problems.** A repeat concussion that occurs before the brain recovers from the first—usually within a short period of time (hours, days, or weeks)—can slow recovery or increase the likelihood of having long-term problems. In rare cases, repeat concussions can result in brain swelling, permanent brain damage, and even death. This more serious condition is called *second impact syndrome*.[4,5] Keep athletes with known or suspected concussion from play until they have been evaluated and given permission to return to play by a health care professional with experience in evaluating for concussion. Remind your athletes: "It's better to miss one game than the whole season."

ACTION PLAN

WHAT SHOULD A COACH DO WHEN A CONCUSSION IS SUSPECTED?

1. **Remove the athlete from play.** Look for the signs and symptoms of a concussion if your athlete has experienced a bump or blow to the head. Athletes who experience signs or symptoms of concussion should not be allowed to return to play. When in doubt, keep the athlete out of play.

2. **Ensure that the athlete is evaluated right away by an appropriate health care professional.** Do not try to judge the severity of the injury yourself. Health care professionals have a number of methods that they can use to assess the severity of concussions. As a coach, recording the following information can help health care professionals in assessing the athlete after the injury:

   - Cause of the injury and force of the hit or blow to the head
   - Any loss of consciousness (passed out/knocked out) and if so, for how long
   - Any memory loss immediately following the injury
   - Any seizures immediately following the injury
   - Number of previous concussions (if any)

3. **Inform the athlete's parents or guardians about the possible concussion and give them the fact sheet on concussion.** Make sure they know that the athlete should be seen by a health care professional experienced in evaluating for concussion.

4. **Allow the athlete to return to play only with permission from a health care professional with experience in evaluating for concussion.** A repeat concussion that occurs before the brain recovers from the first can slow recovery or increase the likelihood of having long-term problems. Prevent common long-term problems and the rare *second impact syndrome* by delaying the athlete's return to the activity until the player receives appropriate medical evaluation and approval for return to play.

REFERENCES

1. Powell JW. Cerebral concussion: causes, effects, and risks in sports. *Journal of Athletic Training* 2001; 36(3):307-311.
2. Langlois JA, Rutland-Brown W, Wald M. The epidemiology and impact of traumatic brain injury: a brief overview. *Journal of Head Trauma Rehabilitation* 2006; 21(5):375-378.
3. Lovell MR, Collins MW, Iverson GL, Johnston KM, Bradley JP. Grade 1 or "ding" concussions in high school athletes. *The American Journal of Sports Medicine* 2004; 32(1):47-54.
4. Institute of Medicine (US). Is soccer bad for children's heads? Summary of the IOM Workshop on Neuropsychological Consequences of Head Impact in Youth Soccer. Washington (DC): National Academy Press; 2002.
5. Centers for Disease Control and Prevention (CDC). Sports-related recurrent brain injuries-United States. *Morbidity and Mortality Weekly Report* 1997; 46(10):224-227. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/00046702.htm.

If you think your athlete has sustained a concussion... take him/her out of play, and seek the advice of a health care professional experienced in evaluating for concussion.

For more information and to order additional materials **free-of-charge**, visit:
www.cdc.gov/ConcussionInYouthSports

For more detailed information on concussion and traumatic brain injury, visit:
www.cdc.gov/injury

Resources

A. Organizations and agencies that provide resources related to concussions

1. American Academy of Pediatrics, http://www.aap.org
2. American Medical Society for Sports Medicine, http://www.amssm.org/
3. Brain Injury Association of Virginia, http://www.biav.net
4. Children's Hospital of the King's Daughters, http://www.chkd.org
5. Children's National Medical Center, http://www.childrensnational.org
6. Consensus Statement on Concussion in Sport (3rd International Conference on Concussion in Sport, Zurich, November 2008), http://www.sportconcussions.com/html/Zurich%20Statement.pdf
7. National Academy of Neuropsychology, http://www.nanonline.org
8. Virginia Athletic Trainers' Association**,** http://www.vata.us
9. Virginia College of Emergency Physicians, https://www.acep.org
10. Virginia Department of Health, http://www.vdh.state.va.us
11. Virginia High School League, http://www.vhsl.org

B. Concussion assessment tools

1. Sports Concussion Assessment Tool (SCAT), Concussion in Sport Group, http://www.amssm.org/MemberFiles/SCAT_v13-_Side_2.doc
2. The Sideline Assessment for Concussions, Brain Injury Association of America, http://www.knowconcussion.org/pdfs/sideline_assessment.pdf and http://www.knowconcussion.org/pdfs/bess.pdf
3. Sports-Related Concussions in Children and Adolescents, Pediatrics, http://pediatrics.aappublications.org/cgi/content/abstract/peds.2010-2005v1?rss=1

C. Educational strategies for working with students who have concussions

1. Brain Injury and the Schools: A Guide for Educators, Brain Injury Association of Virginia, http://www.biav.net