

2011 - 2012



**Athletic
Trainers
Packet**

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WEST VIRGINIA SECONDARY SCHOOL ACTIVITIES COMMISSION



2875 Staunton Turnpike, Parkersburg, WV 26104-7219

TELEPHONE: 304-485-5494
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BULLETIN

TO: Athletic Trainers
FROM: Ray Londeree, Assistant Executive Director
DATE: July 2011
SUBJECT: Items of Interest for 2011

REMINDER: All Persons Regardless of Certification Must Attend A 2011 Athletic Trainers Clinic

Points of Special Interest:

1. Concussion Information – Read/Study information completely.
2. WVSSAC Body Fluid Procedures: Be sure to familiarize yourself with this document. Also, be familiar with National Federation's Communicable Disease Procedures found in every rules book.
3. Health Insurance Portability and Accountability Act (HIPAA) - (Refer to your county policy)
4. To clean a contaminated surface it is recommended that a 1/100 dilution of water and household bleach be used. We have been informed that a product called "Precise" is CDC approved to kill everything and will not discolor fabric.
5. Be sure "Prevent Paralysis – Don't Hit With Your Head" is shown to all football players before any live contact occurs. All schools should have a copy of this tape. Please notify us if you cannot locate the videotape.
6. National Federation Rule 1-5-3c – Football: This rule allows hard materials on hand, wrist, forearm or elbow when padded as specified if directed in writing by a licensed medical physician to protect injury. Be sure to become familiar with this rule.
7. Physical Examinations – All student athletes are required to have a complete physical examination each year (Exception – Wood, Lincoln, and Jackson Counties are currently on an experimental plan).
8. Wrestling Issues:
 - A) Weight Loss – The NFHS has implemented a new Weight Control Rule beginning with the 2006-2007 Wrestling season. The procedure for West Virginia will be developed and in place prior to the 2006 season.
 - B) Skin Disease Problems – At the state tournament, a physician will determine if an infected (impetigo) wrestler will be allowed to compete. If the infected athlete is allowed to compete, he must cover the infected area. In addition, all mats will be disinfected between sessions.
9. Athletic trainers are required in all member high schools that sponsor a football program.

10. Athletic Trainers Reports (high schools only): Information must be compiled for the State Department of Education concerning the availability of doctors, athletic trainers, and ambulances at varsity football contests. Please complete the enclosed forms for home and away games and return to Dr. Dan Martin at the end of the season.
11. The Sports Medicine Committee meets on a yearly basis. If there are any items that you feel should be addressed, do not hesitate to contact this office.
12. Please note the following interpretation from Dr. Greg Elkins, member of the Sports Medicine Committee:

“Fractures which are appropriate for soft casting and sports participation included fractures of upper extremities which are stable, non-displaced fractures and have not required manipulation (setting). Participation with these type injuries should not lead to worsening of the injury if appropriately immobilized. Continued participation of the student athlete with a non-stable or displaced fracture, or a fracture which has required manipulation, may however lead to further complications.”
13. Spearing – Special emphasis should be given to this issue prior to the first practice and reinforced at all practices and contests.
14. Use of Performance Enhancing Substances by Athletes – It is the philosophy of the National Federation and the WVSSAC that students be encouraged and supported in their efforts to develop and maintain a healthy life-style. In promotion of safety and healthy life-styles, the WVSSAC Sports Medicine Committee requests that coaches assume the responsibility of informing athletes that the uses of such substances should be discontinued especially during the times when dehydration may occur due to potential life threatening consequences. The committee further encourages all athletic trainers to support coaches in promoting healthy life-styles.
15. Injury/Participation Procedure at WVSSAC Championship Events – Medical personnel (athletic trainers) will have the jurisdiction concerning the return of a player to competition after an injury. If a parent refuses to follow the determination of the authorized person, a release form must be signed.
16. Mouth Guard Policy for Basketball, Soccer, and Wrestling – The use of mouth guards is recommended for all practices and matches. Please note the mandatory requirement has been replaced by a recommendation.
17. Heat Concerns – Athletic Trainers are reminded to be extremely cautious of heat particularly between 12:00 noon and 5:00 p.m. It is further recommended that athletic trainers within a county establish a procedure for notifying junior high/middle school coaches when the temperature is unsafe for practice.

RL/ag

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**2011-2012
ATHLETIC TRAINERS CLINICS**

<u>DATE</u>	<u>LOCATION</u>	<u>TIME</u>	<u>COORDINATOR</u>
July 27	Wheeling Park H. S.	6:00 p.m.	Dwaine Rodgers
July 28	Huntington H.S.	6:00 p.m.	Bruce Senior
July 31	Parkersburg South H. S.	4:00 p.m.	Rick Leach
Aug. 1	Woodrow Wilson H. S. Beckley	6:00 p.m.	Eric Dillon
Aug. 2	Capital H. S.	6:00 p.m.	Clinton Giles
Aug. 4	East Fairmont H. S.	6:00 p.m.	Dave Nuzum
Aug. 5	Hedgesville H. S.	6:00 p.m.	Ron Allen
Aug. 10	WVSSAC Office	7:00 p.m.	Ray Londeree

SCHOOLS: The position of **Limited Football Trainer as approved by the WV State Department of Education** shall be **required** to attend any athletic trainers' clinic which is sponsored by this Commission.

ALL TRAINERS, REGARDLESS OF CERTIFICATION, MUST ATTEND A 2011 ATHLETIC TRAINERS CLINIC.

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BULLETIN

Athletic Trainer Requirement

Athletic Trainers shall be required in all member high schools of the WVSSAC and must meet the guidelines as set by the State Department of Education Policy 5112. This policy will apply to member public and non-public schools participating in the sport of Football.

See the following link to check State Board Policy:

wvde.state.wv.us

Adopted by the WVSSAC Board of Directors on January 21, 1999.

ATTACHMENT A

ARTIFICIAL LIMB POLICY

Any school that has a student with an artificial limb who wishes to participate in athletics must do the following:

1. Obtain a statement from an orthopedic surgeon licensed to practice medicine in the state of West Virginia that student's participation in the particular sport(s) he desires to participate in is not likely to cause harm to the student with the artificial limb or the other participants in that sports through the use of such artificial limb.
2. Submit such statement and photograph of the artificial limb to the Executive Director of the West Virginia Secondary School Activities Commission before the student commences practice for or participates in said sport.
3. Obtain written permission from the West Virginia Secondary School Activities Commission to participate in such sport before commencing practice or participation.
4. Advise opponents and contest officials at least one week before each contest of such student's participation with such artificial limb.
5. Should the West Virginia Secondary School Activities Commission find that the use of such artificial limb is likely to cause harm to the student using the same or to other participants in the particular sport(s) for which participation is sought, the Commission may withhold such permission or make participation in any particular sport contingent upon the student's exercise of such safeguards as the Commission may prescribe. Any student, parent, principal, or school may appeal the Commission's ruling in this regard the same as any other adverse decision of the Executive Director.

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BULLETIN

TO: High School Athletic Trainers
FROM: Gary Ray, Executive Director
SUBJECT: Athletic Trainers and Physicians

In recent years, the State Department of Education, the West Virginia Athletic Trainers Association, and the West Virginia Chapter American Academy of Family Physicians and the WVSSAC have made an effort to find out how many football games were served by trainers and doctors.

Please find enclosed a report form that must be completed by the principal or athletic trainer for each football game (**home and away**) and return to:

Dr. Dan Martin

MSC 785

West Virginia Wesleyan College

59 College Avenue

Buckhannon, WV 26201

Phone: 304-473-8103

E-Mail: martin_d1@wwwc.edu

I realize that you are very busy and have many reports to complete. We would appreciate your cooperation in this matter.

Have a great year!

GR/ag

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FOOTBALLREPORT FORFALL 2011

Varsity high school football only. This covers the entire season starting with the first practice in August and will include all practices, all scrimmages, and all games including payoffs.

SCHOOL	
--------	--

This report is for the week of (Mark box with an X)

<input type="checkbox"/>	Aug 1 – 6	<input type="checkbox"/>	Aug 8 – 13	<input type="checkbox"/>	Aug 15 – 20	<input type="checkbox"/>	Aug 22 – 27	<input type="checkbox"/>	8/ 29 – 9/3	<input type="checkbox"/>	Sept 5 - 10
<input type="checkbox"/>	Sept 12 - 17	<input type="checkbox"/>	Sept 19 - 24	<input type="checkbox"/>	9/ 26 – 10/ 1	<input type="checkbox"/>	Oct 3 - 8	<input type="checkbox"/>	Oct 10 - 15	<input type="checkbox"/>	Oct17 - 22
<input type="checkbox"/>	Oct 24 – 29	<input type="checkbox"/>	10/ 31 – 11/5	<input type="checkbox"/>	Nov 7 - 12	<input type="checkbox"/>	Nov 14 - 19	<input type="checkbox"/>	Nov 21 - 26	<input type="checkbox"/>	11/ 28 – 12/ 3

During the previous week (Monday through Saturday) list ALL concussions and then list all other injuries that you referred for additional diagnosis/treatment.

CONCUSSIONS

Player position	Practice	Scrimmage	Game	Transported By ambulance	Was this season ending?
<i>Example: Wide Receiver</i>		X			

INJURIES (not concussions) (ex. heat, fracture, dislocation, laceration, sprain, strain)

Player position	Injury (briefly describe include Right or left)	Practice	Scrimmage	Game	Transported By ambulance	Was this season ending?
<i>Example: QB</i>	<i>Right shoulder dislocation</i>		X		X	X

If there was a game last week:

Ambulance present at kick off? YES NO Ambulance present at game’s end? YES NO

Physician present on sideline?	YES	NO	NAME	MD	DO	DC
Did you attend this game?	YES		NO			
IF not, who covered	Their credentials					
Person completing this report:	Credentials:					

Any questions please contact the WVSSAC OFFICE

or Dr. Dan Martin West Virginia Wesleyan College Buckhannon, WV 26201

304-473-8103 OR email to:martin_d1@wvwc.edu

Thank you for your help and cooperation with the WVSSAC report.



Helmet Removal Guidelines taken from the NFHS Sports Medicine Handbook, Third Edition.

The NFHS supports the recommendation and guidelines set forth by the Inter-Association Task Force for Appropriate Care of the Spine-Injured Athlete.

IMMEDIATE CARE OF SUSPECTED SPINE INJURIES

- ❖ Any athlete suspected of having a spinal injury should not be moved and should be managed as though a spinal injury exists.
- ❖ The athlete's airway, breathing and circulation, neurological status and level of consciousness should be assessed
- ❖ The athlete should not be moved unless absolutely essentially to maintain airway, breathing or circulation
- ❖ If the athlete must be moved to maintain airway, breathing or circulation, the athlete should be placed in a supine position while maintaining spinal immobilization
- ❖ When moving a suspected spine-injured athlete, the head and trunk should be moved as a unit. One accepted technique is to manually splint the head to the trunk
- ❖ The Emergency Medical Services system should be activated

FACE-MASK REMOVAL

The face mask should be removed prior to transportation, regardless of current respiratory status. Those involved in the pre-hospital care of injured football players should have the tools for face mask removal readily available.

FOOTBALL HELMET REMOVAL

The athletic helmet and chin strap should only be removed

- ❖ If the helmet and chin strap do not hold the head securely, such that immobilization of the helmet does not also immobilize the head
- ❖ If the design of the helmet and chin strap is such that even after removal of the face mask the airway cannot be controlled or ventilation be provided
- ❖ If the face mask cannot be removed after a reasonable period of time
- ❖ If the helmet prevents immobilization for transportation in an appropriate position

HELMET REMOVAL

- ❖ Spinal immobilization must be maintained while removing the helmet
- ❖ Helmet removal should be frequently practiced under proper supervision
- ❖ Specific guidelines for helmet removal need to be developed
- ❖ In most circumstances, it may be helpful to remove cheek padding and/or deflate air padding to helmet removal

EQUIPMENT

- ❖ Appropriate spinal alignment must be maintained
- ❖ There needs to be a realization that the helmet and shoulder pads elevate an athlete's trunk when in supine position
- ❖ If the helmet is removed, then shoulder pads must be removed to ensure proper spinal alignment
- ❖ If the helmet is not removed, the front of the shoulder pads can be opened to allow access for CPR

This task force encourages the development of a local emergency care plan regarding the pre-hospital care of the athlete with a suspected spine injury. This plan should include communication with the institution's administration and those directly involved with the assessment and transportation of the injured athlete.

All providers of pre-hospital care should practice and be competent in all of the skills identified in these guidelines before they are needed in an emergency situation.

MORE ON HELMET REMOVAL

SIGNIFICANCE

Athletic participation carries with it the risk of catastrophic cervical injury. Because of the potential for permanent neurological injury and even death associated with cervical spine injury, proper on-field management is imperative to avoid further injury and catastrophic consequences. **Sports medicine professionals support the practice of not removing football helmets when there is even the slightest chance of cervical spine injury for the following reasons:**

1. The football helmet does not hinder proper immobilization techniques
2. The football helmet does not hinder the ability of the examiner to visualize facial and cranial injuries
3. The football helmet allows proper management and control of the airway during CPR
4. The football helmet will not tend to cause hyper flexion of the cervical spine in the presence of shoulder pads

RECOGNITION AND MANAGEMENT

- ❖ Any suspected head and/or spine injury should be attended to with the helmet left on the athlete
- ❖ If in doubt, **DO NOT REMOVE HELMET**
- ❖ Each institution should develop a venue specific emergency plan for the pre-hospital management of the spine-injured athlete, including:
 1. A uniform understanding when and when not to remove the helmet
 2. Established procedures, periodically practiced and reviewed, in proper spinal immobilization and in summoning emergency care (Also see NFHS Guidelines for Emergency Planning)
 3. Assurance that an athletic trainer or coach carries on their person a face-mask removal tool such as a screwdriver, power screwdriver, Trainer's Angel™, FM Extractor™, or a modified anvil pruner. A backup removal tool should also be on hand if a screwdriver is the first tool of choice

HELMET REMOVAL IN OTHER SPORTS

It is recommended that each situation be treated individually and held to the same criteria for determining the removal of football helmets. In all cases it is recommended that the helmet be left on during pre-hospital management of the spine-injured athlete, unless:

- The helmet is not form fitted to the head, such that the head is able to move within the helmet and is not provided adequate immobilization
- The design of the helmet does not allow for airway control even after the face mask is removed
- The face mask is difficult to remove and cannot be done in a reasonable amount of time
- The helmet does not allow immobilization in a safe position for transportation

RECOMMENDATIONS FOR INJURY PREVENTION

- Instruct coaches in proper helmet techniques
- Educate coaches, athletes, administrators and parents on wrongful, improper use of helmets, i.e., spearing, head blocking, tackling, etc. The head should never be used as the initial contact point when blocking or tackling
- Engage in proper on-field management of spinal injuries (i.e., a downed athlete should be aided only by designated medical personnel and not by other athletes)
- Adopt the recommendations and guidelines established by the Inter-Association Task Force's for Appropriate Care of the Spine Injured Athlete
- Part of the Emergency Plan should be to regularly practice helmet removal, log roll and other appropriate procedures possibly necessary in managing suspected cervical spine injury.

REFERENCES

- Kleiner DM. New guidelines for the appropriate care of a suspected spine injury. *Athletic Therapy Today*. 1998; 3: 50-51
- Kleiner DM, Almquist JL, Bailes J, et al. Prehospital care of the spine injured athlete. *National Athletic Trainers' Association*; 2001. <http://www.nata.org/spineinjuredathlete/main.htm>
- Mueller F, Cantu R. 25th Annual Report 1982-2007. *National Center for Catastrophic Sports Injury Research*; Chapel Hill, NC. 2008
- Mueller F, Blyth C. An update on football deaths and catastrophic injuries. *The Physician and Sportsmedicine*. 1986; 14: 139-142
- National Collegiate Athletic Association. Guideline 4e: Guidelines for helmet fitting and removal in athletics. 2008-2009 *NCAA Sports Medicine Handbook (19th Edition)*. 2008: 97-99
- National Athletic Trainers Association: Spine Injury Management Kit Release 1.0 (Human Kinetics)



NFHS GUIDELINES ON HANDLING CONTESTS DURING LIGHTNING DISTURBANCES

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

The purpose of these guidelines is to provide a default policy to those responsible for making decisions concerning the suspension and restarting of contests based on the presence of lightning. The preferred sources from which to request such a policy for your facility would include your state high school association and the nearest office of the National Weather Service.

Proactive Planning

1. Assign staff to monitor local weather conditions before and during events.
2. Develop an evacuation plan, including identification of appropriate nearby shelters.
3. Develop criteria for suspension and resumption of play:
 - a. When thunder is heard, or a cloud-to-ground lightning bolt is seen, the thunderstorm is close enough to strike your location with lightning. Suspend play and take shelter immediately.
 - b. Thirty-minute rule. Once play has been suspended, wait at least 30 minutes after the last thunder is heard or flash of lightning is witnessed prior to resuming play.
 - c. Any subsequent thunder or lightning after the beginning of the 30 minute count, reset the clock and another 30 minute count should begin.
4. Hold periodic reviews for appropriate personnel.

For more detailed information, refer to the "Guidelines for Lightning Safety" section contained in the NFHS Sports Medicine Handbook.

Reviewed and Approved in October 2010



WVSSAC

Return to Play (RTP) Protocol

An athlete removed from a contest that shows signs/symptoms of a concussion shall be immediately evaluated by an appropriate health care professional. If no appropriate health care professional is available, the athlete shall not be allowed to RTP.

When the athlete is evaluated by the appropriate health care professional, if it is determined the athlete has suffered a concussion, the athlete shall not be permitted to RTP the same day as the concussion. If it is determined by the appropriate health care professional that the athlete did not suffer a concussion, the athlete may be returned to play as deemed appropriate by the health care professional.

RTP shall be delayed until athlete is asymptomatic and has undergone a progression of tests to determine if they are able to RTP.

The progression shall follow: (Neuro-cognitive testing is recommended if deemed appropriate by the appropriate health care professional.)

- No activity with complete physical and cognitive rest
- Light aerobic exercise (less than 70% of maximum heart rate)
- Sport specific exercise (drills specific to the athlete's sport)
- Non-contact training drills (more intense sport drills with no contact from other players)
- Full contact practice (following medical clearance)
- Return to Play (normal game play)

If any symptoms occur during the progression, the athlete should drop back to the previous level and try to complete that level after 24 hour rest period.

Appropriate Health Care Professional

- Medical Doctor (MD)
- Doctor of Osteopathy (DO)
- Doctor of Chiropractic (DC)
- Advanced Registered Nurse Practitioner (ARNP)
- Physician Assistant (PA-C)
- Registered Certified Athletic Trainers (ATC/R)

Approved Board of Directors 5/06/10

rk:Sports Medicine/Return to Play



A Parent's Guide to Concussion in Sports

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 as a result of a blow to the head or body. An athlete does not have to lose consciousness ("knocked-out") to suffer a concussion.

Concussion Facts

- 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 girl's lacrosse, girl's soccer, boy's lacrosse, wrestling and girl's basketball follow closely behind. All athletes are at risk.
- A concussion is a traumatic injury to the brain.
- Concussion symptoms may last from a few days to several months.
- Concussions can cause symptoms which interfere with school, work, and social life.
- An athlete should not return to sports while still having symptoms from a concussion as they are at risk for prolonging symptoms and further injury.
- 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.

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	

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 play, be it a game or practice. Continuing to participate in physical activity after a concussion can lead to worsening concussion symptoms, increased risk for further injury, and even death. Parents and coaches are not expected to be able to "diagnose" a concussion, as that is the job of a medical professional. However, you

must be aware of the signs and symptoms of a concussion and if you are suspicious, then your child must stop playing.

When in doubt, sit them out!

All athletes who sustain a concussion need to be evaluated by a health care professional who is familiar with sports concussions. 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 taken to the emergency department immediately.

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 us that the young brain does not recover quickly enough for an athlete to return to activity in such a short time.

Concerns over athletes returning to play too quickly have led state lawmakers in both Oregon and Washington to pass laws stating that **no player shall return to play following a concussion on that same day and the athlete must be cleared by an appropriate health-care professional before he or she are allowed to return to play in games or practices**. The laws also mandate that coaches receive education on recognizing the signs and symptoms of concussion.

Once an athlete no longer has symptoms of a concussion and is cleared to return to play by health care professional knowledgeable in the care of sports concussions 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. The return to play schedule should proceed as below following medical clearance:

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

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 cease activity and be re-evaluated by their health care provider.

How can a concussion affect schoolwork?

Following a concussion, many 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 it is best to lessen the athlete's class load early on after the injury. This may include staying home from school for a few days, followed by a lightened schedule for a few days, or perhaps a longer period of time, if needed. Decreasing the stress on the brain early on after a concussion may lessen symptoms and 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 a concussion.
- Monitor sports equipment for safety, fit, and maintenance.
- Ask teachers to monitor any decrease in grades or changes in behavior that could indicate 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 an athlete not return to play until they have completely recovered from a concussion?

Athletes who are not fully recovered from an initial concussion are significantly vulnerable for recurrent, cumulative, and even catastrophic consequences of a second concussive injury. Such difficulties are prevented if the athlete is allowed time to recover from the concussion and return to play decisions are carefully made. No athlete should return-to-sport or other at-risk participation when 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 brain injuries (e.g. skull fracture, bleeding, swelling), they are not normally utilized, even by athletes who have sustained severe concussions. A concussion is diagnosed based upon the athlete’s story of the injury and the health care provider’s physical examination.

What is the best treatment to help my child recover more quickly from a concussion?

The best treatment for a concussion is rest. There are no medications that can speed the recovery from a concussion. Exposure to loud noises, bright lights, computers, video games, television and phones (including text messaging) all 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 if symptoms worsen.

How long do the symptoms of a concussion usually last?

The symptoms of a concussion will usually go away within one week of the initial injury. You should anticipate that your child will likely be out of sports for about two weeks following a concussion. However, in some cases symptoms may last for several weeks, or even months. Symptoms such as headache, memory problems, poor concentration, 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 surrounding each individual injury, such as how the injury happened and length of symptoms following the concussion, are very important and must be considered when assessing an athlete’s risk for further and potentially more serious concussions. The decision to “retire” from sports is a decision best reached following a complete evaluation by your child’s primary care provider and consultation with a physician or neuropsychologist who specializes in treating sports concussion.

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 encephalopathy” in several former NFL players has received a great deal of media attention lately. Very little is known about what may be causing dramatic abnormalities in the brains of these unfortunate retired football players. At this time we have very little knowledge of the long-term effects of concussions which happen during high school athletics.

In the cases of the retired NFL players, it appears that most had long careers in the NFL after playing in high school and college. In most cases, they played football for over 20 years and suffered multiple concussions in addition to hundreds of other blows to their heads. Alcohol and steroid use may also be contributing factors in some cases. Obviously, the average high school athlete does not come close to suffering the total number or shear force of head trauma seen by professional football players. However, the fact that we know very little about the long-term effects of concussions in young athletes is further reason to very carefully manage each concussion.

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.

If you have any further questions regarding concussions in high school athletes or want to know how to find a concussion specialist in your area please contact Michael C. Koester, MD, ATC and Chair of the NFHS Sports Medicine Advisory Committee at michael.koester@slocumcenter.com.

April 2010

Concussion in Sports - What You Need to Know

Ordering Information at www.nfhslearn.com



Steps to access the FREE course:

1. Go to www.nfhslearn.com
2. Sign in with your e-mail and password if you have previously registered.
3. If you need to register, it will only take a couple of minutes. All users at www.nfhslearn.com must be registered with a unique e-mail address and password.
4. Toward the upper left-hand part of the screen, you will see the "Click to Access This Free Course" for "**Concussion in Sports — What You Need to Know.**"
5. You can order licenses as an individual to take the course yourself OR you can purchase courses in bulk if you intend to distribute the courses to others (there is a limit of 99 licenses per any one order).
6. Note: You will need to click on "Save" once you have put the course(s) in your cart and before you can proceed to Checkout.
7. As you go through the process you will see that you are using the "purchasing process" that is standard for NFHS Coach Education courses. You are not being charged anything for the Concussion courses. You do have the ability to order other courses at the same time, and you will be asked for payment for those.
8. You can then start the course if you ordered as an individual or begin distributing the licenses if you ordered in bulk.
9. If necessary, refer to the form regarding distributing bulk licenses. It can be found in the Locker Room at www.nfhslearn.com.

The online concussion course is offered at no cost to the user. Once you have finished, you will be added to the database as having completed the course. The name of the individual completing the course will appear in the "Coach Search" feature as having completed this course along with any other courses completed at www.nfhslearn.com.

HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND OTHER BLOOD-BORNE PATHOGENS IN SPORTS

Joint Position Statement *by the American Medical Society for Sports Medicine (AMSSM) and the American Orthopaedic Society for Sports Medicine (AOSSM).*

The AMSSM and the AOSSM recognize that human immunodeficiency virus (HIV) infection, as well as other blood-borne pathogens including hepatitis B and C, poses a series of important and complex issues for practitioners involved in the care of athletes. This document is directed toward physicians and other health-care providers involved in the field of sports medicine and is intended to serve as a guideline to 1) understand HIV and other blood-borne pathogens as they relate to sports; 2) implement practical preventive measures that further minimize the low risk of transmission of these pathogens; 3) develop effective educational initiatives regarding these infections, their transmission, and prevention among athletes and others involved in sports; and 4) provide guidance for the care of HIV-infected athletes.

The AMSSM and AOSSM recognize that the medical information concerning blood-borne pathogens, particularly with regard to HIV, is evolving rapidly. This document is intended only as a guideline and is based on the present available knowledge. The following recommendations may change in the future.

HIV AND HEPATITIS B, C, AND D: EPIDEMIOLOGY AND TRANSMISSION-*In the United States alone it is estimated that there are approximately one million HIV-infected persons. This translates into one infection in every 250 Americans.*

The natural history of HIV infection, while continuously being refined, is one of a progressive disease leading to immune suppression and the development of acquired immunodeficiency syndrome (AIDS). The AIDS is characterized by the development of opportunistic infections and malignancies that ultimately lead to the death of the infected person. However the course of the infection is frequently protracted, affording the HIV-infected person many years of good health, during which issues concerning an infected person's involvement in exercise and sports may arise.

The HIV is transmitted through sexual contact, parenteral exposure to blood and blood components, contamination of infected blood into open wounds or mucous membranes, and perinatally from an infected mother to fetus or infant. There is no evidence of transmission via other routes, such as through casual contact in a household or the aerosol route. One case was reported of transmission from an HIV-infected hemophiliac to his twin hemophiliac brother, which may have resulted from a shared razor.⁷ A second case was documented of transmission of the HIV from an HIV-infected child to an HIVseronegative child. Although the mode of transmission is unknown, it is believed to be through unrecognized exposure to blood. While the virus may be present in a variety of body fluids, only blood poses any degree of risk of transmission in athletic settings. Tears, sweat, urine, sputum, vomitus, saliva and respiratory droplets have not been implicated in infection transmission.

There are currently estimated to be over one million carriers of hepatitis B virus (HBV) in the United States. Hepatitis B is spread through the same routes as HIV (sexual contact, parenteral blood exposure, and perinatally) but is more readily transmitted than HIV. Explanations for this difference may include the fact that HBV is far more concentrated in blood, with a milliliter of blood containing upward of 100 million infectious doses of the virus,² whereas HIV is generally found in concentrations of only a few hundred to a few thousand particles per milliliter of blood.¹²

TRANSMISSION OF HIV AND OTHER BLOOD-BORNE PATHOGENS THROUGH SPORTS

HIV At present there are no epidemiologic studies assessing the transmission of HIV or other blood-borne pathogens during athletic activity. One alleged case of HIV transmission was reported in 1990 between soccer players in Italy.² However, this case lacked sufficient documentation to be considered a transmission during athletic activity.³ This absence of documented cases of transmission during athletic activity is significant in view of the known prevalence of HIV infection. The risk of HIV transmission on the field in the National Football League has been conservatively estimated at below one per million games.⁸ The experience gathered from occupational exposure in the health-care setting has shown that the risk of transmission for parenteral exposure is likely influenced by a variety of factors, including the size of the inoculum and the route of entry. The HIV transmission is documented to occur in approximately 1 of 300 needle-stick injuries involving infected blood. However, most cases have been associated with deep (intramuscular) penetrations with hollowbore needles.⁹ Mucocutaneous transmission has been only rarely reported, and each case has involved large quantities of blood, prolonged exposure, and a portal of entry. Prospective analysis of cases of HIV-infected blood contact with mucous membranes or nonintact skin or both has revealed one case of such transmission.¹⁴ These occupational data provide strong presumptive evidence that sports-related transmission of HIV is unlikely. However, despite the negative data, the theoretical chance is not zero for HIV transmission in situations in sports in which significant blood exposures to open wounds could occur. However, the risk is sufficiently small that we are not able to quantify it.

HBV There has been one valid report (based on epidemiologic evidence) of HBV transmission in sports participation. This involved a group of high school-aged Sumo wrestlers in Japan and was reported in 1982.¹⁵ Given the prevalence of chronic carriers of HBV in the general population, it is remarkable that only one well-validated case has been reported in the literature. In the health-care setting the risk of transmission for parenteral exposure is much greater than that of HIV (approximately 3 of 10).⁴ In addition, cases of transmission among household/ institutional contacts who have not been involved in shared needle use or sexual intercourse with other infected partners have been reported only rarely.¹³ Although not certain, the routes of entry may have resulted from unnoticed wound or mucous membrane exposure through shared razors or toothbrushes. The chronic HBV carrier who is e-antigen positive presents the greatest concern for transmission. Again, as in the case of HIV, we are not able to quantify the risk of transmission in sports. However, given the limited data about transmission, it may be presumed that the sports-related transmission risk for HBV (especially in the presence of e-antigen positive persons) is greater than the risk for HIV.

It should be recognized that contact and collision sports have a higher risk of significant blood exposure than do other sports. Athletes competing in such sports need to be aware of the small theoretical risk of blood-borne pathogen transmission in these sports. The infected athlete has special responsibilities in continuing to participate in this form of competition.

Even given these small probabilities of transmission, where preventive actions (which are consistent with basic good hygiene) are practical and simple to implement, such actions should be taken. The greatest risk to the athlete for contracting any bloodborne pathogen infection is through sexual activity and parenteral drug use, not in the sporting arena.

EDUCATION The AMSSM and AOSSM recognize that preventive education remains the most important weapon in the effort to prevent blood-borne pathogen transmission. Sports medicine practitioners should play an important role in educational activities directed at athletes, their families, athletic trainers, other healthcare providers, coaches, officials, and others involved in sports. First and foremost, athletes should

be educated in clear and effective language about the risk of HIV and other blood-borne pathogen transmission through sexual contact. Abstinence or monogamous sex between uninfected partners is the only certain strategy for protection against sexual transmission. In other sexual relationships, the use of condoms with water-based lubricants is recommended. Although the effectiveness of spermicides containing nonoxynol-9 is still being reviewed, these may serve as adjuncts to condoms. Also, the athlete is susceptible to transmission via shared contaminated needles and syringes associated with drug use. This includes the use of ergogenic aids such as anabolic steroids as well as drugs of abuse, such as heroin. These risks should be clearly presented to the athlete as well. Athletes should also avoid sharing personal items such as razors, toothbrushes, and nail clippers.

Education regarding the risk of transmission during athletic competition is also important. The risk of such transmission, while highly improbable, can be minimized further by such common-sense hygienic measures as the prompt application of first aid to bleeding injuries. Athletes should be made aware that it is in their best interest to report significant injuries in a timely manner to the appropriate official, coach, or caregiver. Caregivers should be trained in and adhere to universal precautions.^{5,13}

Physicians involved in sports medicine can also play important roles in general education designed to reduce fear and misconceptions among athletes, their families, and all persons associated with sports concerning blood-borne pathogen transmission.

The athletic setting affords unique opportunities for educational initiatives regarding the transmission and prevention of HIV and other blood-borne pathogens. Physician-athlete interactions such as preparticipation or injury evaluations may be the only interactions that the athlete has with a knowledgeable health professional. Opportunities to incorporate education on disease transmission during these encounters should be sought. Athletic organizations, as well as individual athletes, may also be able to make meaningful contributions to the community's overall education effort.

THE HIV-INFECTED ATHLETE Physicians involved in sports medicine must be knowledgeable in the issues surrounding management of HIV-infected athletes. Given the continuing epidemic of HIV infection worldwide, this disease will be diagnosed in increasing numbers of infected athletes. Although HIV is an extremely serious health problem, it must be recognized that it is a chronic disease, frequently affording the infected person many years of excellent health and productive life during its natural history. During the period of preserved health, the sports medicine practitioner may be involved in the series of complex issues surrounding the advisability of continued exercise and athletic competition. The first priority of the HIV-infected athlete is ensuring that he or she comes under the care of a physician knowledgeable in the management of HIV infection. In addition, the infected athlete should be directed to appropriate counselling services dealing with the psychosocial aspects of this disease. Confidentiality of the patient must be maintained as dictated by medical ethics and legal statutes. The decision to advise continued athletic competition should be individualized involving the athlete, the athlete's personal physician, and the sports medicine practitioner. Variables to be considered in reaching this decision include 1) the athlete's current state of health and the status of HIV infection, 2) the nature and intensity of training, 3) potential contribution of stress from athletic competition, and 4) potential risk of HIV transmission.

There is no evidence that exercise and training of moderate intensity are deleterious to the health of HIV-infected persons. To the contrary, there is growing evidence that such forms of physical activity may be beneficial both psychologically and immunologically, and thus should be encouraged with appropriate monitoring.² When counselling the HIV-infected athlete, sports medicine physicians should remember that severe psychological and physical stress, as can be found in athletic competition, can have a deleterious effect on the functions of the immune system as well as the overall state of mental and physical health and thus should be taken into consideration.

Based on current medical and epidemiologic information, HIV infection alone is insufficient grounds to prohibit athletic competition.

THE HBV-INFECTED ATHLETE In general, acute HBV infection should be viewed just as other viral infections. Decisions regarding ability to play are made according to clinical signs and symptoms such as fever, fatigue, or hepatomegaly. There is no evidence that intense, highly competitive training is a problem for the asymptomatic HBV carrier (acute or chronic).

HIV TESTING-Mandatory Testing The AMSSM and AOSSM believe that mandatory testing or widespread blood-borne pathogen screening is not justified for medical reasons as a condition for athletic participation or competition. Such testing would not effectively prevent infection, promote health, or be easily implemented.

Any consideration of a blood-borne pathogen testing program in the athletic setting must address the practical, medical, scientific, legal, and ethical problems that such a program poses. First, the issue of who should be tested may be unclear. Testing at one level (the professional level) cannot be done without consideration of testing at other levels (e.g., collegiate, high school, community sports programs). In addition, the frequency of testing would have to be determined. An athlete with a negative test at the beginning of the season would not be guaranteed of having a negative test 3 months later. Massive screening in low-prevalence populations leads to a higher rate of false-positive tests, resulting in undue duress, counselling, and complex follow-up evaluation. Most importantly, any testing program, no matter how widespread, is not justifiable precisely because it fails to further diminish the "too low to qualify risk of blood-borne pathogen transmission in sports. Other factors, including overwhelming costs, as well as legal and ethical considerations of mandatory testing for populations that may include minors, further suggest that there is no rational basis for supporting blood-borne pathogen tests in sports.

Voluntary Testing Voluntary testing should be suggested to athletes as well as nonathletes who may have been exposed to blood-borne pathogen transmission. Included would be those who have had 1) multiple sexual partners; 2) injections of nonprescription drugs, such as drugs of abuse or ergogenic aids; 3) sexual contacts with at-risk persons; 4) sexually transmitted diseases, including HBV; and 5) blood transfusions before 1985.

Pre- and posttest counselling is extremely important for anyone undergoing HIV testing and should be arranged by the ordering physician. When obtaining informed consent and reviewing the positive and negative results, state guidelines must be followed. (Guidelines may vary from state to state.)

Personal knowledge of blood-borne serum status combined with pre- and posttest counselling can be a helpful adjunct to preventive education. Knowledge of one's infection is helpful for a variety of reasons. These reasons include availability of therapy for asymptomatic patients in the case of HIV, modification of behavior that can prevent transmission of blood-borne pathogens to others, and appropriate counselling regarding exercise and sports participation. The AMSSM and AOSSM urge that applicable public health measures for handling an epidemic be followed with the HIV-infected persons.

SPECIFIC MANAGEMENT AND PREVENTIVE MEASURES FOR SPORTS EVENTS-Any risk of blood-borne pathogen transmission in sports is exceedingly small. However, all involved with sports will help further reduce the risk of transmission by following guidelines that are both practical and simple to implement. A major component to these guidelines is common sense and adherence to basic principles of hygiene.

Universal precautions, developed by the Centers for Disease Control and Prevention, should be learned and followed by all health-care providers.

Because the risk of blood-borne pathogen transmission in sports is confined to contact with blood, body fluids, and other fluids containing blood, preventive measures should be focused on the recognition and immediate treatment of bleeding.

Many athletic contests and practices, especially at the community or scholastic level, occur without medical personnel in attendance. The above guidelines apply not only to physicians, athletic trainers, and physical therapists involved in the coverage of sports, but also to coaches and officials who may be involved as the primary caregivers in many circumstances. All personnel involved with sports should be trained in basic first aid and infection control, including the preventive measures outlined here.

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**WEST VIRGINIA SECONDARY SCHOOL ACTIVITIES COMMISSION
2875 STAUNTON TURNPIKE, PARKERSBURG, WV 26104**

BODY FLUID HANDLING PROCEDURES

PURPOSE

The West Virginia Secondary School Activities Commission has adopted this policy in an effort to minimize the possibility of transmission of any infectious disease during a high school athletic practice or contest. The policy primarily addresses blood-borne pathogens such as Hepatitis B virus and the Human Immunodeficiency Virus (HIV). However, it also discusses common-sense precautions against the spread of less serious contagions such as the Influenza virus and the Common Cold virus. Much of this policy has been written with contact sports such as football, wrestling, and basketball in mind. However, it is applicable for all sports.

BLOOD-BORNE PATHOGENS

Blood-Borne pathogens such as Hepatitis B and HIV are serious infectious diseases which are present in blood as well as other bodily fluids; such as semen, vaginal secretions and breast milk. While there are a number of other such blood-borne diseases, Hepatitis B and HIV are the most commonly known.

Hepatitis B is a virus which results in a dangerous inflammation of the liver. Its victims suffer long-term consequences and reoccurrences, and the disease can be deadly if not treated. HIV is the virus that causes Acquired Immunodeficiency Syndrome (AIDS), which weakens the immune system, thus making a person susceptible to infections their immune systems would normally fight off.

The precise risk of HIV transmission during exposure of open wounds or mucous membranes such as the eyes, ears, nose, and mouth to contaminated blood is not known. However, evidence would suggest it is extremely low. In fact, the possibility of contracting HIV in this manner is much less than the possibility of contracting Hepatitis B and other blood-borne viral infections.

Therefore, student athletes, coaches, and officials must understand that while it is possible for HIV to be transmitted by blood from one individual to another through an open wound or a mucous membrane, the probability is very low. However, since the chance of this occurring is not zero, the appropriate precautions should be taken to ensure no transmission can occur.

PRECAUTIONS AGAINST TRANSMISSION OF BLOOD-BORNE PATHOGENS

The proper handling of body fluid spills should be a concern of teachers, coaches, officials, and student athletes. All concerned individuals must be aware that any time there is blood and/or other body fluids present, there is the possibility of an infectious disease being present. However this possibility can be nearly eliminated if the following precautions are observed.

General Procedures:

- 1) Wear latex or vinyl disposable exam gloves before making contact with body fluids during care, treatment, and cleaning procedures.
- 2) Discard gloves after each use.
- 3) Wash hands after handling any body fluids, whether or not gloves are worn.
- 4) Discard disposal items in plastic lined containers with lids. Close bags and discard daily.
- 5) Do not reuse plastic bags.
- 6) Use disposable items to handle body fluids whenever possible.
- 7) Use paper towels to pick up and discard any solid waste materials such as vomitus and feces.

Procedures for Activities:

- 1) All athletes must cover any open wound.
- 2) Student athletes should treat and cover their own wounds whenever possible.
- 3) When administering first aid, disposable rubber gloves should be worn. A different pair of gloves should be worn for each treatment administered.
- 4) If an individual gets someone else's blood on his/her skin, the area should be washed with soap and water and wipe the area with disinfectant, such as isopropyl alcohol.
- 5) If a student athlete begins to bleed during activity, play must be stopped, the student athlete who is injured removed, and any potentially contaminated surfaces cleaned using a disinfectant. The surface should be wiped with clean water.
- 6) Any student athlete that is removed must have the wound covered and the bleeding stopped, prior to returning to contest.
- 7) Any individual who has treated a wound or cleaned a contaminated surface should wash his/her hands with soap and warm water.
- 8) A student athlete should take a shower using a liberal amount of soap and warm water following the contest.
- 9) Towels, which are used by athletes, coaches, or officials should not be used to clean off any potentially contaminated surfaces.
- 10) All soiled linens such as towels and uniforms should be washed in hot water and in a detergent containing bleach, if possible.
- 11) If a coach or an official gets blood on them they should first wash the area with warm water and soap, and then wipe the area with a disinfectant such as isopropyl alcohol.
- 12) All coaches, athletes, and officials should practice good hygiene. Towels, cups, and water bottles should not be shared.
- 13) Keeping locker rooms and other areas well ventilated and clean can also help in preventing other air-borne contagions from being transmitted.

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Policy Adopted by the Board of Directors

WAYS TO PREVENT SKIN INFECTIONS: A PLAYER'S GUIDE



Cover Cuts & Sores!

With a bandaid or wrap before you play



Wash Up!

With soap and hot water



Don't Share!

Towels, clothes or personal items



Show & Tell!

**Show cuts & sores
to your coach**



Be Prepared!

**Learn first aid for cuts
& sores**



MEASURES FOR PREVENTING STAPHYLOCOCCAL SKIN INFECTIONS AMONG SPORTS PARTICIPANTS

Centers for Disease Control Recommendations for School Athletic Teams



Cover all wounds. If a wound cannot be covered adequately, consider excluding players with potentially infectious skin lesions from practice or competitions until the lesions are healed or can be covered adequately.



Encourage good hygiene, including showering and washing with soap after all practices and competitions.



Ensure availability of adequate soap and hot water



Discourage sharing of towels and personal items (e.g., clothing or equipment).



Establish routine cleaning schedules for shared equipment.



Train athletes and coaches in first aid for wounds and recognition of wounds that are potentially infected.



Encourage athletes to report skin lesions to coaches and encourage coaches to assess athletes regularly for skin lesions.



West Virginia Department of Health and Human Resources

Information for the Public -

Methicillin Resistant *Staphylococcus aureus* (MRSA)

What is *Staphylococcus aureus*?

Staphylococcus aureus, or Staph@ is a bacteria that lives on the skin or in the nose of healthy people. Occasionally, staph can cause infections of the skin, bloodstream, lungs, bones, joints, heart, or almost any part of the body.

What is methicillin resistant *Staphylococcus aureus* (MRSA)?

MRSA (pronounced 'mursa') is a type of staph that has become resistant to some common antibiotics. This means that an infection with MRSA is more difficult to treat.

Where are staph and MRSA found?

Staph and MRSA may be found on the skin or in the nose. About 30 to 50% of people may carry the staph bacteria on their skin without getting ill.

How common is MRSA?

In many communities, including some in West Virginia, MRSA is now the most common cause of skin infections due to 'staph.' According to some studies, 1 to 10% of people now carry MRSA in their nose or on their skin.

Who is most at risk for staph infections?

While anyone can get an infection with staph, certain persons are more at risk. These people include diabetics, people on dialysis, persons who use injection drugs, people who have recently had surgery, and persons with chronic diseases such as cancer. Staph infections are also more common in persons who have a tube going into their body (such as a urinary catheter or intravenous (IV) catheter).

MRSA infections are more likely in persons who have recently received antibiotics or recently been in a hospital or nursing home. In the last few years, MRSA infections have also been identified in persons outside of hospitals. Cases of MRSA disease in the community are associated with recent antibiotic use, sharing contaminated items, active skin disease, and living in crowded settings. Outbreaks have occurred on sports teams, in jails or military units, camps and even hospital wards. Community associated MRSA infections are usually skin infections; however, severe illness can also occur.

Are staph and MRSA infections treatable?

Yes, staph infections are treatable. Skin infections can usually be treated with oral antibiotics. MRSA infections are usually treatable, but they may be more difficult to treat. The doctor will have to get a laboratory test to tell the difference between MRSA and staph.

How are staph and MRSA spread?

Staph and MRSA can spread among people by close physical contact. Spread may also occur by touching objects, such as towels, sheets, clothes, work-out areas and sports equipment contaminated by the skin of a person with MRSA or staph.

How can I prevent staph or MRSA infections?

- Keep your hands clean by washing thoroughly with soap and water. Alcohol-based hand cleansers also help.
- Keep cuts and wounds clean and covered with a dressing until healed. Avoid contact with other peoples= wounds.
- Avoid sharing towels, clothing, sports equipment, deodorant, cosmetics and other personal items.
- Only take antibiotics if you really need them. Antibiotics do not work for a cold, the flu or other viral infections. When a doctor prescribes antibiotics, take them as directed.



Heat Stress and Athletic Participation Information

Early fall football, cross country, soccer and field hockey practices are conducted in very hot and humid weather in many parts of the United States. Due to the equipment and uniform needed in football, most of the heat problems have been associated with football. From 1995 through the 2002 football season there have been 15 high school heat stroke deaths in football. This is not acceptable. There are no excuses for heatstroke deaths, if the proper precautions are taken. During hot weather conditions the athlete is subject to the following:

HEAT CRAMPS – Painful cramps involving abdominal muscles and extremities caused by intense, prolonged exercise in the heat and depletion of salt and water due to profuse sweating.

HEAT SYNCOPE – Weakness fatigue and fainting due to loss of salt and water in sweat and exercise in the heat. Predisposes to heat stroke.

HEAT EXHAUSTION (WATER DEPLETION) – Excessive weight loss, reduced sweating, elevated skin and core body temperature, excessive thirst, weakness, headache and sometimes unconsciousness.

HEAT EXHAUSTION (SALT DEPLETION) – Exhaustion, nausea, vomiting, muscle cramps, and dizziness due to profuse sweating and inadequate replacement of body salts.

HEAT STROKE – An acute medical emergency related to thermoregulatory failure. Associated with nausea, seizures, disorientation, and possible unconsciousness or coma. It may occur suddenly without being preceded by any other clinical signs. The individual is usually unconscious with a high body temperature and a hot dry skin (heat stroke victims, contrary to popular belief, may sweat profusely).

It is believed that the above-mentioned heat stress problems can be controlled provided certain precautions are taken. According to the American Academy of Pediatrics Committee on Sports Medicine, heat related illnesses are all preventable. (Sports Medicine: Health Care for Young Athletes, American Academy of Pediatrics, July 2000). The following practices and precautions are recommended:

1. Each athlete should have a physical examination with a medical history when first entering a program and an annual health history update. History of previous heat illness and type of training activities before organized practice begins should be included. State High School Associations recommendations should be followed.
2. It is clear that top physical performance can only be achieved by an athlete who is in top physical condition. Lack of physical fitness impairs the performance of an athlete who participates in high

temperatures. Coaches should know the **PHYSICAL CONDITION** of their athletes and set practice schedules accordingly.

3. Along with physical conditioning the factor of acclimatization to heat is important. Acclimatization is the process of becoming adjusted to heat and it is essential to provide for **GRADUAL ACCLIMATIZATION TO HOT WEATHER**. It is necessary for an athlete to exercise in the heat if he/she is to become acclimatized to it. It is suggested that a graduated physical conditioning program be used and that 80% acclimatization can be expected to occur after the first 7-10 days. Final stages of acclimatization to heat are marked by increased sweating and reduced salt concentration in the sweat.
4. The old idea that water should be withheld from athletes during workouts has **NO SCIENTIFIC FOUNDATION**. The most important safeguard to the health of the athlete is the replacement of water. Water must be on the field and readily available to the athletes at all times. It is recommended that a minimum 10-minute water break be scheduled for every twenty minutes of heavy exercise in the heat. Athletes should rest in a shaded area during the break. **WATER SHOULD BE AVAILABLE IN UNLIMITED QUANTITIES**.
5. Check and be sure athletes are drinking the water. Replacement by thirst alone is inadequate. Test the air prior to practice or game using a wet bulb, globe, temperature index (WBGT index) which is based on the combined effects of air temperature, relative humidity, radiant heat and air movement. The following precautions are recommended when using the WBGT Index: (ACSM's Guidelines for the Team Physician, 1991)
 - Below 65 – Unlimited activity
 - 65-73– Moderate risk
 - 73-82 – High risk
 - 82 plus – Very high risk
6. An alternative method for assessing heat and humidity is the weather guide or heat index. Refer to the Sports Medicine Handbook section on heat related illness published by the NFHS. Figure I is an example of a heat-humidity index table that defines low, moderate, high, and extreme risk zones.
7. Cooling by evaporation is proportional to the area of the skin exposed. In extremely hot and humid weather reduce the amount of clothing covering the body as much as possible. **NEVER USE RUBBERIZED CLOTHING**.
8. Athletes should weigh each day before and after practice and **WEIGHT CHARTS CHECKED**. Generally a 3 percent weight loss through sweating is safe and over a 3 percent weight loss is in the danger zone. Over a 3 percent weight loss the athlete should not be allowed to practice in hot and humid conditions. Observe the athletes closely under all conditions. Do not allow athletes to practice until they have adequately replaced their weight.
9. Observe athletes carefully for signs of trouble, particularly athletes who lose significant weight and the eager athlete who constantly competes at his/her capacity. Some trouble signs are nausea, incoherence, fatigue, weakness, vomiting, cramps, weak rapid pulse, visual disturbance and unsteadiness.

10. Teams that encounter hot weather during the season through travel or following an unseasonably cool period, should be physically fit but will not be environmentally fit. Coaches in this situation should follow the above recommendations and substitute more frequently during games.
11. Know what to do in case of an emergency and have your emergency plans written with copies to all your staff. Be familiar with immediate first aid practice and prearranged procedures for obtaining medical care, including ambulance service.
12. Warn your athletes about the use of any products that contain ephedra. Ephedra has been associated with two heat stroke deaths in athletes. Ephedra speeds metabolism and increases body heat, constricts the blood vessels in the skin preventing the body from cooling itself, and by making the user feel more energetic it keeps him/her exercising longer when they should stop. Do not use ephedra or ephedra products.

HEAT STROKE – THIS IS A MEDICAL EMERGENCY – DELAY COULD BE FATAL. Immediately cool body while waiting for transfer to a hospital. Remove clothing and immerse torso in ice/cold water. Immersion therapy has the best cooling rates. A plastic baby pool can be available at all practices and games, and can always be ready for immersion procedures. If not available apply ice packs in armpits, groin and neck areas. Continue cooling efforts until EMS arrives.

HEAT EXHAUSTION – OBTAIN MEDICAL CARE AT ONCE. Cool body as you would for heat stroke while waiting for transfer to hospital. Give fluids if athlete is able to swallow and is conscious.

SUMMARY – The main problem associated with exercising in the hot weather is water loss through sweating. Water loss is best replaced by allowing the athlete unrestricted access to water. Water breaks two or three times every hour are better than one break an hour. Probably the best method is to have water available at all times and to allow the athlete to drink water whenever he/she needs it. Never restrict the amount of water an athlete drinks, and be sure the athletes are drinking the water. The small amount of salt lost in sweat is adequately replaced by salting food at meals. Talk to your medical personnel concerning emergency treatment plans.



RECOMMENDATIONS FOR HYDRATION TO PREVENT HEAT ILLNESS

TYPES OF SPORTS DRINKS

Fluid Replacers

- Examples: Water, Gatorade, 10K, Quickkick, Max
- These drinks are absorbed as quickly as water and typically are used for activities lasting less than 2 hours.

Carbohydrate loaders

- Examples: Gatorlode, Exceed High, Carboplex
- These drinks replace more muscle glycogen to enhance greater endurance.
- They should be used after ultra-endurance events to increase muscle glycogen resynthesis after exercise.

Nutrition Supplements

- Examples: Gatorpro, Exceed Sports, Ultra Energy
- These supplements are fortified with vitamins and minerals and they help athletes maintain a balanced diet.
- They can be used as a meal replacement supplement for athletes who wish to skip a high fat meal, or as extra calories for athletes who wish to gain weight.

WHAT NOT TO DRINK

- Drinks with Carbohydrate (CHO) concentrations of greater than eight percent should be avoided.
- Fruit juices, CHO gels, sodas, and sports drinks that have a CHO greater than six to eight percent are not recommended during exercise as sole beverages.
- Beverages containing caffeine, alcohol, and carbonation are not to be used because of the high risk of dehydration associated with excess urine production, or decreased voluntary fluid intake.

HYDRATION TIPS AND FLUID GUIDELINES

- Drink according to a schedule based on individual fluid needs.
- Drink before, during and after practices and games.
- Drink 17-20 ounces of water or sports drinks with six to eight percent CHO, two to three hours before exercise.
- Drink another 7-10 ounces of water or sport drink 10 to 20 minutes before exercise.
- Drink early — By the time you're thirsty, you're already dehydrated.
- In general, every 10-20 minutes drink at least 7-10 ounces of water or sports drink to maintain hydration, and remember to drink beyond your thirst.
- Drink fluids based on the amount of sweat and urine loss.
- Within two hours, drink enough to replace any weight loss from exercise.
- Drink approximately 20-24 ounces of sports drink per pound of weight loss.
- Dehydration usually occurs with a weight loss of two percent of body weight or more.

WHAT TO DRINK DURING EXERCISE

- If exercise lasts more than 45-50 minutes or is intense, a sports drink should be provided during the session.
- The carbohydrate concentration in the ideal fluid replacement solution should be in the range of six to eight percent CHO.
- During events when a high rate of fluid intake is necessary to sustain hydration, sports drinks with less than seven percent CHO should be used to optimize fluid delivery. These sports drinks have a faster gastric emptying rate and thus aid in hydration.
- Sports drinks with a CHO content of 10 percent have a slow gastric emptying rate and contribute to dehydration and should be avoided during exercise.
- Fluids with salt (sodium chloride) are beneficial to increasing thirst and voluntary fluid intake as well as offsetting the amount of fluid lost with sweat.
- Salt should never be added to drinks, and salt tablets should be avoided.
- Cool beverages at temperatures between 50 to 59 degrees Fahrenheit are recommended for best results with fluid replacement.

DEHYDRATION, ITS EFFECTS ON PERFORMANCE, AND ITS RELATIONSHIP TO HEAT ILLNESS

- Dehydration can affect an athlete's performance in less than an hour of exercise — sooner if the athlete begins the session dehydrated.
- Dehydration of just one to two percent of body weight (only 1.5-3 lb.. for a 150-pound athlete) can negatively influence performance.
- Dehydration of greater than three percent of body weight increases an athlete's risk of heat illness (heat cramps, heat exhaustion, heat stroke).
- High-body-fat athletes can have a harder time with exercise and can become dehydrated faster than lower-body-fat athletes working out under the same environmental conditions.
- Poor acclimatization/fitness levels can greatly contribute to an athlete's dehydration problems.
- Medications/fevers greatly affect an athlete's dehydration problems.
- Environmental temperature and humidity both contribute to dehydration and heat illnesses.
- Clothing, such as dark, bulky, or rubber protective equipment can drastically increase the chance of heat illness and dehydration.
- Wet bulb temperature measurements should be taken 10-15 minutes before practice, and the results should be used with a heat index to determine if practices or contests should be started, modified or stopped.
- Even dry climates can have high humidity if sprinkler systems are scheduled to run before early morning practices start. This collection of water does not evaporate until environmental temperatures increase and dew points lower. Dry climate areas should take wet bulb and temperature readings 10 to 15 minutes before practice or contests.
- A Heat Index chart should be followed to determine if practice/contests should be held.
- A Heat Index chart should come from a reputable source like the National Oceanic and Atmospheric Association.
- A relative humidity of 35 percent and a temperature of 95 degrees Fahrenheit are likely to cause heat illness, with heat stroke likely.
- A relative humidity of 70 percent and a temperature of 95 degrees Fahrenheit are very likely to cause heat illness, with heat stroke very likely.

Journal of Athletic Training: 35(2): 212-224; NFHS Handbook Heat Related Illness, Sandra Shultz Phd, ATC, CSCS, Steven Zinder MS, ATC



Playing Hot: Heat Illness in Sport Kit-NTSC

By [ASEP](#)



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Product Description

Heat affects even the best athletes, causing dehydration, poor performance, and possible illness. With *Playing Hot*, you will learn how to detect the signs of heat illness, what to do when heat illness occurs, and most importantly, how to prevent it.

Prepare your athletes for training and performing in the heat. *Playing Hot* has information on

- choosing the right clothing,
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- learning how much salt is needed to replace lost electrolytes, and
- taking breaks at appropriate intervals during practice.

Accompanying the video is a CD-ROM. You can use this instructional package to conduct an educational program on heat illness prevention with your team. Included on the CD ROM are handouts that can be duplicated and given to athletes.

When your players turn to you for advice on exercising and competing in hot and humid weather, turn to *Playing Hot* for your complete source for answers.