

# MONITORING STUDENT-ATHLETE HEALTH

Each sports season parents/guardians are asked to complete information on an Emergency Card. This card is given to coaches and kept in the medical kit for the sport. It is important that coaches are provided up to date information about each student athlete to ensure coaches can respond to the various health needs of their athletes, particularly those athletes with common health issues such as allergies, asthma, and diabetes.

## **Emergency Contact Information and Athletic Physical Procedure**

1. Parents/Guardians will complete and submit the emergency card prior to the athlete being eligible for practice. A current athletic physical (within two years) must also be on file at the school.
2. Emergency cards will be given to coaches to be kept with the medical kit.
3. Athletic physicals will be filed in the athletic office.
4. A roster of eligible athletes will be given to the school nurse near the start of the season.
  - a. The nurse will review the list and notify the athletic director of any students with health issues.
  - b. The athletic director will then direct the head coach of each sport to contact the nurse to get detailed information about these students.
  - c. Notations will be added to emergency cards as necessary to ensure all coaches in the program are aware of the health concerns.

**Reporting of Injury:** When an athlete is injured to the point that they cannot fully participate the following day, coaches are expected to complete an Injury Reporting Form within 24 hours. The following procedure outlines the reporting process.

1. The completed Injury Reporting Form will be accurate with as much detail as possible
2. The form will be given to the athletic secretary or athletic director within 24 hours.
3. For injuries not involving concussion copies will be made for each of the following people
  - a. Athletic secretary
  - b. Athletic director
  - c. Head coach
  - d. Athletic trainer (high school)
  - e. Physical education staff
  - f. Other pertinent staff who need to know about injuries
4. For injuries involving concussion copies will be made for each of the following people
  - a. Athletic secretary
  - b. Athletic director
  - c. Head coach
  - d. Athletic trainer (high school)
  - e. Physical education staff if the athlete is enrolled in class
  - f. School counselor
  - g. Classroom teachers
  - h. Other pertinent staff who need to know about injuries

\*When a head injury occurs the athlete may require cognitive rest and a “return to learn” protocol before resuming academic work. The athlete must be kept from physical activity until cleared to do so.

**Return to Participation from Injury:** To return to physical participation after an injury that required care from a doctor, the student must provide a note from the doctor clearing them to participate.

1. A copy of the clearance note must be provided to the athletic secretary.
2. Copies of the clearance not will be provided to the following people
  - a. Athletic secretary
  - b. Athletic director
  - c. Head coach
  - d. Athletic trainer (high school)
  - e. Physical education staff if the athlete is enrolled in class
3. If the injury is a concussion, classroom teachers must be notified of the athlete's recovery progress.
4. To return to full participation, the athlete must be able to demonstrate their full ability to move without risk or aggravating the injury or creating safety concerns. This may mean that even if the doctor cleared the athlete to return they may not be fully able to participate. At the high school level, the athletic trainer will be involved in that decision making process.

# SAFEGUARDING THE HEALTH OF THE ATHLETE

Participation in high school athletics is a privilege involving both responsibilities and rights. The athlete's responsibilities are to play fair, give his/her best, to keep in training, and to conduct himself/herself with credit to his/her sport and his/her school. In turn, he/she has the right to optimal protection against injury as this may be assured through good conditioning and technical instruction, proper regulation and conditions of play, and adequate health supervision.

Periodic evaluation of each of these factors will help to assure a safe and healthful experience for players. The checklist below contains the kind of questions to be answered in such an appraisal.

**Proper conditioning** helps prevent injuries by hardening the body and increasing resistance to fatigue.

- 1) Are prospective players given directions and activities for pre-season conditioning?
- 2) Is there a minimum of two weeks of practice before the first game or contest?
- 3) Is each player required to warm-up thoroughly prior to participation?
- 4) Are substitutions made without hesitation when players evidence disability?

**Careful coaching** leads to skillful performance, which lowers the incidence of injuries.

- 1) Is emphasis given to safety in teaching techniques and elements of play?
- 2) Are injuries carefully analyzed to determine causes and to suggest preventive programs?
- 3) Are tactics discouraged that may increase the hazards and thus the incidence of injuries?
- 4) Are practice periods carefully planned and of responsible duration?

**Good officiating** promotes enjoyment of the game as well as the protection of players.

- 1) Are players as well as coaches thoroughly schooled in the rules of the game?
- 2) Are rules and regulations strictly enforced in practice periods as well as in games?
- 3) Are officials employed who are qualified both emotionally and technically for their responsibilities?

**Right equipment** and facilities serve a unique purpose in protection of players.

- 1) Is the best protective equipment provided for contact sports?
- 2) Is careful attention given to proper fitting and adjustment of equipment?
- 3) Is equipment properly maintained and worn and outdated items discarded?
- 4) Are proper areas for play provided and carefully maintained?

**Adequate medical care** is a necessity in the prevention and control of athletic injuries.

- 1) Is there a thorough pre-season health history and medical exam?
- 2) Is a trainer present at contest and readily available during practice sessions?
- 3) Does the trainer make the decision as to whether an athlete should return to play following injury during games?
- 4) Is authority from a physician required before an athlete can return to practice after being out of play due to injury?
- 5) Is the care given an athlete by coach or trainer limited to first aid and medically prescribed services?

## PREVENTING INJURIES

Perhaps the first step in preventing injuries is knowing which activities are most apt to result in physical education and athletic accidents. Dr. Stanley Pechar, New York University School of Education, in a recent survey of physical education (New York high schools), found that over a ten-month period there were 1,408 accidents reported and that:

- 1) The greatest number of accidents occurred in September and October.
- 2) The activities, which produced the most injuries, were (a) Football, b) Basketball, (c) Wrestling, (d) Soccer, and (e) Track and Field.
- 3) The highest number of accidents occurred during practice for interscholastic competition.
- 4) The second highest number of accidents occurred during actual interscholastic athletic competition.
- 5) Among strictly physical education activities, apparatus and tumbling caused the most injuries.
- 6) Sprains were the most frequent types of injury, followed by fracture and wounds.
- 7) The leg and foot were the most frequently injured part of the body, followed by the arm, hand and head.

Dr. Pechar's study revealed that students with inadequate skills were more liable to injury. Other important factors were fatigue and inadequate conditioning.

The second step in preventing injuries is to make sure that all your athletes have had recent physical examinations. Then adopt these rules as your personal code for preventing injuries:

- 1) Never send in an injured player back into a game unless you clear it with your school or team physician.
- 2) Never let a boy or girl attempt a stunt or any other activity unless he/she has been properly taught to execute the maneuver.
- 3) Teach proper skills and make sure your students and players have mastered techniques before you require them to use these techniques in games or class situations.
- 4) Remove overly fatigued players from all athletic contests.
- 5) Introduce activities to develop physical fitness.

The third step in preventing injuries is to make sure that all your equipment is in good condition. A most frequent cause of injuries is defective equipment. We suggest that you make a periodic inspection of your facilities. Here's what to look for:

- 1) Defective equipment.
- 2) Lockers not secure to the floor.
- 3) Play areas not equipped with mats and other protective equipment.
- 4) Defective and obsolete athletic equipment.
- 5) Bleachers and grandstands too flimsy to withstand the weight of the crowd.

After each inspection, notify your building athletic coordinator who in turn will notify the appropriate parties to eliminate the situation.

## CONCUSSION INFORMATION

A concussion is a brain injury and all brain injuries are serious. They are caused by a bump, blow, or jolt to the head, or by a blow to another part of the body with the force transmitted to the head. They can range from mild to severe and can disrupt the way the brain normally works. Even though most concussions are mild, **all concussions are potentially serious and may result in complications including prolonged brain damage and death if not recognized and managed properly.** In other words, even a “ding” or a bump on the head can be serious. You can’t see a concussion and most sports concussions occur without loss of consciousness. Signs and symptoms of concussion may show up right after the injury or can take hours or days to fully appear. If your child reports any symptoms of concussion, or if you notice the symptoms or signs of concussion yourself, seek medical attention right away.

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| <b>Symptoms may include one or more of the following:</b>  |  |
| <ul style="list-style-type: none"><li>• Headaches</li><li>• “Pressure in head”</li><li>• Nausea or vomiting</li><li>• Neck pain</li><li>• Balance problems or dizziness</li><li>• Blurred, double, or fuzzy vision</li><li>• Sensitivity to light or noise</li><li>• Feeling sluggish or slowed down</li><li>• Feeling foggy or groggy</li><li>• Drowsiness</li><li>• Change in sleep patterns</li></ul> | <ul style="list-style-type: none"><li>• Amnesia</li><li>• “Don’t feel right”</li><li>• Fatigue or low energy</li><li>• Sadness</li><li>• Nervousness or anxiety</li><li>• Irritability</li><li>• More emotional</li><li>• Confusion</li><li>• Concentration or memory problems (forgetting game plays)</li><li>• Repeating the same question/comment</li></ul> |






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| <b>Signs observed by teammates, parents and coaches include:</b>  |
| <ul style="list-style-type: none"><li>• Appears dazed</li><li>• Vacant facial expression</li><li>• Confused about assignment</li><li>• Forgets plays</li><li>• Is unsure of game, score, or opponent</li><li>• Moves clumsily or displays incoordination</li><li>• Answers questions slowly</li><li>• Slurred speech</li><li>• Shows behavior or personality changes</li><li>• Can’t recall events prior to hit</li><li>• Can’t recall events after hit</li><li>• Seizures or convulsions</li><li>• Any change in typical behavior or personality</li><li>• Loses consciousness</li></ul> |

**What can happen if my child keeps on playing with a concussion or returns to soon?** Athletes with the signs and symptoms of concussion should be removed from play immediately. Continuing to play with the signs and symptoms of a concussion leaves the young athlete especially vulnerable to greater injury. There is an increased risk of significant damage from a concussion for a period of time after that concussion occurs, particularly if the athlete suffers another concussion before completely recovering from the first one. This can lead to prolonged recovery, or even to severe brain swelling (second impact syndrome) with devastating and even fatal consequences. It is well known that adolescent or teenage athlete will often under report symptoms of injuries. And concussions are no different. As a result, education of administrators, coaches, parents and students is the key for student-athlete's safety.

**If you think your child has suffered a concussion:** Any athlete even suspected of suffering a concussion should be removed from the game or practice immediately. No athlete may return to activity after an apparent head injury or concussion, regardless of how mild it seems or how quickly symptoms clear, without medical clearance. Close observation of the athlete should continue for several hours. The new "Zackery Lystedt Law" in Washington now requires the consistent and uniform implementation of long and well-established return to play concussion guidelines that have been recommended for several years:

1. A youth athlete who is suspected of sustaining a concussion or head injury in a practice or game shall be removed from competition at that time.
2. A youth athlete may not return to play until the athlete is evaluated by a licensed health care provider trained in the evaluation and management of concussion and received written clearance to return to play from that health care provider.
3. Inform your child's coach if you think that your child may have a concussion. Remember it's better to miss one game than miss the whole season. And when in doubt, the athlete sits out.
4. Follow the guidelines to return to play. It may take more than five days to ensure the athlete is symptom free.

For current and up-to-date information on concussions you can go to:

<http://www.cdc.gov/ConcussionInYouthSports/>

# RETURNING TO PLAY AFTER A CONCUSSION

**How long will my child have symptoms?** Every child reacts differently to injury especially when it comes to the brain. There is no good answer to how long they will have symptoms. Watching TV, playing video games, using the computer and even school work can sometimes prolong the symptoms and should be avoided until they have been properly evaluated by your Licensed Athletic Trainer or a Physician. If you have concerns about your child and school do not hesitate to contact their teachers, counselors and administration.

- Zurich Consensus Statement, 2009

**My child is feeling better, when can they return to activity?** Now that your child has returned to full time school work and is not suffering any symptoms from their concussion we can start the return to play progression. These guidelines are the result of the latest international medical conference on concussions in sport that was held in Zurich in 2008. There are many grading scales and return to play recommendations, but this is the most current and up-to-date information available. Every child and concussion is different and unique and will need to follow their own return to play protocol. These guidelines are a minimum standard that should be followed. The longer your child suffered symptoms the more time there should be between each step. In accordance with RCW 4.24.660 all return to play decision will be made by a licensed health care provider that is trained in the evaluation and management of concussions and not the coach or parent. Your schools' Licensed Athletic Trainer or Physician will be able to help with the return to play decision and progression.

## Steps to Return to Play after a concussion

**Athletes should not be returned to play the same day of injury. There should be approximately 24 hours (or longer) for each stage and the athlete should return to stage 1 if symptoms recur.**

- Zurich Consensus Statement, 2009

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| Step 1. No activity, complete rest. Once asymptomatic, proceed to step 2   | Step 4. Non-contact training drills.  |
| Step 2. Light aerobic exercise such as walking or stationary bike, elliptical, no resistance training.                                     | Step 5. Full contact- If seen by a physician you must have a signed note by the physician to be cleared for full practice |
| Step 3. Sport specific exercise (e.g., skating in hockey, running in soccer), progressive addition of resistance training at steps 3 or 4. | Step 6. If all steps have been completed symptom free, they are cleared to play in the next contest.                      |

With this stepwise progression, the athlete should continue to proceed to the next level if asymptomatic at the current level. If any post-concussion symptoms occur, the patient should drop back to the previous asymptomatic level and try to progress again after being symptom free for at least 24 hours.

- Zurich Consensus Statement, 2009

**For further information on return to play you can look at the following websites:**

<http://www.cdc.gov/ConcussionInYouthSports/>  
[http://bjsm.bmj.com/cgi/content/full/43/Suppl\\_1/i76](http://bjsm.bmj.com/cgi/content/full/43/Suppl_1/i76)

# **SUDDEN CARDIAC ARREST INFORMATION SHEET FOR STUDENT-ATHLETES, COACHES AND PARENTS/GUARDIANS**

## **SSB 5083 ~ SCA Awareness Act**

**What is sudden cardiac arrest?** Sudden Cardiac Arrest (SCA) is the sudden onset of an abnormal and lethal heart rhythm, causing the heart to stop beating and the individual to collapse. SCA is the leading cause of death in the U.S. afflicting over 300,000 individuals per year. SCA is also the leading cause of sudden death in young athletes during sports

**What causes sudden cardiac arrest?** SCA in young athletes is usually caused by a structural or electrical disorder of the heart. Many of these conditions are inherited (genetic) and can develop as an adolescent or young adult. SCA is more likely during exercise or physical activity, placing student-athletes with undiagnosed heart conditions at greater risk. SCA also can occur from a direct blow to the chest by a firm projectile (baseball, softball, lacrosse ball, or hockey puck) or by chest contact from another player (called “commotio cordis”).

While a heart condition may have no warning signs, some young athletes may have symptoms but neglect to tell an adult. If any of the following symptoms are present, a cardiac evaluation by a physician is recommended:

- Passing out during exercise
- Chest pain with exercise
- Excessive shortness of breath with exercise
- Palpitations (heart racing for no reason)
- Unexplained seizures
- A family member with early onset heart disease or sudden death from a heart condition before the age of 40

**How to prevent and treat sudden cardiac arrest?** Some heart conditions at risk for SCA can be detected by a thorough heart screening evaluation. However, all schools and teams should be prepared to respond to a cardiac emergency. Young athletes who suffer SCA are collapsed and unresponsive and may appear to have brief seizure-like activity or abnormal breathing (gasping). SCA can be effectively treated by immediate recognition, prompt CPR, and quick access to a defibrillator (AED). AEDs are safe, portable devices that read and analyze the heart rhythm and provide an electric shock (if necessary) to restore a normal heart rhythm.

**Remember, to save a life: recognize SCA, call 9-1-1, begin CPR,  
and use an AED as soon as possible!**



# **EXERTIONAL HEAT STROKE PREVENTION**

By National Federation of High Schools, Korey Stringer Institute on August 31, 2015

As high schools' fall seasons kick into high gear across the country, summer weather has not quite given way to cool fall temperatures. Heat stroke is still a major concern for student-athletes participating in outdoor sports. It is also the single-most preventable risk.

It is imperative for coaches and trainers understand and recognize the causes and signs of heat exhaustion. Below, the Korey Stringer Institute lists its five pillars of heat stroke prevention.

## **Hydration**

- Maintaining appropriate levels of hydration prior to, during, and post exercise will assist in attenuating large increases in core body temperature during intense exercise in the heat.
- To decrease the risk of exertional heat stroke, athletes are encouraged to minimize fluid losses during exercise. Fluid needs are individualistic depending on an athlete's sweat rate and a specific rehydration plan should be in place for every athlete.

## **Body Cooling**

- Body cooling can be an effective means of attenuating the rise in core temperature and can be done pre-exercise, during exercise, and post-exercise.
- There are a number of cooling modalities that can be effective in assisting to keep the body cool during exercise in the heat and are applicable to most sports settings (equipment laden sports, sports with minimal or no rest time during activity, etc.).
- For the equipment-laden athlete/laborer/soldier that may be at great risk of exertional heat stroke when exercising in the heat, a specific plan for utilizing cooling during rest breaks is imperative.

## **Work to Rest Ratios**

- Having appropriate work-to-rest ratios (the amount of time spent involved in exercise versus the amount of time spent in recovery) should be modified as environmental conditions become extreme.
- Environmental extremes should be measured using wet bulb globe temperature (WBGT). WBGT takes into account ambient temperature, relative humidity and the radiation from the sun to give an accurate measure of the heat stress that the athlete will be experiencing during exercise in the heat.
- Modifications of work-to-rest ratios in extreme environmental conditions include increasing the number of rest breaks, the duration of rest breaks, and having unlimited access to hydration.

## **Acclimatization**

- Having athletes go through a heat acclimatization protocol at the start of exercise in the heat is one of the best ways to help in preventing exertional heatstroke.
- Heat Acclimatization is a series of physiological adaptations the body uses to tolerate exercise in the heat and occurs over a period of 10-14 days.
- To have the full effects of the adaptations that heat acclimatization allows, it is imperative that athletes maintain an appropriate level of hydration.

## **Education**

- Athletes, coaches, parents, athletic trainers, and other medical professionals should all be educated on the proper preventative strategies to prevent exertional heat stroke. Proper education will minimize the risk and incidence of exertional heatstroke.
- Having proper education and knowledge of the signs and symptoms are also imperative to ensure appropriate treatment in the event of an athlete suffering from exertional heatstroke.

- If medical care is present and exertional heat stroke is suspected - cool first, and then transport second to ensure appropriate treatment.
- If no medical care is available and exertional heat stroke is suspected, immediately activate EMS (911) and begin cooling the athlete. For cooling, immerse the athlete in whole body cold-water immersion, which is the gold standard for cooling the exercising athlete.

## SIGNS AND SYMPTOMS OF HEAT-RELATED ILLNESS

If an athlete exhibits signs and symptoms of heat-related illness, respond with first aid immediately.

| HEAT EXHAUSTION   |  |
|---|--|
| Signs and Symptoms  | Response   |
| <ul style="list-style-type: none"> <li>• Heavy sweating</li> <li>• Weakness</li> <li>• Cold, pale, and clammy skin</li> <li>• Fast, weak pulse</li> <li>• Nausea or vomiting</li> <li>• Fainting</li> </ul> | <ul style="list-style-type: none"> <li>• Move to a cooler location.</li> <li>• Lie down and loosen your clothing.</li> <li>• Apply cool, wet cloths to as much of your body as possible.</li> <li>• Sip water.</li> <li>• If you have vomited and it continues, seek medical attention immediately.</li> </ul> |

| HEAT STROKE   |   |
|---|---|
| Signs and Symptoms  | Response  |
| <ul style="list-style-type: none"> <li>• High body temperature (above 103°F)*</li> <li>• Hot, red, dry or moist skin</li> <li>• Rapid and strong pulse</li> <li>• Possible unconsciousness</li> </ul> | <ul style="list-style-type: none"> <li>• Call 911 immediately — <b>this is a medical emergency.</b></li> <li>• Move the person to a cooler environment.</li> <li>• Reduce the person's body temperature with cool cloths or even a bath.</li> <li>• Do <b>NOT</b> give fluids.</li> </ul> |

# **RECOGNITION, PREVENTION & MANAGEMENT OF ASTHMA IN ATHLETICS**

Asthma is commonly seen in athletes in all levels of competition. For a majority of people who have chronic asthma, exercise is a trigger.

Certified athletic trainers (ATCs), as well as other allied health care professionals, are in a unique position to help coaches, parents and athletes, recognize, prevent and manage asthma. The National Athletic Trainers' Association (NATA) has issued its first ever position statement on Management of Asthma in Athletics, which will appear in its entirety in the September issue of the *Journal of Athletic Training*. NATA offers the following recommendations for ATCs and other health care professionals to follow:

## **I. Be aware of the major asthma signs and symptoms:**

- Coughing
- Wheezing
- Tightness in the chest (or chest pain in children)
- Shortness of breath (dyspnea)
- Breathing difficulty at night
- Breathing difficulty upon awakening in the morning
- Breathing difficulty when exposed to certain allergens or irritants
- Exercise-induced symptoms such as coughing or wheezing
- An athlete who is well conditioned but does not seem to be able to perform at a level comparable with other athletes who do not have asthma
- Family history of asthma
- Personal history of atopy (where the reaction or allergy can be found in other areas of the body, e.g. ingesting something and then breaking out in a rash) including atopic dermatitis/eczema or hay fever (allergic rhinitis)

## **II. Provide guidelines for referral so athletes with asthma and/or those suspected of having it, can receive a thorough evaluation. Athletic trainers and other health care professionals should:**

- Devise an asthma action plan for managing and referring athletes who may experience significant or life threatening attacks, or breathing difficulties, into their existing emergency action plans.
- Have pulmonary function measuring devices, such as peak expiratory flow meters (PFMs), at all athletic venues, and be familiar with how to use them.
- Encourage well-controlled asthmatics to engage in exercise to strengthen muscles, improve respiratory health and enhance endurance and overall well being.
- Refer athletes with atypical symptoms; symptoms that occur despite proper therapy; or other complications that can exacerbate asthma (e.g. sinusitis, nasal polyps, severe rhinitis, gastroesophageal reflux disease [GERD] or vocal cord dysfunction), to a physician with expertise in sports medicine. Such doctors include allergists, ears, nose and throat physicians, cardiologists and pulmonologists trained in providing care for athletes.

III. Describe management plans to prevent and control asthma attacks when they occur. ATCs and coaches should:

- Consider providing alternative practice sites for athletes with asthma. Indoor practice facilities that offer good ventilation and air conditioning should be taken into account for at least part of the practice.
- Schedule practices during times at which pollen counts are lowest (e.g. in the evening during the peak of ragweed pollen season).
- Encourage players with asthma to have follow-up examinations at regular intervals with their primary care physician or specialist. These evaluations should be scheduled at least every six to 12 months.

IV. Educate ATCs and athletes about pharmacological and non-pharmacological therapies and techniques to help control asthma:

- Athletes with exercise-induced asthma (EIA) may benefit from use of short- and long-acting b<sub>2</sub>-agonists. These agents can be used for prophylaxis during practice and game participation.
- When used to prevent EIA, a short-acting b<sub>2</sub>-agonist, such as albuterol, should be inhaled 10 to 15 minutes prior to exercise.
- The excessive need for short-acting b<sub>2</sub>-agonists therapy during practice or an athletic event should cause concern. A physician should evaluate the athlete before returning to participation.
- Long-acting b<sub>2</sub>-agonists should, in general, only be used for asthma prophylaxis and control. Usually, the long-acting agents are combined with an inhaled steroid. Athletes with past allergic reactions or intolerance to aspirin or non-steroidal anti-inflammatory drugs (NSAIDs) should be identified and provided with alternative medicines, such as acetaminophen.

# NCAA GUIDELINE - Lightning Safety

July 1997 • Revised June 2001

Lightning is the most consistent and significant weather hazard that may affect intercollegiate athletics. Within the United States, the National Severe Storms Laboratory (NSSL) estimates that 100 fatalities and 400-500 injuries requiring medical treatment occur from lightning strikes every year. While the probability of being struck by lightning is extremely low, the odds are significantly greater when a storm is in the area and the proper safety precautions are not followed.

Prevention and education are the keys to lightning safety. Education begins with background information on lightning. The references associated with this guideline are an appropriate resource. Prevention should begin long before any intercollegiate athletics event or practice. The following steps are recommended by the NCAA and NSSL to mitigate the lightning hazard:

1. Designate a chain of command as to who monitors threatening weather and who makes the decision to remove a team or individuals from an athletics site or event. An emergency plan should include planned instructions for participants as well as spectators.
2. Obtain a weather report each day before a practice or event. Be aware of potential thunderstorms that may form during scheduled intercollegiate athletics events or practices.
3. Be aware of National Weather Service-issued (NWS) thunderstorm “watches” and “warnings” as well as the signs of thunderstorms developing nearby. A “watch” means conditions are favorable for severe weather to develop in an area; a “warning” means that severe weather has been reported in an area and for everyone to take proper precautions.
4. Know where the closest “safe structure or location” is to the field or playing area, and know how long it takes to get to that safe structure or location. Safe structure or location is defined as:
  - a. Any building normally occupied or frequently used by people, e.g., a building with plumbing and/or electrical wiring that acts to electrically ground the structure. Avoid using shower facilities for safe shelter and do not use the showers or plumbing facilities during a thunderstorm.
  - b. In the absence of a sturdy, frequently inhabited building, any vehicle with a hard metal roof (not a convertible or golf cart) and rolled-up windows can provide a measure of safety. A vehicle is certainly better than remaining outdoors. It is not the rubber tires that make a vehicle a safe shelter, but the hard metal roof which dissipates the lightning strike around the vehicle. **DO NOT TOUCH THE SIDES OF THE VEHICLE!**
5. Be aware of how close lightning is occurring. The flash-to-bang method is the easiest and most convenient way to estimate how far away lightning is occurring. Thunder always accompanies lightning, even though its audible range can be diminished due to background noise in the immediate environment, and its distance from the observer. To use the flash-to-bang method, count the seconds from the time the lightning is sighted to when the clap of thunder is heard. Divide this number by five to obtain how far away (in miles) the lightning is occurring. For example, if an individual counts 15 seconds between seeing the flash and hearing the bang, 15 divided by five equals three; therefore, the lightning flash is approximately three miles away.

Lightning awareness should be increased with the first flash of lightning or the first clap of thunder, no matter how far away. This activity must be treated as a wake-up call to intercollegiate athletics personnel. The most important aspect to monitor is how far away the lightning is occurring, and how fast the storm is approaching, relative to the distance of a safe shelter. Specific lightning-safety guidelines have been developed with the assistance of the National Severe Storms Laboratory (NSSL).

### Lightning-Safety Guidelines:

1. As a minimum, NSSL staff strongly recommends that by the time the monitor obtains a flash-to-bang count of 30 seconds, all individuals should have left the athletics site and reached a safe structure or location. Athletics events may need to be terminated.
2. The existence of blue sky and the absence of rain are not protection from lightning. Lightning can, and does, strike as far as 10 miles away from the rain shaft. It does not have to be raining for lightning to strike.
3. If no safe structure or location is within a reasonable distance, find a thick grove of small trees surrounded by taller trees or a dry ditch. Assume a crouched position on the ground with only the balls of the feet touching the ground, wrap your arms around your knees and lower your head. Minimize contact with the ground, because lightning current often enters a victim through the ground rather than by a direct overhead strike. **MINIMIZE YOUR BODY'S SURFACE AREA, AND MINIMIZE CONTACT WITH THE GROUND! DO NOT LIE FLAT!** If unable to reach safe shelter, stay away from the tallest trees or objects (such as light poles or flag poles), metal objects (such as fences or bleachers), individual trees, standing pools of water, and open fields. Avoid being the highest object in a field. Do not take shelter under a single, tall tree.
4. A person who feels his or her hair stand on end or skin tingle should immediately crouch, as described in item 3.
5. Avoid using the telephone, except in emergency situations. People have been struck by lightning while using a land-line telephone. A cellular phone or a portable remote phone is a safe alternative to land-line phones, if the person and the antenna are located within a safe structure or location, and if all other precautions are followed.
6. When considering resumption of an athletics activity, NSSL staff recommends that everyone should ideally wait at least 30 minutes after the last flash of lightning or sound of thunder before returning to the field or activity.
7. People who have been struck by lightning do not carry an electrical charge. Therefore, cardiopulmonary resuscitation (CPR) is safe for the responder. If possible, an injured person should be moved to a safer location before starting CPR. Lightning-strike victims who show signs of cardiac or respiratory arrest need emergency help quickly. Prompt, aggressive CPR has been highly effective for the survival of victims of lightning strikes. **Note:** Flash-to-bang count, weather watchers, real-time weather forecasts and commercial weather warning devices are all tools that can be used to aid in decision-making regarding stoppage of play, evacuation and return to play.

## MOVING THE INJURED ATHLETE

**Stop** (stop play immediately at the indication of an injury).

**Look** (look for obvious deformity or other deviation from normal).

**Listen** (listen to the athlete's complaint).

**Act** (move the athlete only after serious injury is ruled out).

The First Aid Chart for Athletic Injuries thus places "action" last among the four final steps of first aid to protect the athlete at the time of injury.

Serious injuries occur in sports as in other activities of life. The advantage of participating in supervised sports is that those injuries can be anticipated and appropriate safeguarding measures taken. First Aid procedures and equipment can be pre-arranged. Student managers, as well as coaches, trainers, and other faculty members connected with sports, should be well grounded in correct first aid procedures, especially proper methods of moving the injured player. Improper or careless methods can increase the severity of the injury and may even cause disability or death.

A physician hopefully is present at athletic contests such as football where the risk of injury is obvious. One of the responsibilities of the attending physician is to supervise the transportation of an injured athlete when this is necessary. However, such a provision is no assurance against problems, because serious injuries can occur: (1) in practice when a physician may not be immediately at hand, and (2) in sports that are not so hazardous as to require the regular attendance of a physician. In such instances it may be necessary to move the injured player in accordance with sound principles, although it would be preferable to do so only on physicians' instruction.

**PRINCIPLE ONE** – Avoid being hurried into moving an athlete who has been hurt. Meriting re-emphasis is the admonition that to protect the athletes at the time of the injury and move him only after serious injury is ruled out. Few injuries in sports require breakneck speed in removal of the players; the game officials will respect the judgment and caution of responsible personnel.

**PRINCIPLE TWO** – Obtain medical supervision before moving an athlete with a suspected neck or spinal injury. An athlete's inability to move or feel an extremity, even if momentary, is sufficient cause for the first aid provider to be determined in his conservatism. Moving a player with such an injury can cause further damage and result in permanent disability, if not death. The game can wait.

**PRINCIPLE THREE** – Have near at hand for ready use at the site of participation: (1) a stretcher, (2) a telephone and (3) safe means of transportation to the nearest hospital. The stretcher may be in conflict with the heroic stoicism an injured player mistakenly wants to display. But with any serious injury, attempting to walk or run off the field may be sufficiently aggravating to delay unnecessarily the effective return of that athlete to competition. In the case of a head injury (concussion), the recumbent position is a wise precaution against aggravation of possible internal bleeding before medical care can be reached. The immediate availability of a vehicle or rapid transit can be a lifesaver. Rapid communication with an assigned physician is frequently necessary.

**PRINCIPLE FOUR** – If the player can be moved, support the injured joint or limb. If in the lower extremity, avoid weight bearing. An assistant of 140 pounds is little help in this regard when helping a limping 220-pound player away from the zone of action. If the upper extremity is involved, giving support against gravity will bring the player to medical care with the least pain and risk.

## **MOVING THE INJURED ATHLETE, Cont'd**

**PRINCIPLE FIVE** – If the player is to be moved, move him away from the proximity of the crowd. Emergency medical stations near, but not at the site of action, will minimize the natural tendencies of the athlete to attempt unauthorized return to play. Equally important, it will give the physician the opportunity to make a quiet, thorough initial evaluation of the severity of the injury.

**PRINCIPLE SIX** – Post conspicuously and have understood by all supervisory personnel, the step-by-step directions for emergency first aid procedures. The physician closest to the school's sports program can help develop the best practical plan for fitting the community's resources to the supervisory coverage of games and practices.