SAFETY

National Athletic Trainers' Association (NATA)

NATA RECOMMENDATIONS FOR LIGHTNING SAFETY

1. Establish a chain of command that identifies who is to make the call to remove individuals from the field

2. Name a designated weather watcher (A person who actively looks for the signs of threatening weather and notifies the chain of command if severe weather becomes dangerous.)

3. Designate a safe shelter for each venue.

4. Have a means of monitoring local weather forecasts and warnings.

5. Use the Flash-to-Bang count to determine when to go to safety. By the time the flash-to-bang count approaches thirty seconds all individuals should be already inside a safe structure.

6. Once activities have been suspended, wait at least thirty minutes following the last sound of thunder or lightning flash prior to resuming an activity or returning outdoors.

7. Avoid being the highest point in an open field, in contact with, or proximity to the highest point, as well as being on the open water. Do not take shelter under or near trees, flagpoles, or light poles.

8. Assume the lightning safe position (crouched on the ground, weight on the balls of the feet together, head lowered, and ears covered) for individuals who feel their hair stand on end, skin tingle, or hear "cracking" noises. Do not lie flat on the ground.

9. Observe the following basic first aid procedures in managing victims of a lightning strike:

    - Survey the scene for safety
    - Activate local EMS.
    - Lightning victims do not "carry a charge" and are safe to touch
    - If necessary, move the victim with care to a safer location
    - Evaluate airway, breathing, and circulation, and begin CPR if necessary
    - Evaluate and treat for hypothermia, shock, fractures and/or burns.

10. All individuals have the right to leave an athletic site in order to seek a safe structure if the person feels in danger or impending lightning activity, without fear or repercussions or penalty from anyone.

11. 30 minute rule.

SAFETY SHELTER:

1. A safe location is any substantial, frequently, inhabited building. The building should have four solid walls (not a dug out), electrical and telephone wiring, as well as plumbing, all of which aid in grounding a structure.

2. The secondary choice for a safer location from the lighting hazard is a fully enclosed vehicle with a metal roof and the windows completely closed. It is important to not touch any part of the metal framework of the vehicle while inside it during ongoing thunderstorms.

3. It is not safe to shower, bathe or talk on landline phones while inside of a safe shelter during thunderstorms (cell phones are ok).

FLASH-TO-BANG:

To use the flash-to-bang method, begin counting when sighting a lighting flash. Counting is stopped when the associated bang (thunder) is heard. Divide this count by five to determine the distance to the lighting flash (in miles). For example, a flash-to-bang count of thirty seconds equates to a distance of six miles. Lighting has struck from as far away as 10 miles from the storm center. **"If you hear it; if you see it, flee it."**

Postpone or suspend activity if a thunderstorm appears imminent before or during an activity or contest, irrespective of whether lighting is seen or thunder heard) until the hazard has passed. Signs of imminent thunderstorm activity are darkening clouds, high winds, and thunder or lighting activity.

HEAT STRESS AND ATHLETIC PARTICIPATION

Fall football & cross country 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. During the 1998 season there were four heat stroke deaths in football. There are no excuses for heatstroke deaths if the proper precautions are taken. During hot weather, 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 sweating.

Heat Syncope – Weakness, fatigue and fainting due to loss of salt and water in sweat and exercise in the heat. Predisposes to heatstroke.

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.

Heatstroke – 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 (heatstroke 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, 1991). The following practices and precautions are recommended:

1. Each athlete must have a physical exam 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 association's recommendations should be followed.

2. It is clear that 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 percent acclimatization can be expected to occur after the first seven to ten 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 of ten minutes be scheduled for a water break every half hour of heavy exercise in the heat. **Water should be available in unlimited quantities.** Check and be sure athletes are drinking the water. Cold water is preferable. Drinking ample water before practice or games has also been found to aid performance in the heat.

5. Salt should be replaced daily. Modest salting of foods after practice or games will accomplish this purpose. Salt tablets are not recommended. **Attention must be directed to replacing water – fluid replacement is essential.**

6. Know both the **temperature and humidity.** The greater the humidity, the more difficult it is for the body to cool itself. Test the air prior to practice or game using a temperature index (WBGT Index) which is based on the combined effects of air temperature, relative humidity, radiant heat and air movement.

7. Cooling by evaporation is proportional to the area of 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 three percent weight loss through sweating is considered safe and over a three percent weight loss is in the danger zone. Over a three 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 unseasonable 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 emergency and have your emergency plans written with copies to all your staff. Be familiar with immediate first aid practices and pre-arrange procedures for obtaining medical care including ambulance service.

Heat Stroke – This is a medical emergency. DELAY COULD BE FATAL. Immediately cool body while waiting for transfer to a hospital. Remove clothing and place ice bags on the neck, in the axilla (armpit), and on the groin area. An increasing number of medical personnel are now using a treatment for heat illness that involves applying either alcohol or cool water to the victim's skin and vigorously fanning the body. The fanning causes evaporation and cooling. (Source—The First Aider – September 1987).

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 per 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.