

HEAT PRECAUTIONS

FORT BEND ISD

(Revised 1/04)

Excessive heat, humidity pose danger to students

Excessive heat and humidity can pose threats to the health of students as they begin a new season's extracurricular activities. It is critically important that physical education teachers, coaches, band and drill team directors and all who supervise physical activity understand the risks to students who exercise in hot, humid conditions. The risk of suffering heat exhaustion or heat stroke significantly increases as temperatures reach 90 degrees (F) with humidity as low as 20 percent.

Therefore, please review the following points as you develop your recess procedures, lesson plans and practice schedules.

- Start slowly, and take your time getting the students "back in shape." Even star athletes often return to school having lost the aerobic capacity they may have had at the close of last season.
- Advise students to wear light-colored, loose-fitting clothes, which allow air to cool the skin.
- Ensure that your students drink fluids even before they feel thirsty. Their awareness of thirst may lag behind their need for fluid. Always urge students to drink water before, during, and after exercise.
- Students can become acclimated to hot-weather exercise, but must be allowed to do so gradually. Students involved in moderate-to-vigorous exercise daily will need 5-to-7 days to adjust to exercising in the heat. Those on more irregular exercise schedules will take longer to adapt.
- If students must exercise outside, they should begin with a 1-to-2 ratio of exercise to rest schedule. For instance, 10 minutes' rest and fluid replacement should follow every five minutes of moderate to vigorous exercise. Likewise, 10 minutes exertion warrants 20 minutes' rest and fluid intake. As students adapt to the heat, gradually increase their exercise time as you decrease break time. 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.
- Water is the best fluid for your body. However, fluids that contain no more than 7 percent sugar (certain sport drinks) also are acceptable.

Watch for these warning signs of heat illness

No two students are exactly alike, which means you must constantly monitor all your students or athletes for signs of heat-related illness. Students may try to ignore the seriousness of heat illness, but coaches and directors must take no chances when symptoms appear. Learn to recognize the warning signs of the most dangerous forms of heat illness, heat exhaustion and heat stroke. Be ready to respond with appropriate care.

Heat Disorder	Symptoms	First Aid
Sunburn	Redness and pain. In severe cases, swelling of skin, blisters, fever, and headaches.	Ointment for mild cases if blisters appear. If breaking occurs, apply dry sterile dressing. A physician should see serious, extensive cases.
Heat Cramps	Painful spasms usually in muscles of legs and abdomen possible. Heavy sweating.	Firm pressure on cramping muscles, or gentle massage to relieve spasm. Give sips of water. If nausea occurs, discontinue use.
Heat Exhaustion	Heavy sweating, weakness, skin cold, pale and clammy. Pulse thready. Normal temperature possible. Fainting and vomiting.	Get victim out of sun. Lie down and loosen clothing. Apply cool wet cloths. Fan or move victim to air-conditioned room. Sips of water. If nausea occurs, discontinue use. If vomiting continues, seek immediate medical attention.
Heat Stroke (or sunstroke)	High body temperature (106°F, or higher). Hot dry skin. Rapid and strong pulse. Possible unconsciousness.°	Heat stroke is a severe medical emergency. Summon medical assistance or get the victim to a hospital immediately. Delay can be fatal. Move the victim to a cooler environment. Reduce body temperature with cold bath or sponging. Use extreme caution. Remove clothing, use fans and air conditioners. If temperature rises again, repeat process. Do not give fluids.

Important Points to consider:

1. Heat Index:

Know both the temperature and humidity. The greater the humidity, the more difficult it is for the body to cool itself.

Heat Index Chart: (numbers within the chart are the “feels like” temperature)

		Relative Humidity (%)													
Temperature	F	40	45	50	55	60	65	70	75	80	85	90	95	100	
	110	136													
	108	130	137												
	106	124	130	137											
	104	119	124	130	137										
	102	114	119	124	130	137									
	100	109	114	118	124	129	136								
	98	105	109	113	117	123	128	134							
	96	101	104	108	112	116	121	128	132						
	94	97	100	102	106	110	114	119	124	129	135				
	92	94	96	99	101	105	108	112	116	128	125	131			
	90	91	93	95	97	100	103	106	109	113	117	122	127	132	

Heat Index/Heat Disorders:

Heat Index/Heat Disorders	
Heat Index	Possible heat disorders for people in higher risks groups
130°F or higher	Heatstroke/sunstroke highly likely with continued exposure.
105°-130°F	Sunstroke, heat cramps or heat exhaustion likely , and heatstroke possible with prolonged exposure and/or physical activity.
90°-105°F	Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
80°-90°F	Fatigue possible with prolonged exposure and/or physical activity.

- 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.
- The most important safeguard to the health of the student is the replacement of water (Hydration). Water must be on the field and readily available to the students 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 students are drinking the water. Cold water is preferable. Drinking ample water before practice or games has been shown to aid performance in the heat. Hydration is a shared responsibility. Students, parents, and staff all must cooperate to effectively insure hydration, since water intake needs to occur before, during, and after exercise.

Hydration Tips and Fluid Guidelines (from Texas UIL Football Manual):

- 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.
4. 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.
 5. Observe students carefully for signs of trouble, particularly those 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.
 6. 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 prearranged procedures for obtaining medical care, including ambulance service.
 7. The **best defense is prevention**. Here are some **prevention tips**:
 - Students should drink more fluids regardless of their activity level. Don't wait until you're thirsty to drink.

- Discourage students from drinking liquids with caffeine, or large amounts of sugar- these actually cause you to lose more body fluid. Also, avoid very cold drinks, because they can cause stomach cramps.
8. 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.**
 9. Additional risk factors to consider. In addition to air temperature, humidity and dehydration, the following factors may also put students at increased risk:
 - a. Nutritional supplements. Supplements may contain stimulants, like ephedrine or caffeine. These substances can dehydrate the body and/or increase metabolism and heat production. They are of particular concern in people with underlying medical conditions such as hypertension, asthma, and thyroid dysfunction.
 - b. Medication/drugs. Certain medications and drugs have similar effects. These substances may be ingested through over the counter or prescription medications or with food. Examples include antihistamines, decongestants, certain asthma medications, Ritalin, diuretics and alcohol.
 - c. Medical conditions. Examples include illness with fever, gastro-intestinal illness or sickle cell trait.
 - d. Acclimatization/fitness level. Lack of acclimatization to the heat or poor conditioning.
 - e. Clothing. Dark clothing absorbs heat. Protective equipment limits heat dissipation.(This section on "Additional risk factors to consider" was taken from NCAA Guideline 2c: "Prevention of Heat Illness".) 0

For more information, visit the following websites:

www.uil.utexas.edu/ath/manuals/foot/fb.html

<http://www.fema.gov/pdf/rrr/talkdiz/heat.pdf>

http://www1.ncaa.org/membership/ed_outreach/health-safety/sports_med_education/index

<http://www.nata.org/fpfiles/links/heatillness.htm>