

Heat Plan

Excessive Heat Event Planning Guide



SAN ANTONIO'S PUBLIC HEALTH TEAM

Twelfth Edition – 2011, this edition supersedes all previous editions
Health Alert: Important information to review and implement.



CITY OF SAN ANTONIO, BEXAR COUNTY AND SURROUNDING COMMUNITIES

Providing relief from the heat and an adequate supply of liquids (especially water) are the most critical interventions needed to assist persons in our community in surviving a heat wave. With the 1998 prolonged heat spell and the outlook for more high temperatures, community leaders realized it was necessary to evaluate the local situation and share information. During numerous meetings, local leaders identified the need for a heat relief plan. A community meeting on August 5, 1998, led by the Bexar County Judge, resulted in the development of the Community-Based Heat Relief Plan (The Plan). It explains how you can prevent, recognize, and cope with heat-related health problems, as well as provides a list of local agencies which will furnish heat-related assistance. The Plan is used as a basis for a more comprehensive "Extreme Weather Plan" and supplements the County and City's emergency management plans.

The Plan was developed by representatives of the private and public sectors including the City of San Antonio, Greater Bexar County Community of Cities, Alamo Area Council of Governments (AACOG), United Way of San Antonio and Bexar County, Texas Department of Health -- Region 8, Christian Senior Services, Greater San Antonio Community of Churches, the American Red Cross, the Salvation Army, Voluntary Organizations Active in Disasters, Greater San Antonio Hospital Council, Bexar County Medical Society, University Health System, and the University of Texas Health Science Center at San Antonio. The Plan is published and distributed annually by the Metro Health.

The Plan was developed to be utilized as a tool for informing public officials, outreach workers, community members, and social service providers on the availability of services provided during hot weather. We encourage you to share this Plan with anyone who might utilize this information.

Users of this Plan are encouraged to direct questions to the appropriate identified agencies. Should issues not be addressed or questions remain unanswered, please contact:

Public Health Emergency Coordinator
Metro Health
(210) 207-8752 (w);
(210) 207-2173 (fax)

Or

Bexar County Department of Community Resources
(210) 335-3705 (w)
(210) 335-6788 (fax)

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INTRODUCTION

Excessive heat events (EHEs) are, and will continue to be, a fact of life in the United States. These events are a public health threat because they often increase the number of daily deaths (mortality) and other nonfatal adverse health outcomes (morbidity) in affected populations (*United States Environmental Protection Agency, 2008*). Hundreds of people die every year from heat-related illnesses. A severe heat wave hit the United States in the summer of 1980. Heat illnesses and injuries killed approximately 1,700 people that summer. Texas alone had 78 people die.

In the summer of 1998, the National Weather Service declared numerous communities in North and South Texas to be under an extreme heat advisory. Throughout Texas, high humidity coupled with temperatures in the high 90's and above caused significant elevations in the heat indices. In addition to the extremely hot and sultry afternoons, the ambient overnight temperatures rarely dropped below 80 degrees during the summer of 1998. These conditions produced extreme heat waves and pushed the heat index as far as the Extreme Danger Category, an index of 130 or greater. According to the Associated Press, 124 Texans died during the heat wave, three of which were from Bexar County. History has shown that these conditions are not uncommon for South Central Texas.

Summer heat waves bring unusually high temperatures that may last for days or weeks. Fortunately, the body has effective mechanisms to cool itself. Under some conditions, these mechanisms are not enough. In such cases, a person's body temperature rises rapidly. Very high body temperatures can cause severe damage to the brain and other vital organs. Maintaining a consistent internal body temperature, generally 98.6 degrees Fahrenheit is essential to normal physical functioning (*American Medical Association on Scientific Affairs, 1997*).

Several factors affect the body's ability to cool itself during extremely hot weather. When humidity is high, perspiration does not evaporate as quickly, preventing adequate release of heat from the body. Other factors that affect the body's cooling mechanism include age, obesity, fever, dehydration, heart disease, poor circulation, sunburn, caffeine, as well as drug and alcohol use. Those at highest risk for death or injury from heat are: the elderly, socially isolated individuals (homebound, homeless), the physically disabled, those with chronic medical conditions, infants, those taking certain medications, and individuals that do not have access to air conditioning for at least a few hours of the day.

The San Antonio Metropolitan Health District (Metro Health) urges people to be especially mindful of summertime activity, whether playing or working. To prevent heat-related illness, activities must be balanced with measures that aid the body's cooling mechanisms. The very young and the very old are the most

vulnerable. For discharge purposes, hospitals should be mindful of the heat conditions at a patient's residence. Friends and neighbors of the elderly are urged to check with them frequently during this time. If no air conditioning is available, as much ventilation as possible is recommended. During hot weather, fans should be utilized to increase maximum efficiency of air movement within homes. Individuals who are most at risk are advised to seek air conditioning, if possible. Also, people should drink non-alcoholic and decaffeinated beverages as often as possible.

POLICY

It is the responsibility of Bexar County and the City of San Antonio to provide emergency management for the citizens in their jurisdiction. Emergency management all-hazard plans have been developed, exercised, and put into action during numerous events, such as extreme weather conditions, flooding, hurricanes, hazardous material spills, and mass casualty events.

These plans provide for timely response efforts with accompanying utilization of a variety of resources throughout the City of San Antonio and Bexar County. Response efforts are accomplished through careful coordination with relief agencies, private partners and the Emergency Management Offices of the City of San Antonio and Bexar County.

It should be noted that many efforts are undertaken each year in this community to provide relief to people during extreme weather conditions. These efforts are usually conducted during cold weather conditions and events that are not declared emergencies. Any future emergency relief plans must not interfere or impede with the close links that have already been established by the emergency management offices with relief agencies such as the American Red Cross, independent school districts, and the Salvation Army.

POLICY IMPLEMENTATION

The Director of the San Antonio Metropolitan Health District, in conjunction with the emergency management offices of the City of San Antonio and Bexar County and the National Weather Service, will activate this community-based Heat Plan and implement an Excessive Heat Event notification and response program, which increase public awareness and lessen adverse health impacts according to the levels described below.

Level I: Based upon the National Weather Service forecasts of temperatures greater than 100 degrees or when the heat index is expected to be within the 90-105 degree range for two successive days, the San Antonio Metropolitan Health District notifies the community of a **Heat Outlook**.

Level II: When the National Weather Service issues a Heat Advisory with a daytime heat index value of 105 degrees or greater and the minimum ambient air temperature is not expected to fall below 80 degrees F° for two consecutive days, the San Antonio Metropolitan Health District will issue an **Heat Advisory**.

Level III: When the National Weather Service issues an Excessive Heat Warning the San Antonio Metropolitan Health District will issue an **Excessive Heat Warning**. This level is attained when the heat index reaches 115 degrees or greater.

The **heat index** (see chart, page 33) is a calculation based on expected heat discomfort as a result of a combination of dry ambient air temperatures and relative humidity. The following table establishes categories for the four heat index ranges. Each category has an associated danger.

Apparent temperature heat stress index

Category	Heat Index	Dangers
Caution	80-90	Fatiguing more than usual
Extreme Caution	91-105	Heat cramps, exhaustion possible
Danger	106-130	Heat exhaustion likely
Extreme Danger	≥130	Heat stroke imminent

LEVEL I

LEVEL I

Based upon the National Weather Service forecasts of temperatures greater than 100 degrees or when the heat index is expected to be within the 90-105 degree range for two successive days, the San Antonio Metropolitan Health District notifies the community of a **Heat Outlook**.

1. INDIVIDUAL PROTECTIVE MEASURES AND RESPONSE:

- ◆ Your best defense against heat-related injury is prevention.
 - a) Air-conditioning is the number one protective factor against heat-related illness and death. During conditions of extreme heat, spend time in locations with air-conditioning such as shopping malls, public libraries, or public health sponsored heat-relief shelters in your area.
 - b) Stay adequately hydrated regardless of your activity level.
 - c) Wear lightweight, light-colored, loose-fitting clothing and appropriate sunscreen.
 - d) Reduce alcohol and caffeine intake.
 - e) Avoid heavy and/or hot foods—they add heat to your body
 - f) Limit outdoor activities during the heat of the day. (Exposure to full sunshine can increase Heat Index Values by up to 15 degrees Fahrenheit
 - g) Monitor those at high risk such as the elderly, infants, young children, and people who are physically ill or have chronic disease such as heart disease or high blood pressure.
 - h) Do not leave children or pets unattended in a closed, parked vehicle.

- ◆ **Acclimatization** is also important for each individual. The primary benefit of heat acclimatization is improved tolerance of exercise in the heat, evident as a reduction of the incidence or severity of symptoms of heat illness, and increased work output concurrent with reduced cardiovascular, thermal, and metabolic strain (*Encyclopedia of Sports Medicine and Science, March 1998*).

- ◆ Heat exhaustion, a milder form of heat-related illness, can be the result of not being properly acclimated to extreme heat; failure to take preventive measures; or the severity of heat. Symptoms may include the following:

- Heavy sweating
- Paleness
- Muscle cramps
- Tiredness
- Weakness
- Dizziness
- Headache
- Nausea or vomiting
- Fainting

The skin may be cool and moist. The pulse rate will be fast and weak, and breathing will be fast and shallow. If heat exhaustion is untreated, it may progress to heat stroke. Take the following action and seek medical attention if symptoms worsen or last longer than one hour.

- Drink cool, nonalcoholic beverages.
 - Rest.
 - Take a cool shower, bath, or sponge bath.
 - Seek an air-conditioned environment.
- ◆ Heat stroke is the most serious heat-related illness and can lead to death or serious disability. Warning signs vary but may include the following:
- An extremely high body temperature (above 103°F)
 - Red, hot, and dry skin (no sweating)
 - Rapid, strong pulse
 - Throbbing headache
 - Dizziness
 - Nausea
 - Confusion
 - Unconsciousness

Heat stroke is a serious life-threatening emergency. Take the following action **immediately**:

- Have someone call for immediate medical assistance while you begin cooling the victim.
- Get the victim to a shady area.
- Cool the victim rapidly, using whatever methods you can. For example:
 - immerse the victim in a tub of cool water;
 - place the person in a cool shower;
 - spray the victim with cool water from a garden hose;
 - sponge the person with cool water;
 - if the humidity is low, wrap the victim in a cool, wet sheet and fan him or her vigorously.

- Monitor body temperature and continue cooling efforts until the body temperature drops to 101-102°F.
- If emergency medical personnel are delayed, call the hospital emergency room for further instructions.

2. HEAT INJURY PREVENTION SYSTEM ACTIVATED

- a) Metro Health disseminates information (using the public service announcements) on heat injury prevention.
- b) Information is available through Metro Health coordinated with the Department of Community Initiatives, and the City of San Antonio for news releases, interviews, and public messages through the City's Government Access Channel.
- c) Metro Health monitors temperature (F°), relative humidity (%), and dew point on a daily basis (excluding weekends), and determines the heat index based on this information.
- d) Metro Health notifies participating social service agencies, Bexar County and the City of San Antonio that Level I of the Heat Plan has been activated (Appendix A).
 - 1. Develops a transmission network for the distribution of information.
 - 2. Education Service Center Region 20 notified to advise area school districts to take precautions and to refer school districts to both the Heat Stress and Athletic Participation Information located in the UIL coaches' manuals (Appendix E) and guidelines for outdoor strenuous activities (Appendix F).

3. REPORTING SYSTEMS

- a) Hospitals begin passive surveillance, reporting heat illnesses to Metro Health electronically.
- b) Metro Health is contacted by area hospitals, the Bexar County Medical Examiner's Office, and EMS with information on heat-related illnesses and or deaths.
- c) Metro Health monitors area medical treatment facilities as warranted by hot weather conditions maintaining surveillance on the well-being of the community.
- d) The City of San Antonio Emergency Management Coordinator is notified and updated on the effect of excessive heat events on the community.

LEVEL II

Level II: When the National Weather Service issues a Heat Advisory with a daytime heat index values of 105 degrees or greater, and the minimum ambient air temperature is not expected to fall below 80 degrees F° for two consecutive days, then the San Antonio Metropolitan Health District will issue a Heat Advisory.

1. ALL ACTIONS IN LEVEL I CONTINUE

2. ADDITIONAL INFORMATION IS DISTRIBUTED

- Provide heat injury prevention and other relief assistance information to the public.

DONATION OF MATERIAL

The City's Department of Community Initiatives requests donations of new, 18-inch box fans for seniors who are 60 years of age or older for the Project COOL program. Anyone wishing to donate a fan can drop the item(s) off at any San Antonio Fire Department station (except the Airport location). Anyone wishing to make a monetary donation can send or deliver a check to:

“Project Cool c/o Catholic Charities”

202 W. French Place, San Antonio, TX 78212

Seniors in need of a fan can call **2-1-1** the Texas/United Way Help Line at any time to request a box fan by phone.

LEVEL III

LEVEL III

When the National Weather Service issues an Excessive Heat Warning the San Antonio Metropolitan Health District will issue an Excessive Heat Warning when the Heat Index is greater than 115 degrees.

During Level III, the following actions should be considered for implementation:

ALL ACTIONS IN LEVEL I AND LEVEL II CONTINUE

- Public building and cooperating private buildings with air conditioning (shopping malls, movie theaters) will be designated as public cooling facilities by the COSA Emergency Management Coordinator. Specific locations to be released via the media.
- Directly contact and evaluate the environmental conditions and health status of known-high risk individuals and locations likely to have concentrations of these individuals.
- Increase outreach efforts to the homeless and establish provisions for their removal to cooling facilities.

Shelters and Daytime Cooling Facilities

◆ Overnight Locations:

1. Haven for Hope – 212-8069

◆ Daytime Locations: Cooling Facilities available for relief from the heat.

1. Local Malls and Shopping Centers
2. Public Libraries
3. Senior Citizen Nutrition Sites
4. Learning and Leadership Development Centers
5. Other Public Facilities: gyms, swimming pools

DEACTIVATION

DEACTIVATION OF LEVELS

The San Antonio Metropolitan Health District will deactivate Levels II & III by electronic message to the City of San Antonio/Bexar County Emergency Management Office, community partners, and media outlets.

In each of the activation notices, a disclaimer has been included that states “Readers are encouraged to contact the National Weather Service (NWS) for specific weather conditions at 830-606-3617 or visit the NWS website at <http://www.weather.gov/sanantonio>”

During the hot summer days, a **Heat Outlook (Level I) will not be deactivated.**

COORDINATION WITH EXISTING EMERGENCY MANAGEMENT PLANS

This document supplements existing emergency management annexes for the City of San Antonio and Bexar County, and will be coordinated with the Texas Department of State Health Service’s regional office.

APPENDIX A

For Immediate Release
Contact Heat Plan Representative: 207-2145

News Release

City of San Antonio Advises of Heat Outlook - Level I

San Antonio Metropolitan Health District is notifying the community of a Heat Outlook. Based upon the National Weather Service forecasts of temperatures greater than 100 degrees or a heat index within the 90-105 degree range for two successive days, the City of San Antonio advises the community of a Heat Outlook – Level 1.

During the warmer months, excessive heat temperatures are a fact of life in South Texas. Excessive heat conditions can result in direct and adverse health consequences, particularly to the very young and to the elderly. The following precautions should be followed during this time to reduce heat-related injuries.

- Drink non-alcoholic and caffeine-free liquids, such as water and juices.
- Be aware of people at high risk, such as the elderly, infants and children up to 4 year of age, someone who is overweight, or someone on medication.
- Rest frequently in a shady area.
- Do not leave infants, children or pets unattended in a parked car (even if the windows are down or the air conditioning is on) or other hot environment.
- Ask your physician whether you are at particular risk because of a medication you are taking.
- Remember to leave fresh water in the bowl for pets kept outdoors and provide as much shade as possible where the pets are kept. Change the water frequently to prevent mosquitoes from breeding.

A deactivation notice is only sent to the Emergency Management Offices and to the media. The San Antonio Metropolitan Health District encourages readers to contact the National Weather Service for the most current weather conditions at 830-606-3617 or visit <http://www.weather.gov/sanantonio> for current hourly weather. During the hot summer days, the Heat **Outlook (Level I) will not be deactivated.**

For Further Assistance:

If you have an emergency, call:	911
For utility assistance, call CPS:	210-353-2222
For fan assistance, call the United Way Help Line:	211
For non-emergency information, call:	311 (Hours 7 a.m. – 11 p.m.)

APPENDIX B

For Immediate Release
Contact Heat Representative: 207-2145

News Release

City of San Antonio Advises of Heat Advisory - Level II

San Antonio Metropolitan Health District is notifying the community of a Heat Advisory. When the daytime heat index values are 105 degrees or greater, and the minimum ambient air temperature is not expected to fall below 80 degrees F° for two consecutive days, the City of San Antonio advises the community of a Heat Advisory – Level II.

During the warmer months, excessive heat temperatures are a fact of life in South Texas. Excessive heat conditions can result in direct and adverse health consequences, particularly to the very young and to the elderly.

Residents and visitors are warned that the danger of heat-related injuries and the potential for fatalities increases under a Level II alert. Anyone who does not live in a home with air conditioning or cannot visit one during the severest heat of the day (typically between 2 p.m. – 7 p.m.) is encouraged to visit an air-conditioned facility such as a shopping mall or library, or call one of the community resources below to seek air-conditioned relief.

The following health precautions continue to be recommended under a Level II alert to avoid dehydration, heat-related illnesses or more severe consequences, especially among vulnerable populations such as the elderly and young children.

- Drink non-alcoholic and caffeine-free liquids, such as water and juices.
- Be aware of those at high risk, such as the elderly, infants and children up to 4 years of age or individuals who are overweight. Check on elderly parents, relatives, acquaintances and neighbors as often as possible.
- Do not leave infants, children, the elderly or pets unattended in a parked car (even if the windows are down or the air conditioning is on) or any other hot environment.
- Plan to exercise and do other strenuous activities early or late in the day when it is cooler or utilize air-conditioned facilities.
- Use an umbrella, hat or sunscreen to protect your skin from the sun, and wear loose-fitting and light clothing to help heat escape away from your body. Rest frequently in a shady area.
- Ask your physician whether you are at particular risk because of medication.
- Remember to leave fresh water in the bowl for pets kept outdoors and provide as much shade as possible. Change the water frequently to prevent mosquitoes

from breeding.

- If you feel any symptoms of heat illness such as dizziness, nausea, muscle cramps or headache, immediately stop all activity and move to a cooler area to rest and drink fluids. Medical attention should be sought if symptoms do not improve.

The San Antonio Metropolitan Health District encourages the community to contact the National Weather Service for the most current weather conditions at 830-606-3617 or visit www.weather.gov/sanantonio for current hourly weather. During the hot summer days, the **Heat Outlook (Level I) will not be deactivated.**

For Further Assistance:

If you have an emergency, call:	911
For utility assistance, call CPS:	210-353-2222
For fan assistance, call the United Way Help Line:	211
For non-emergency information, call:	311 (Hours 7 a.m. – 11 p.m.)

APPENDIX C

**For Immediate Release
Contact Heat Representative: 207-2145**

News Release

City of San Antonio Advises of Excessive Heat Warning - Level III

San Antonio Metropolitan Health District is notifying the community of an Excessive Heat Warning. When the daytime heat index values are 115 degrees or greater, the City of San Antonio advises the community to take the necessary precautions to stay safe and cool.

Due to the current dangerous weather conditions, the City of San Antonio, Office of Emergency Management, has coordinated the following services:

- Designated public buildings and specific private buildings with air conditioning as public cooling facilities for individuals who need relief from the heat:
 - Overnight Locations:
 1. Haven for Hope – (210) 212-8069
 - Daytime Locations:
 1. Public Libraries
 2. Senior Citizen Nutrition Sites
 3. Learning and Leadership Development Centers
 4. Other Public Facilities: gyms, swimming pools
 5. Private Facilities: (need to be listed)

Moreover, during this period, the City of San Antonio will continue to evaluate local environmental conditions and reach out to known-high risk individuals, such as the homeless, and offer assistance as needed for their safety.

In addition, residents and visitors are advised to use the following health precautions to avoid dehydration, heat-related illnesses or more severe consequences, especially among vulnerable populations, such as the elderly and young children.

- Drink non-alcoholic and caffeine-free liquids, such as water and juices.
- Be aware of those at high risk, such as the elderly, infants and children up to 4 years of age or individuals who are overweight. Check on elderly parents, relatives, acquaintances and neighbors as often as possible.
- Do not leave infants, children, the elderly or pets unattended in a parked

car (even if the windows are down or the air conditioning is on) or any other hot environment.

- Plan to exercise and do other strenuous activities early or late in the day when it is cooler or utilize air-conditioned facilities.
- Use an umbrella, hat or sunscreen to protect your skin from the sun, and wear loose-fitting and light clothing to help heat escape away from your body. Rest frequently in a shady area.
- Ask your physician whether you are at particular risk because of medication.
- Remember to leave fresh water in the bowl for pets kept outdoors and provide as much shade as possible. Change the water frequently to prevent mosquitoes from breeding.
- If you feel any symptoms of heat illness such as dizziness, nausea, muscle cramps or headache, immediately stop all activity and move to a cooler area to rest and drink fluids. Medical attention should be sought if symptoms do not improve.

The San Antonio Metropolitan Health District encourages the community to contact the National Weather Service for the most current weather conditions at 830-606-3617 or visit www.weather.gov/sanantonio for current hourly weather. During the hot summer days, the **Heat Outlook (Level I) will not be deactivated.**

For Further Assistance:

If you have an emergency, call:	911
For utility assistance, call CPS:	210-353-2222
For fan assistance, call the United Way Help Line:	211
For non-emergency information, call:	311 (Hours 7 a.m. – 11 p.m.)



Emergency Preparedness and Response

Emergency Preparedness & Response

Tips for Preventing Heat-Related Illness

The best defense is prevention. Here are some prevention tips:

- Drink more fluids (nonalcoholic), regardless of your activity level. Don't wait until you're thirsty to drink. Warning: If your doctor generally limits the amount of fluid you drink or has you on water pills, ask him how much you should drink while the weather is hot.
- Don't drink liquids that contain alcohol 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.
- Stay indoors and, if at all possible, stay in an air-conditioned place. If your home does not have air conditioning, go to the shopping mall or public library—even a few hours spent in air conditioning can help your body stay cooler when you go back into the heat. Call your local health department to see if there are any heat-relief shelters in your area.
- Electric fans may provide comfort, but when the temperature is in the high 90s, fans will not prevent heat-related illness. Taking a cool shower or bath, or moving to an air-conditioned place is a much better way to cool off.
- Wear lightweight, light-colored, loose-fitting clothing.
- NEVER leave anyone or any pets in a closed, parked vehicle.
- Although any one at any time can suffer from heat-related illness, some people are at greater risk than others. Check regularly on:
 - Infants and young children
 - People aged 65 or older
 - People who have a mental illness
 - Those who are physically ill, especially with heart disease or high blood pressure
- Visit adults at risk at least twice a day and closely watch them for signs of heat exhaustion or heat stroke. Infants and young children, of course, need much more



frequent watching.

If you must be out in the heat:

- Limit your outdoor activity to morning and evening hours.
- Cut down on exercise. If you must exercise, drink two to four glasses of cool, nonalcoholic fluids each hour. A sports beverage can replace the salt and minerals you lose in sweat. Warning: If you are on a low-salt diet, talk with your doctor before drinking a sports beverage. Remember the warning in the first “tip” (above), too.
- Try to rest often in shady areas.
- Protect yourself from the sun by wearing a wide-brimmed hat (also keeps you cooler) and sunglasses and by putting on sunscreen of SPF 15 or higher (the most effective products say “broad spectrum” or “UVA/UVB protection” on their labels).



Appendix E

Heat Stress and Athletic Participation Information, University Interscholastic League (UIL), Taken from the Athletic Manuals for Coaches and Administrators, 2004-2005.

This information is located in the following UIL athletic manuals: Baseball, Basketball, Softball, Tennis, Cross Country, Football, Soccer, Volleyball, Wrestling Manual & Spring Meet Manual (Golf, Tennis, Track and Field).

HEAT STRESS AND ATHLETIC PARTICIPATION. 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. There are no excuses for heatstroke 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 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 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 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 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 64.....Unlimited activity
65-72.....Moderate risk
74-82.....High risk
82 plusVery high risk

There is also a weather guide for activities that last 30 minutes or more (Fox and Mathews, 1981) which involves knowing the relative humidity and air temperature:

Air Temp	Danger Zone	Critical Zone
70 F	80 percent RH	100 percent RH
75 F	70 percent RH	100 percent RH
80 F	50 percent RH	80 percent RH
85 F	40 percent RH	68 percent RH
90 F	30 percent RH	55 percent RH
95 F	20 percent RH	40 percent RH
100 F	10 percent RH	30 percent RH

RH = Relative Humidity

One other method of measuring the relative humidity is the use of a sling psychrometer, which measures wet bulb temperature. The wet bulb temperature should be measured prior to practice and the intensity and duration of practice adjusted accordingly.

Recommendations are as follows:

Under 60 FSafe but always observe athletes
61-65 FObserve players carefully
66-70 FCaution
71-75 FShorter practice sessions and more frequent water and rest breaks
75 plusDanger level and extreme caution

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 prearranged 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.

~ 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: Gate lode, 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.

Link to UIL Athletic Manuals for Coaches and Administrators:

www.uil.utexas.edu go to athletics > all UIL sports > athletic manuals for all activities.

UIL Telephone (512) 471-5883

Appendix F

Heat Injury Precautions Taken for Special Events

The occurrence of heat-induced illnesses is the highest in Bexar County, Texas from late April through September when the daily high temperature generally ranges between 90 to 100 degrees Fahrenheit. During this time of year, we can experience hot, high humid conditions on one day, followed by a brisk northern wind the following day and then have temperatures climb into the nineties on the next day. Temperatures change very rapidly.

In combination with humidity, these temperatures can result in a heat index value that can produce heat injury, especially to individuals engaging in outdoor activities, i.e. running, jumping, marching, and other vigorous activities. Persons who are not acclimatized to working in hot environments and who are exposed to combinations of environmental and metabolic heat above an identified tolerance level substantially increase their risk of incurring acute adverse health affects. The classes of heat injury include heat cramps, heat exhaustion, and heat stroke. All injuries will require medical follow-up treatment.

The following is a list of precautions and prevention measures that can be taken by schools, private organizations and participants when planning and attending special events.

1. Strenuous outdoor physical activities should not be conducted when the heat index reads 105°F or above. Please contact the National Weather Service for current weather conditions at 830-606-3617 or www.weather.gov/sanantonio
2. All summer events, ideally, should be scheduled for early morning or late evening.
3. Activity sponsors should provide fluids (water) throughout the duration of the event.
4. Participants should be encourage to drink eight ounces of fluid ten to 15 minutes before the activity and fluid ingestion at frequent intervals should be permitted during the activity.
5. Participants should be instructed on the recognition of early signs and symptoms of developing heat illness.
6. Provisions should be made for the care of heat-induced illnesses.
7. Wear clothing that is lightweight, loose fitting, and light-colored, hats and sunscreen.
8. If possible, mist stations should be provided to cool down the participants.

Appendix G

Humane Society of San Antonio
4804 Fredericksburg / San Antonio, TX 78229
(210) 226-7461 / Fax (210) 225-7297

Protect Your Pet from Hot Weather

To protect your pet from summertime hazards, please follow these tips:

- ✓ Never leave your pet in a parked car. Even cracked windows won't protect your pet from overheating or suffering from heat stroke during hot summer days.
- ✓ Exercise your dog in the early morning or evening hours, instead of during the middle of the day when it's the hottest.
- ✓ If your dog or cat are out during the day, remember that asphalt and concrete can get very hot and burn the pads of your pet's feet. Your pet must always have shelter available to protect it from extreme temperatures and inclement weather. Keep in mind, too, that pets who are older or overweight are more likely to overheat during hot weather.
- ✓ Since many people treat their lawns with pesticides at this time of year, keep your pet away from unfamiliar yards and grassy areas.
- ✓ Provide your pet with fresh, cool water every day in a tip-proof bowl.
- ✓ Keep your pet well-groomed, but resist the temptation to shave off all of his hair in an effort to keep him cool. A pet's coat will protect him from getting sunburned. The coat also acts as cooling insulation for most animals.
- ✓ Keep your pet away from spots or puddles of auto coolant in the garage, driveway, or parking lots. The sweet taste of this poisonous liquid is tempting to animals, but could lead to a fatal result.
- ✓ Don't let your dog ride in the back of an open vehicle, like a pick-up truck. Unless your dog is riding in the cab with you, your dog could be bounced or jump out of the moving vehicle. If your pet must travel in the back of an open vehicle, make sure he's safely tethered to the center of the bed where he's unable to reach the sides and is able to stand or sit on a slip-proof and cool surface.

Appendix H

LINKS TO OTHER HEAT RELATED SITES

Texas Department of State Health Services – Heat Precautions
http://www.dshs.state.tx.us/preparedness/factsheet_heat.shtm

Texas Guide to School Health Program
<http://www.dshs.state.tx.us/schoolhealth/shpguide/chap9.pdf> (see pp. 509-513)

University Interscholastic League
http://www.uil.utexas.edu/athletics/health/heat_stress.html

Humane Society of San Antonio
www.sahumane.org

March of Dimes
www.marchofdimes.com

NOAA's National Weather Service, Office of Climate, Water, and Weather Service
www.weather.gov/sanantonio

References

United States Environmental Protection Agency, Office of Atmospheric Programs
Excessive Heat Events Guidebook, EPA 430-B-06-005, June 2006



Have a FANtastic Summer!

Project Cool is a collaborative initiative designed to alleviate health risks to seniors, 60 years and older, by providing them with a new box fan. The project has provided over 52,000 fans to seniors in San Antonio and Bexar County. The San Antonio Metropolitan Health District also provides fan recipients with information on how to avoid heat related illnesses and how best to use the fans safely.

Starting June, any person 60 years or older is eligible to receive a fan. To find out where you can get a fan, please call the 211 Texas/United Way Help Line. They will give you the distribution center closest to you.

APPENDIX I: Use of Portable Electric Fans during Excessive Heat Events

The widespread availability and ease of using portable electric fans draw many people to use them for personal cooling during an EHE. Portable electric fans can, however, increase the circulation of hot air, which can increase thermal stress and health risks during EHE conditions.

As a result, portable electric fans need to be used with caution under specific circumstances during an EHE. Here is a list of Do's and Don'ts for their use:

DO

- **Use a portable electric fan in or next to an open window so heat can exhaust to the outside (box fans are best).**
- **Use a portable electric fan to bring in cooler air from the outside.**
- **Plug your portable electric fan directly into a wall outlet. If you need an extension cord, check that it is a UL (Underwriter Laboratories) approved in the United States or CSA (Canadian Standards Approved) in Canada.**

DON'T

- **Use a portable electric fan in a closed room without windows or doors open to the outside.**
- **Believe that portable electric fans cool air. They don't. They just move the air around and keep you cool by helping to evaporate your sweat.**
- **Use a portable electric fan to blow extremely hot air on yourself. This can accelerate the risk of heat exhaustion.**
- **Use a fan as a substitute for spending time in an air-conditioned facility during an EHE.**

If you are afraid to open your window to use a portable electric fan, choose other ways to keep cool (e.g., cool showers, spend time in an air-conditioned location).

Appendix J: Heat Index Chart

NOAA's National Weather Service

Heat Index

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	118	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	126	130					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution
 Extreme Caution
 Danger
 Extreme Danger

Appendix K: COMMUNITY RESOURCES

City Public Service (CPS) Customer Service Line	210-353-2222	Financial assistance with utility bills
Bexar County Department of Community Resources	210-335-6770	Utility assistance Energy Crisis Program
San Antonio Water System (SAWS)	210-704-7297	Financial planning assistance with water bills
City of San Antonio Center for Working Families	210-207-7830	Financial assistance
Humane Society San Antonio	210-226-7461	Tips for your pets
211 Texas/United Way Help Line	2-1-1	Request a portable fan, PROJECT COOL
Alamo Service Connection Bexar Area Agency on Aging	210-477-3275	Cool Neighbor Campaign-Door Hanger and Thermometer explaining Heat Related signs and symptoms Information and referrals for seniors over age 60 for utility assistance and home weatherization programs