



July 2007

Safety News

Safety Is No Accident

How Hot is Dangerously Hot

The risk of heat illness is present when the heat index is 100 °F or more. The heat index is an accurate measure of how hot it really feels when relative humidity is added to the actual air temperature. For example, if the temperature is 90 °F and the humidity is 60 percent, the heat index is 100°F. A temperature of 95 °F with relative humidity at 40 percent produces a heat index of 101 °F. When the heat index is this high, several illnesses such as heat stroke, heat cramps or heat exhaustion are possible with physical activity or prolonged exposure. The heat may overcome the body's ability to regulate internal body temperature at a safe level.

Inside this issue:

Heat Stroke	2
Treating Heat Stroke	2
Do Not Leave Children or Pets in Car	2
Heat Exhaustion	3
Signs and Symptoms	3
Treatment	3
Heat Cramps	4
Dehydration	5
Sunburn	5
If You Must Be In the Heat	6
Heat Illness Prevention Guide For Workers	6

Extreme Heat and Your Health

Ah, summer... time to relax and enjoy the sun. Unfortunately, as summer temperatures rise and humidity fills the air, people must take precautions to prevent heat-related illnesses. These summertime ailments are more common than you may think, and they can strike anyone, including highly conditioned athletes. In fact, people don't even have to be outdoors or doing anything strenuous to suffer from a heat-related illness.

Heat-related deaths and illness are preventable yet annually many people succumb to extreme heat.

Tips for Preventing Heat Related Illness

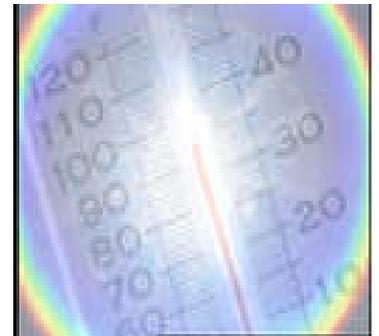
- Drink more fluids, regardless of your activity level. Don't wait until you're thirsty to drink. If your doctor generally limits the amount of fluid you drink or has you on water pills, ask him how much you should drink while the weather is hot.
- Don't drink liquids that contain alcohol or large amounts of sugar—these cause you to lose more body fluid. Avoid very cold

drinks because they can cause stomach cramps.

heat exposure caused 8,015 deaths in the United States. During this period, more people in this country died from extreme heat than from hurricanes, lightning, tornadoes, floods, and earthquakes combined. In 2001, 300 deaths were caused by excessive heat exposure.

Air-conditioning is the number one protective factor against heat-related illness and death. If a home is not air-conditioned, people can reduce their risk for heat-related illness by spending time in public facilities that are air-conditioned.

Summertime activity, whether on the playing field or the construction site, must be balanced with measures that aid the body's cooling mechanisms and prevent heat-related illness.



For information on temperatures and heat index check the [7 day weather forecast](http://www.wrh.noaa.gov/forecast/MapClick.php?site=psr&sm ap=1&textField1=33.44833&textField2=112.07333). (<http://www.wrh.noaa.gov/forecast/MapClick.php?site=psr&sm ap=1&textField1=33.44833&textField2=112.07333>)

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 in a closed, parked vehicle.

- Stay indoors and, if 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.
- Electric fans may provide

Heat Stroke—Extreme Heat Stress

Heat stroke is the most serious heat-related illness.

It occurs when the body becomes unable to control its temperature: the body's temperature rises rapidly, the body loses its ability to sweat, and it is unable to cool down. Body temperatures rise to 106°F or higher within 10 to 15 minutes. In severe cases, heatstroke may lead to brain damage, coma or death. Consequently, prompt medical attention is a must.

It can occur in a short period of time when an individual is exposed to direct sunlight,

poor air circulation and high temperatures, especially during physical activity.

Recognizing Heat Stroke

In many cases, heatstroke occurs as a natural progression of heat exhaustion, but it may also occur without warning. Symptoms to watch for include:

- An extremely high body temperature (above 103°F, orally)
- Red, hot, and dry skin (no sweating)

- Rapid, strong pulse
- Rapid, shallow breathing
- Throbbing headache
- Dizziness
- Small pupils
- Tingling sensations
- Nausea
- Confusion
- Convulsions
- Unconsciousness

Dealing With Heat Stroke

If you see any signs of heat stroke, you may be dealing with a life-threatening emergency. Have someone call for immediate medical assistance while you begin cooling the victim. Treatment must be given at once. Quick action will dramatically improve the chances for recovery.

Be careful about giving the person liquids by mouth, as the person may slip out of consciousness or experience convulsions unexpectedly. Never give water to an unconscious person. Loosen or remove most of the victim's clothing, apply cool towels and fan the person's body.

Until an ambulance arrives, place a blanket soaked in cold water over the victim.

Do the following:

- Get the victim indoors or to a shady area at once.
- Cool the victim rapidly using whatever methods you can. For example, immerse the victim in a tub of cool (not cold) water; place the person in a cool shower; spray the victim with cool water from a garden hose; sponge the person with cool water; or 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.

Sometimes a victim's muscles will begin to twitch uncontrollably as a result of heat stroke. If this happens, keep the victim from injuring himself, but do not place any object in the mouth and do not give fluids. If there is vomiting, make sure the airway remains open by turning the victim on his or her side.



YOU CAN GET TOO MUCH OF A GOOD THING

Heat stroke is a form of hyperthermia (elevated body temperature) with accompanying physical and neurological symptoms. Heat stroke is a medical emergency that can be fatal if not properly and promptly treated.



**“Heatstroke”
Hey Ed, there’s a picture.
Wow, it looks just like you.**

Without prompt action Ed is in serious trouble.

Do Not Leave Children or Pets in Parked Cars

Even in cool temperatures, cars can heat up to dangerous temperatures very quickly. Even with the windows cracked open, interior temperatures can rise almost 20 degrees Fahrenheit within the first 10 minutes. Anyone left inside is at risk for serious heat-related illnesses or even death.

- Never leave infants, children or pets in a parked car, even if the windows are cracked open.
- To remind yourself that a child is in the car, keep a stuffed animal in the car seat. When the child is buckled in, place the stuffed animal in the front with the driver.
- When leaving your car, check to be sure everyone is out of the car. Do not overlook any children who have fallen asleep in the car.

Heat Exhaustion

Heat exhaustion is a milder form of heat-related illness than heat stroke that can develop after several days of exposure to high temperatures and inadequate or unbalanced replacement of fluids. It is the body's response to an excessive loss of the water

contained in sweat. Alcohol, lack of water, excessive sweating, vomiting and diarrhea can increase a person's chances of heat exhaustion. Those most prone to heat exhaustion are elderly people, people with high blood pressure, and people working

exercising in a hot environment.

Heat exhaustion is a more serious condition than heat cramps and may either be preceded by heat cramps or develop on its own.



Trying To Deal With The Heat

Electric fans may provide comfort, but when the temperature is in the high 90s, fans will not prevent heat-related illness.



It's a little warm!

Recognizing Heat Exhaustion

Warning signs of heat exhaustion include:

- Heavy sweating
- Paleness
- Muscle cramps
- Tiredness
- Weakness
- Dizziness

- Headache
- Nausea or vomiting
- Fainting
- Chills
- Irritability

The skin may be cool and moist. The victim's 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. Seek medical attention immediately if any of the following occurs:

- Symptoms are severe
- The victim has heart problems or high blood pressure

Otherwise, help the victim to cool off, and seek medical attention if symptoms worsen or last longer than 1 hour.

What to do For Heat Exhaustion

Treatment for heat exhaustion is similar to treatment for heat cramps, with a few key additions. After moving to a cool place (preferably indoors with air conditioning or a fan), lie flat with your feet elevated slightly. Remove any excess clothing, and place cool, moist towels on your head, neck, armpits and groin. As with heat cramps, take sips of cool, salty water or sports drink, and do not take salt tablets or aspirin.

If heat exhaustion occurs, take immediate actions to cool the victim. Move the victim to a cool place. Apply cool, wet

cloths to the forehead and wrists. Loosen clothing so air can circulate to the skin. Give the victim plenty of cool water to drink. If the victim does not respond to treatment within five to ten minutes, call an ambulance.

Cooling measures that may be effective include the following:

- Cool, nonalcoholic beverages
- Rest
- Cool shower, bath, or sponge bath
- An air-conditioned

environment

- Lightweight clothing

Without proper treatment, heat exhaustion may unexpectedly develop into heatstroke, so call for medical help if possible. Also, if you see someone you suspect is suffering from heat exhaustion, offer your assistance in carrying out the steps described above. This is especially important if the person seems disoriented.

Hot Weather Emergencies

Even short periods of high temperatures can cause serious health problems. Doing too much on a hot day, spending too much time in the sun or staying too long in an overheated place can cause heat-related illnesses. Know the symptoms of heat disorders and overexposure to the sun, and be ready to give first aid treatment.

Heat Cramps

Heat cramps are muscle pains or spasms – usually in the abdomen, arms, or legs – that may occur in association with strenuous activity, though they can occur at other times as well. People who sweat a lot during strenuous activity are prone to heat cramps. This sweating depletes the body's salt and moisture. The low salt level in the muscles causes painful cramps. Heat cramps may also be a symptom of heat exhaustion. If left untreated, heat cramps may lead to heat exhaustion or heatstroke. Consequently, prompt treatment is essential. If you have heart problems or are on a low-sodium diet, seek medical attention for heat cramps.

Other symptoms to watch for

include lightheadedness, nausea, profuse sweating and excessive thirst. As soon as you notice any of these symptoms coming on, stop what you are doing and move indoors (or at least into the shade). Re-hydrate yourself by drinking sips of cool water, preferably mixed with salt (one teaspoon per quart of water), or a sports drink such as Gatorade. Avoid excessively sweet drinks, alcohol and caffeine, and do not take salt tablets or aspirin. Use cool, moist towels to speed the cooling process, and gently massage the affected muscles to loosen them up. You may also want to do some light stretching exercises. If heat cramps occur, apply firm pressure on cramping muscles, or

use gentle massage to relieve spasm. Get the person to a cooler place and have him or her rest in a comfortable position. Give the victim sips of water.

If medical attention is not necessary, take these steps:

- Stop all activity, and sit quietly in a cool place.
- Drink clear juice or a sports beverage.
- Do not return to strenuous activity for a few hours after the cramps subside, because further exertion may lead to heat exhaustion or heat stroke.

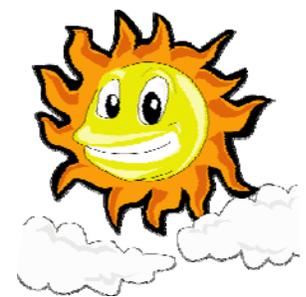
Seek medical attention for heat cramps if they do not subside in 1 hour.



Keepin' Cool

Remember to keep cool and use common sense.

Drink plenty of fluid, replace salts and minerals, wear appropriate clothing and sunscreen (SPF 15 or higher),



'I DON'T GET NO RESPECT!!!!'

Respect the Sun - Avoid Sunburn

The Ultra-Violet rays of the sun and the radiant heat can turn a day of fun into a day of pain.

Sunburn should be avoided because it damages the skin. Although the discomfort is usually minor and healing often occurs in about a week, a more severe sunburn may require medical attention.

Symptoms of sunburn are well known: the skin becomes red, painful, and abnormally warm after sun exposure.

Consult a doctor if the sunburn affects an infant younger than 1 year of age or if these symptoms are present:

- Fever
- Fluid-filled blisters
- Severe pain

When treating sunburn:

- Avoid repeated sun exposure.
- Apply cold compresses or immerse the sunburned area in cool water.
- Do not use salve, butter, or ointment.
- Do not break blisters.

Those at Greatest Risk for Heat Related Illness

Those at greatest risk for heat-related illness include infants and children up to four years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications.

Elderly people (aged 65 years and older) are more prone to heat stress than younger people for several reasons:

- Elderly people do not adjust as well as young people to sudden

changes in temperature.

- They are more likely to have a chronic medical condition that upsets normal body responses to heat.
- They are more likely to take prescription medications that impair the body's ability to regulate its temperature or that inhibit perspiration.
- The risk for heat-related illness and death may in

crease among people using the following drugs: (1) psychotropics, which affect psychic function, behavior, or experience (e.g. haloperidol or chlorpromazine); (2) medications for Parkinson's disease, because they can inhibit perspiration; (3) tranquilizers such as phenothiazines, butyrophenones, and thiozanthenes; and (4) diuretic medications or "water pills" that affect fluid balance in the body.

Dehydration

Water is essential to human life: It forms the basis for all body fluids, including blood and digestive juices; it aids in the transportation and absorption of nutrients; and it helps eliminate waste.

If you're an average adult, every day you lose more than 10 cups (close to 2.5 liters) of water simply by sweating, breathing and eliminating waste. You also lose electrolytes — minerals such as sodium, potassium and calcium that maintain the balance of fluids in your body. Normally, you can replenish what you've lost through the foods and liquids you consume, even when you're active.

replace, dehydration results — your system literally dries out. If lost fluid remains unreplenished, you may suffer serious consequences. Sometimes dehydration may occur for simple reasons: You don't drink enough because you're sick or busy, or because you lack access to potable water when you're traveling, hiking or camping.

Common causes of dehydration include intense bouts of diarrhea, vomiting, fever or excessive sweating. Inadequate intake of water during hot weather or exercise also may deplete your body's water stores. Anyone may

and people with chronic illnesses are most at risk. Mild dehydration can cause symptoms such as weakness, dizziness and fatigue. Severe dehydration is a life-threatening medical emergency.

You can usually reverse mild to moderate dehydration by increasing your intake of fluids, but severe cases need immediate medical treatment. The safest approach is not to become dehydrated in the first place. You can do that by monitoring your fluid loss during hot weather, illness or exercise, and drinking enough liquids to replace what you lose.



Drink plenty of water.

Unfortunately, thirst isn't always a reliable gauge of the body's need for water, especially in children and older adults.

Signs and Symptoms of Dehydration

Mild to moderate dehydration is likely to cause:

- Dry, sticky mouth
- Sleepiness or tiredness — children are likely to be less active than usual
- Thirst
- Decreased urine output — fewer than six wet diapers a day for infants and eight hours or more without urination for older children and teens
- Few or no tears when crying
- Muscle weakness

- Headache
- Dizziness or lightheadedness

Severe dehydration, a medical emergency, can cause:

- Extreme thirst
- Extreme fussiness or sleepiness in infants and children; irritability and confusion in adults
- Very dry mouth, skin and mucous membranes
- Lack of sweating
- Little or no urination — any urine that is produced will be dark yellow or amber
- Sunken eyes
- Shriveled and dry skin that lacks elasticity and doesn't "bounce back" when pinched into a fold
- In infants, sunken fontanel — the soft spots on the top of a baby's head
- Low blood pressure
- Rapid heartbeat
- Fever
- In the most serious cases, delirium or unconsciousness

Prevention and Care for Dehydration

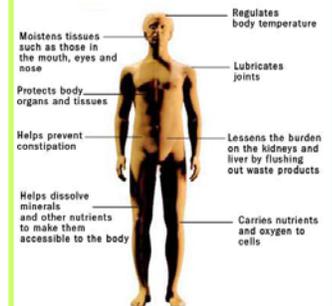
To prevent dehydration, consume plenty of fluids and foods high in water such as fruits and vegetables. According to the Institute of Medicine, letting thirst be your guide is an adequate daily guideline for most healthy people. Fluids can be obtained not just from water but also from other beverages and

foods. But, if you're exercising, don't wait for thirst to keep up with your fluids.

If you're a healthy adult, you can usually treat mild to moderate dehydration by drinking more fluids. Get immediate medical care if you develop severe signs and symptoms such as extreme thirst, no urination for eight

hours, shriveled skin, dizziness and confusion.

Children and adults who are severely dehydrated should be treated by emergency personnel in an ambulance or in a hospital emergency room, where they can receive salts and fluids through a vein (intravenously) rather than by mouth.



© Mayo Foundation for Medical Education and Research. All rights reserved.
Functions of Water in the Body



MARICOPA COUNTY PARKS AND RECREATION
DEPARTMENT

234 N Central Avenue
Suite 6400
Phoenix, AZ 85004

Phone: 602 506-2930
Fax: 602 506-4692



If You Must Be 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).

Pace yourself. If you are not accustomed to working or exercising in a hot environment, start slowly and pick up the pace gradually. If exertion in the heat makes your heart pound and leaves you gasping for breath, STOP all activity. Get into a cool area or at least in the shade, and rest, especially if you become lightheaded, confused, weak, or faint.

Heat Illness Prevention Guidance for Workers

Emergency Phone Numbers

If in doubt call **911**

Arizona Poison Control Center

1-800-222-1222

Please contact Carolyn Mayberry at Park Headquarters if you would like more information on any of these topics for safety tailgate sessions.

Awareness of heat illness symptoms can save your life or the life of a co-worker

- If you are coming back to work from an illness or an extended break or you are just starting a job working in the heat, it is important to be aware that you are more vulnerable to heat stress until your body has time to adjust. Let your employer know you are not used to the heat. It takes about 5 – 7 days for your body to adjust.

- Drinking plenty of water frequently is vital to workers exposed to the heat. An individual may produce as much as 2

to 3 gallons of sweat per day. In order to replenish that fluid the worker should drink 3 to 4 cups of water every hour starting at the beginning of your shift.

- Taking your breaks in a cool shaded area and allowing time for recovery from the heat during the day are effective ways to avoid heat illness.
- Avoid or limit the use of alcohol and caffeine during periods of extreme heat. Both dehydrate the body.
- If you or a co-worker start to feel symptoms such as nausea, dizziness,

weakness or unusual fatigue, let your supervisor know and rest in a cool shaded area. If symptoms persist or worsen seek immediate medical attention.

- Whenever possible, wear clothing that provides protection from the sun but allows airflow to the body. Protect your head and shade your eyes if working outdoors.
- When working in the heat be sure to pay extra attention to your co-workers and be sure you know how to call for medical attention.

Sources:

- Centers for Disease Control and Prevention - <http://www.cdc.gov/nceh/hsb/>
- American Red Cross - <http://www.redcross.org/services/hss/tips/heat.html>
- National Weather Service Forecast Office - <http://www.srh.noaa.gov/elp/wxcalc/heatindex.html>
- Familydoctor.org - <http://familydoctor.org/online/famdocen/home/healthy/firstaid/basics/088.html>
- American Academy of Family Physicians - <http://www.aafp.org/afp/980901ap/barrow.html>
- Arizona Department of Health Services - http://www.azdhs.gov/phs/oeh/protect_from_heat.htm
- Web Med - <http://www.webmd.com/a-to-z-guides/Heat-Related-Illnesses-Topic-Overview>
- Presidents Council on Physical Fitness and Sports - http://www.fitness.gov/heat_related_illness_stress.htm
- Federal Emergency Management Agency (FEMA) - <http://www.fema.gov/areyouready/heat.shtm>
- Wikipedia - <http://en.wikipedia.org/wiki/Hyperthermia>