DESERT SANDS UNIFIED SCHOOL DISTRICT
The Future Is Here!

HEAT ILLNESS PREVENTION PROGRAM

FOR

DESERT SANDS UNIFIED SCHOOL DISTRICT

REVISED APRIL 2022

PURPOSE AND SCOPE

The Desert Sands Unified School District (DSUSD, District) is committed to providing a safe and healthy working and learning environment for all teachers, staff members, and students. This Heat Illness Prevention Program is written in compliance with California Code of Regulations (CCR), Title 8, Section 3395 *(Heat Illness Prevention in Outdoor Places of Employment)*, and will be updated as District protocols change.

It is no secret to long-time residents of the Coachella Valley that outdoor temperatures regularly approach and exceed 100 degrees Fahrenheit, particularly in the summer months. The goal of this program is to provide employees information and training pertaining to signs and symptoms of heat-related illnesses; how to respond to an individual exhibiting a heat-related illness; and how to avoid onset of a heat-related illness. Elements of this program include employee training; student awareness of heat-related health hazards; and provision of shade, climate-controlled spaces, water, and periodic rest breaks to employees working in high-temperature conditions.

As of the writing of this plan update, a Cal/OSHA heat illness prevention standard has not been issued for general-industry workers in indoor environments. This document will be updated at such time that an indoor heat illness prevention standard is adopted. Regardless, workers in certain indoor environments (e.g. warehouse) where the temperature is expected to exceed that of "typical" indoor work environments shall receive heat-illness training. Furthermore, these employees should be familiar with signs of heat illness and must take the necessary steps to prevent becoming ill from the heat.

RESPONSIBILITY

The DSUSD Director of Risk Management is the ***Heat Illness Prevention Program Administrator.*** The Safety and Industrial Hygienist Manager, working under the direction of the Director of Risk Management, is responsible for oversight and implementation of various elements of the Heat Illness Prevention Program, such as annual training for the target audience (see the "Training" section for more information). The Safety and Industrial Hygienist Manager is also responsible for reviewing the Heat Illness Prevention Program on a regular basis and notifying Department Supervisors of any changes to the program.

Department Supervisors are responsible for identifying District employees who work in, or have the potential to work in, high-heat environments and ensuring that these employees take Heat Illness Prevention Training on an annual basis, at minimum. Supervisors who have employees exposed to high-heat environments must be trained on the topics outlined in the "Training" section as well as specific responsibilities for supervisors (see the "Supervisor's Duties" section) and emergency response procedures for employees potentially succumbing to heat illness. The Safety and Industrial Hygienist Manager is available for training assistance, if desired.

School Principals, Athletics Personnel *(Coaches, Directors, Trainers)**, Physical Education Teachers, and Playground Supervisors*** are responsible for monitoring weather conditions and making modifications to athletic and physical-education activities as conditions warrant. Athletics personnel should ensure that all student-athletes know the signs and symptoms of heat-related illnesses and take the necessary emergency response measures should a student-athlete succumb to heat illness.

Teachers and Staff Members who do not regularly work in high-heat environments but have the potential to encounter high-heat environments on occasion (e.g. field trips) should be aware of the risk of heat illness and have students take the necessary precautions to stay safe.

For field trips outdoors when temperatures are expected to be high:

- Have field trips occur earlier in the day, or during the cooler seasons, if possible.
- Limit the amount of time that students are outdoors, to that which is necessary for the educational objective.
- Instruct students to come prepared with cold water bottles, a hat and sunscreen the day of the trip.
- Take advantage of available shade and air-conditioned spaces.
- Take breaks regularly, encourage water consumption and monitor for signs and symptoms of heat illness among students, staff, and chaperones.

All Students, Employees, and Volunteers are responsible for:

- Understanding and complying with District and school site health and safety policies and procedures;
- Notifying their supervisor or Risk Management if any hazardous conditions are observed on the work site;
- Monitoring weather conditions daily, dressing appropriately for the weather while staying compliant with dress code, staying hydrated throughout the day, and staying alert for signs and symptoms of heat illness on hot days.

Please refer to **Appendix E** for a flyer addressing heat-illness preventative measures for students and teachers, and **Appendix F** for a flyer for employees.

SUSCEPTIBLE POPULATIONS AND RISK FACTORS FOR HEAT ILLNESS

Without proper precautions, everyone is susceptible to heat illness. However, there are certain populations which are at higher risk of developing heat illness:

- Younger children and infants
- Older adults, particularly those with pre-existing diseases, who are taking certain medications, who are living alone, or with limited mobility

- People with chronic medical conditions
- Women who are pregnant

In addition, the following may put someone at higher risk of developing a heat illness:

- **Environment –** high temperatures, high humidity, direct sun exposure, lack of wind
- **Lack of Acclimatization –** new employees, employees returning from vacation
- **Dehydration –** not drinking enough water, alcohol use within the last 24 hours, use of medications which are diuretics
- **Activities –** high exertion, not enough rest breaks, pushing through discomfort
- **Health Conditions –** short-term illnesses such as respiratory infections, diarrhea, vomiting; diabetes and heart disease; poor physical fitness; being overweight or obese
- **Medications –** to treat high blood pressure, colds, allergies, dizziness/vertigo, depression, etc.; some medications may be diuretics (i.e. high urine production)
- **Prior Heat Illness event**

TYPES OF HEAT ILLNESSES

There are 5 specific categories of heat-related illnesses:

- **Heat rash**
- **Heat syncope**
- **Heat cramps**
- **Heat exhaustion**
- **Heat stroke**

Heat rash, heat syncope, and heat cramps are generally regarded to be less severe illnesses compared to heat exhaustion and heat stroke. That said, it is important to address any and all heat illnesses immediately, as even a minor illness can quickly develop into heat exhaustion or heat stroke if left unaddressed.

The following sections will highlight the common symptoms of each illness, as well as how to treat or respond to each illness.

A timely response to heat illness, regardless of type, is critical and could help save a life. If you are a coworker or bystander and in doubt as to the victim's condition, seek medical attention immediately. **Call 911 (9-911 from a District/school site landline phone)**, or have another bystander call 911 if you choose to assist the victim. Without immediate attention and supervision, a victim's condition can rapidly deteriorate in the heat.

Heat Rash

Heat rash generally manifests in areas of the body where there are skin folds or where clothing causes friction. Common body regions include the armpits, elbow creases, and groin. In infants, the rash is found mainly on the neck, shoulders, and chest.

Signs of heat rash can range from superficial blisters, to deep, red lumps. People with heat rash have reported a prickly or intensely itchy sensation.

For the most part, heat rash clears on its own. Medical attention may be required for severe cases.

To prevent onset of heat rash, avoid overdressing in hot weather, and avoid tight-fitting clothes that can cause skin irritation.

Heat Syncope

Heat syncope, or fainting, occurs as a result of low blood pressure. Common causal factors include someone's standing still in a hot environment for an extended period of time, or vigorous physical activity (which usually precedes the fainting episode by 2 or more hours).

Signs of impending heat syncope include:

- Feeling faint or lightheaded;
- Skin that is pale, cool, and moist;
- Lightheadedness when changing positions, e.g. from a lying position to a standing position.

This illness is more common with individuals who are unfamiliar with a hot environment and have not properly adjusted to it. Dehydration is also a risk factor.

To address heat syncope, the victim should move to a cool environment and lie down if possible. Recovery is generally rapid once this action is taken.

Heat Cramps

Heat cramps are painful, involuntary muscle spasms that can occur during heavy exercise or exertion in hot environments. Athletes and other individuals who are not properly conditioned to the heat are more susceptible to experiencing heat cramps. Individuals who are not drinking adequate amounts of fluid and electrolytes are also at higher risk.

Muscle twitches can be a precursor to the initial onset of heat cramps. Individuals who experience muscle twitches should find shelter away from the heat and drink an electrolyte beverage.

Other symptoms which can precede heat cramps include fatigue, dehydration, thirst, and sweating.

The following tips can help student-athletes and staff members playing in or working in hot environments prevent the onset of heat cramps:

- Acclimatize to hot environments via proper preseason conditioning (for athletes) and workload management (for employees new to the job position or coming back from extended vacation).

- Educate on the proper replacement of fluids and electrolytes (refer to the "General Preventative Measures" section).

- Remove excess clothing during practices and conditioning activities. For example, for football athletes, if person-to-person contact is not anticipated during the conditioning activity, personal protective gear such as football pads do not need to be worn.

Heat Exhaustion

Heat exhaustion, alongside heat stroke, are considered the two most severe categories of heat illness. Heat exhaustion comes about from the body becoming overheated from strenuous exertion in hot environments. According to the University of Connecticut's Korey Stringer Institute (UConn-KSI), heat exhaustion is one of the most common medical conditions reported to park rangers at the Grand Canyon and other recreational hiking areas. In some cases, the individual may collapse to the ground – however, it is possible to experience heat exhaustion without physically collapsing.

The most common causal factor for heat exhaustion is dehydration via excessive sweating, without the replacement of fluids during exercise or exertion. Not drinking enough water before or during exertion can contribute to dehydration. Also, excessive exertion outdoors without sufficient breaks can contribute to overworking of the heart, which can lead to heat exhaustion.

These are the most common symptoms of heat exhaustion. Symptoms in bold are of special note so as to differentiate between heat exhaustion symptoms and heat stroke symptoms.

- Fatigue, nausea, fainting, weakness, vomiting, dizziness/lightheadedness, **pale complexion, cool and clammy skin**, chills, diarrhea, **heavy sweating,** decreased urine output/dehydration, irritability, headache, sodium loss, decreased blood pressure, decreased muscle coordination, hyperventilation, **rapid weak pulse,** core body temperature **between 96.8° and 105°F**

See **Appendix A** and **Appendix B** for a reference chart and infographic.

Individuals experiencing heat exhaustion should be responsive to treatment. To treat an individual suffering from heat exhaustion, take the following steps:

- Move the individual to a cool or shaded area
- Remove excess clothing
- Elevate their legs to facilitate blood flow
- Cool the individual with fans, towels dipped in cool water, or ice bags
- Provide the individual with water or electrolyte fluid

The following tips can help student-athletes and staff members working in hot environments prevent the onset of heat exhaustion:

- Individuals should adapt to increased exercise and intense outdoor work over a period of time. (Refer to the "General Preventative Measures" section.)

- Returning to activity (work/Athletics play) the same day of an episode is not advised. Individuals should wait at least 24-48 hours. It is strongly recommended that the individual be medically cleared by a physician to return to work/play before returning.

Heat Stroke

Heat stroke is considered to be the most serious heat illness because it can lead to death if not addressed and treated immediately.

Personal factors which can contribute to heat stress include a history of heat illness, inadequate acclimatization to the heat, low fitness level, being overweight or obese, inadequate hydration, and a lack of sleep.

As with heat exhaustion, excessive exertion in hot environments without adequate breaks can increase the risk of developing heat stroke. Intense activities in the heat for several days in a row can also increase the likelihood of a heat stroke.

These are the most common symptoms of heat stroke:

- High body temperature (above 105°F)
- Altered mental state or behavior
- (Lack of) sweating – skin feels hot and dry to the touch
- Nausea and vomiting
- Red, flushed skin
- Rapid breathing
- Racing heart rate
- Headache
- Collapse

See **Appendix A** and **Appendix B** for a reference chart and infographic.

If you suspect someone is experiencing heat stroke, ***seek medical help immediately.*** Call 911 (9-911 from a District/school site landline phone). If someone in close proximity is trained in First Aid, have them examine the victim. More than likely, the individual will be disoriented and not very responsive.

Remove all equipment and excess clothing from the individual. Get them to a shaded area or indoors. Cool them down as quickly as possible via one of the following methods:

- Immersion into a tub of water, or a cool shower
- Spray with a garden hose
- Sponge with cool water
- Fan while misting with cool water
- Placing ice packs or cold, wet towels on the person's head, neck, armpits, and groin

According to UConn-KSI, there is a 100 percent survival rate among victims of heat stroke, when immediate cooling was initiated within 10 minutes of onset.

Refer back to the "Heat Exhaustion" section for a list of preventative measures for heat stroke.

TRAINING

All employees working on job tasks which present the possibility of exposure to high-heat environments shall receive instruction before being assigned to work tasks. Refresher training shall be offered thereafter, at minimum annually and more often as conditions warrant.

Training topics will include:

- Environmental and personal risk factors for heat illness.
- Procedures for identifying, evaluating, and controlling exposures to the aforementioned risk factors.
- How to look up current and forecasted weather conditions online/ via smartphone.
- An emphasis on regular water consumption, up to 4 cups per hour when working in extreme heat conditions.
- Acclimatization and its role in preventing heat illnesses.
- The 5 types of heat illness, and signs and symptoms associated with each type.
- The importance of reporting signs or symptoms of heat illness immediately to their coworker or supervisor (self-reporting and reporting another employee's condition).
- Procedures for responding to symptoms of possible heat illness, including emergency response.

GENERAL PREVENTATIVE MEASURES

- Acclimatization – this is especially important if you are new to the Coachella Valley, new to outdoor work, new to the job task, or if you have been on vacation for an extended period of time and are returning to work. Start with a lighter work load and gradually build up to more demanding work. Allow your body to adjust over a few days.

- Drink lots of liquids. Don't wait until you're thirsty! By the time your body tells you it's time to drink water, you may already be dehydrated. Electrolyte drinks can replace both water and minerals lost through sweating – however, electrolyte drinks should not be a permanent replacement for water. Never drink alcohol, and avoid caffeinated beverages such as coffee and soda.

- Take frequent breaks – especially if you notice you're getting a headache or you start to feel overheated. Find a shaded area or air-conditioned building and cool off for a few minutes before going back to work.

- Wear lightweight, light-colored clothing when working out in the sun. Even in cloudy conditions, high humidity can also contribute to heat stress. You will benefit from wearing lightweight, breathable clothing in high-humidity conditions.

- Take advantage of fans and air conditioning when possible.

CONTACTING EMERGENCY MEDICAL SERVICES

- When a sick employee is unable to communicate, it shall be the responsibility of any other employee to contact emergency services when required, and to provide clear and precise directions to the employee's location.

- When an employee is showing symptoms of possible heat illness, steps will be taken immediately to keep the stricken employee cool and comfortable once emergency services have been called.

- Each employee working outdoors and/or without ready access to a landline phone should be provided with a radio and/or cell phone to report and contact emergency medical services in the event of a heat-related illness.

SUPERVISOR'S DUTIES

Supervisors who oversee employees who are exposed to high-heat environments are responsible for providing the following provisions to their staff members:

- **Water** – Employees with potential exposure to high-heat environments or other environmental factors for heat illness shall have immediate access to at least 1 quart of fresh, pure and cool potable drinking water per hour for the entire shift (i.e. 2 gallons of water per person for an 8-hour shift). Alternatively, smaller quantities of water provisions are acceptable as long as a supervisor or designee monitors water levels regularly throughout the work day and replenishes the water supply as needed. Water will be placed as close as possible to the work site.

- **Access to Shade –** Shade (or an air-conditioned facility) shall be present when the outdoor temperature exceeds 80 degrees Fahrenheit. Water will be made available in the shaded area. Employees will be allowed and encouraged to take a preventative cool-down rest in the shade whenever they feel the need to do so. Employees taking preventative cool-down rests will be encouraged to remain in the shade for at least 5 minutes, monitored for signs or symptoms of heat illness, and encouraged to stay in the area until any present signs or symptoms of heat illness have abated.

- **Temperature and Humidity Monitoring –** The District will utilize direct measurements or weather forecasts specific to the work site to identify if environmental risk factors for heat illness are present. Managers and supervisors may consult the National Weather Service's website at http://nws.noaa.gov for the latest weather conditions and forecast for their location. With the current temperature and humidity information, a supervisor may calculate the current heat index using **Appendix C.** Adverse heat-related health effects are possible starting at a heat index of 80 degrees Fahrenheit.

  Other control measures that will be taken to reduce the exposure to environmental risk factors include:

  - Providing shade for work areas
  - Scheduling outdoor and/or vigorous work in the cooler hours of the day
  - Scheduling more breaks during the day
  - Providing misters or other cooling devices
  - Propping up "EZ-up" canopies where needed

- **Work/Rest Schedules -** The supervisor should implement appropriate work/rest schedules for employees working in high-heat and/or high-humidity environments. The National Institute of Occupational Safety and Health (NIOSH) has provided a sample Work/Rest Schedule for supervisor reference **(see Appendix D)**. Please note that a temperature adjustment will be necessary for high-humidity environments (40% relative humidity and higher) as well as work done under full-sun or partly-cloudy conditions.
  - For additional guidance and technical support, please reach out to the Safety and Industrial Hygienist Manager.

- **High-Heat Procedures** *(for landscapers and employees transporting or delivering agricultural products, construction materials or other heavy materials)* – The District shall implement high-heat procedures when the temperature equals or exceeds 95 degrees Fahrenheit. These procedures shall include the following to the extent practicable:

    - Supervisor or designee will ensure effective communication by voice, mandatory buddy system, observation, or electronic means so that employees may contact a supervisor when necessary.
    - Frequent communication will be maintained with employees working by themselves or in smaller groups, to be on the lookout for possible symptoms of heat illness.
    - Employees will be observed for alertness and signs or symptoms of heat illness.
    - Pre-shift meetings before the commencement of work to review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.
    - New employees will be closely supervised by either supervisor or co-workers for the first 14 days of work (unless the employee indicates at the time of hire that he or she has been doing similar outdoor work for at least 10 of the past 30 days for four or more hours per day).
    - During high heat, employees must be provided with a minimum 10-minute cool-down period every two hours.
    - All employees shall be closely observed by a supervisor or designee during a heat wave. Heat wave is defined when the temperature will be predicted at least 80 degrees and at least ten degrees higher than average high daily temperature in the preceding five days.

- **Work Assignments in Indoor Environments –** Where employees are assigned work in an indoor environment where temperatures will meet or exceed 95°F, managers and supervisors shall meet with their employees and review the work procedures to be used during the high-heat period. Furthermore, supervisors will ensure that cool potable drinking water is available (refer to the "Water" section).

- **Communication –** Supervisors shall account for the whereabouts of all employees at appropriate intervals during and at the end of the work shift by maintaining contact via radio or cell phone. This procedure shall be followed whenever the outdoor work environment creates a heat hazard that could result in the worker experiencing heat exhaustion and/or heat stroke.

ACKNOWLEDGEMENTS

The DSUSD Risk Management department wishes to acknowledge the following departments, institutions and publications for their assistance and contributions to this Heat Illness Prevention Program. Thank you!

- ACGIH (American Conference of Governmental Industrial Hygienists)
- Arizona Department of Health Services
- California State University, Fresno – Office of Safety, Risk and Sustainability
- CDC (U.S. Centers for Disease Control and Prevention)
- Cigna
- Mayo Clinic (Heat Exhaustion | Heat Stroke)
- National Weather Service
- NIOSH (National Institute of Occupational Safety and Health)
- United States Postal Service
- University of Connecticut – Korey Stringer Institute

APPENDICES

- Appendix A – CDC: Heat-Related Illnesses
- Appendix B – USPS Infographic: Heat Exhaustion and Heat Stroke
- Appendix C – AZ DHS Heat Index Chart
- Appendix D – NIOSH Work-Rest Schedules
- Appendix E – DSUSD Safety Pin-Up: Heat Illness Prevention – Guidelines for Teachers and Students
- Appendix F – DSUSD Safety Pin-Up: Heat Illness Prevention – Guidelines for Employees
- Appendix G – OSHA Quick Card: Protecting Workers from Heat Stress

APPENDIX A

HEAT-RELATED ILLNESSES

WHAT TO LOOK FOR	WHAT TO DO
HEAT STROKE	
• High body temperature (103°F or higher) • Hot, red, dry, or damp skin • Fast, strong pulse • Headache • Dizziness • Nausea • Confusion • Losing consciousness (passing out)	• Call 911 right away-heat stroke is a medical emergency • Move the person to a cooler place • Help lower the person's temperature with cool cloths or a cool bath • Do not give the person anything to drink
HEAT EXHAUSTION	
• Heavy sweating • Cold, pale, and clammy skin • Fast, weak pulse • Nausea or vomiting • Muscle cramps • Tiredness or weakness • Dizziness • Headache • Fainting (passing out)	• Move to a cool place • Loosen your clothes • Put cool, wet cloths on your body or take a cool bath • Sip water **Get medical help right away if:** • You are throwing up • Your symptoms get worse • Your symptoms last longer than 1 hour
HEAT CRAMPS	
• Heavy sweating during intense exercise • Muscle pain or spasms	• Stop physical activity and move to a cool place • Drink water or a sports drink • Wait for cramps to go away before you do any more physical activity **Get medical help right away if:** • Cramps last longer than 1 hour • You're on a low-sodium diet • You have heart problems
SUNBURN	
• Painful, red, and warm skin • Blisters on the skin	• Stay out of the sun until your sunburn heals • Put cool cloths on sunburned areas or take a cool bath • Put moisturizing lotion on sunburned areas • Do not break blisters
HEAT RASH	
• Red clusters of small blisters that look like pimples on the skin (usually on the neck, chest, groin, or in elbow creases)	• Stay in a cool, dry place • Keep the rash dry • Use powder (like baby powder) to soothe the rash

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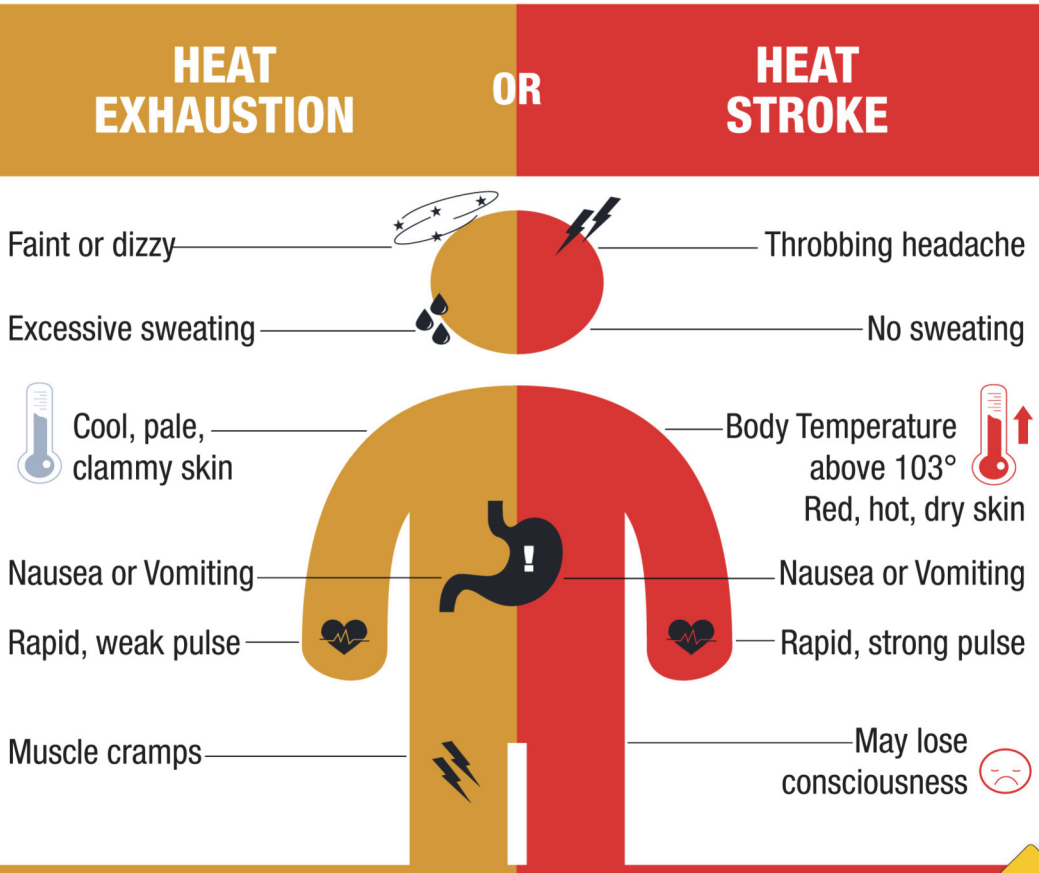
Prevent Heat Illnesses. Know the signs and act.



CALL 9-1-1

- Get to a cooler, air-conditioned place.
- Drink water if fully conscious.
- Take a cool shower or use cold compresses.

CALL 9-1-1

- Take immediate action to cool the person until help arrives.

SAFETY DEPENDS ON ME!
UNITED STATES POSTAL SERVICE

Seek Immediate Medical Assistance for Heat-Related Illnesses. Call 9-1-1.

See page 3.

APPENDIX C

Heat Index Chart with Health Effects and Safety Recommendations

How to use the chart: 1. Go to www.wrh.noaa.gov/psr and select your location to obtain the local temperature in Fahrenheit and relative humidity (RH) **2.** Find the corresponding temperature and RH on the chart. The box that connects the two numbers will contain the current heat index (HI) Notice the color of this box. **3.** Find the box with the same color and read about the health effects of the Heat Index and safety recommendations to follow.

Extreme Danger Danger Extreme Caution Caution

°F	RELATIVE HUMIDITY (%)																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
140	125																				
135	120	128																			
130	117	122	131																		
125	111	116	123	131	141																
120	107	111	116	123	130	139	148														
115	103	107	111	115	120	127	135	143	151												
110	99	102	105	108	112	117	123	130	137	143	150										
105	95	97	100	102	105	109	113	118	123	129	135	142	149								
100	91	93	95	97	99	101	104	107	110	115	120	125	132	138	144						
95	87	88	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136				
90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122		
85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108
80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86	87	88	89	91
75	69	69	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80
70	64	64	65	65	66	66	67	67	68	68	69	69	70	70	70	71	71	71	71	71	72

Heat Index: 130+ degrees F	Health Effect: Heatstroke/sunstroke is highly likely with continued exposure Recommendations: Avoid strenuous outdoor activity. Stay indoors in an air conditioned facility. Stay well-hydrated. Drink 10 gulps every 20 minutes. Check on your family, friends, and neighbors.
Heat Index: 105-129 degrees F	Health Effect: Sunstroke, heat cramps and heat exhaustion are likely. Heat stroke is possible with prolonged exposure and/or physical activity Recommendations: Avoid strenuous outdoor activity; Stay indoors in an air conditioned facility; Stay well-hydrated. Drink 10 gulps every 20 minutes.
Heat Index: 90-104 degrees F	Health Effect: Sunstroke, heat cramps and heat exhaustion are possible with prolonged exposure and/or physical activity Recommendations: Limit strenuous outdoor activity; Limit your time outdoors; Stay well-hydrated. Drink 10 gulps every 20 minutes.
Heat Index: 80-89 degrees F	Heat Effect: Fatigue is possible with prolonged exposure and/or physical activity Recommendations: Limit your time outdoors; Stay well-hydrated. Drink 10 gulps every 20 minutes.

HEAT STRESS
Work/Rest Schedules

Using work/rest schedules can decrease the risk of heat illness

Sample Work/Rest Schedule for Workers Wearing Normal Clothing*

The NIOSH work/rest schedule is based on air temperature, with adjustments for direct sunlight and humidity. It may not be applicable to all worksites. Other work/rest schedules are available, some of which are based on Wet Bulb Globe Temperature.

See reverse for temperature adjustments for the NIOSH work/rest schedule and examples of light, moderate, and heavy work.

Temperature (°F)	Light Work Minutes Work/Rest	Moderate Work Minutes Work/Rest	Heavy Work Minutes Work/Rest
90	Normal	Normal	Normal
91	Normal	Normal	Normal
92	Normal	Normal	Normal
93	Normal	Normal	Normal
94	Normal	Normal	Normal
95	Normal	Normal	45/15
96	Normal	Normal	45/15
97	Normal	Normal	40/20
98	Normal	Normal	35/25
99	Normal	Normal	35/25
100	Normal	45/15	30/30
101	Normal	40/20	30/30
102	Normal	35/25	25/35
103	Normal	30/30	20/40
104	**Normal**	**30/30**	**20/40**
105	Normal	25/35	15/45
106	45/15	20/40	Caution
107	40/20	15/45	Caution
108	**35/25**	**Caution**	**Caution**
109	30/30	Caution	Caution
110	15/45	Caution	Caution
111	Caution	Caution	Caution
112	Caution	Caution	Caution

Things you need to know:

- *Continuous work in the heat is not advisable—you must take rest breaks periodically to allow your body to cool down.*
- *A variety of work/rest schedules are available that can be adapted to your worksite. Relying on self-pacing alone may not be sufficient.*

Example

A worker performing heavy work in 104 °F temperatures should work for 20 minutes and rest for 40 minutes.

Example

A worker performing moderate work at 108 °F should use extreme caution! The risk for heat injury is high in this situation.

* From NIOSH Criteria for a Recommended Standard, Occupational Exposure to Heat and Hot Environments, https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf. **Assumptions:** workers are physically fit, well-rested, fully hydrated, under age 40, and environment has 30% humidity and perceptible air movement.

Work/Rest Schedules

Temperature Adjustments for this Work/Rest Schedule

Adjust the temperature in the table based on:

Environmental conditions	AND	Humidity
• Full sun (no clouds): Add 13 °F • Partly cloudy/overcast: Add 7 °F • No shadows visible, in the shade, or at night: No adjustment		• 40% humidity: Add 3 °F • 50% humidity: Add 6 °F • 60% humidity or more: Add 9 °F

Example Adjustment

Conditions at a mine are 90 °F, with partly cloudy skies and 50% humidity. Adjust the table as follows:

Add 7 °F for partly cloudy skies and 6 °F for 50% humidity, to arrive at 103 °F.

Photo by ©Thinkstock

Examples of Work at Different Intensity Levels

Light work

- Operating equipment
- Inspection work
- Walking on flat, level ground
- Using light hand tools (wrench, pliers, etc.). However, this may be moderate work depending on the task
- Travel by conveyance

Moderate work

- Jack-leg drilling
- Installing ground support
- Loading explosives
- Carrying equipment/supplies weighing 20–40 pounds
- Using hand tools (shovel, fin-hoe, scaling bar) for short periods

Heavy work

- Climbing
- Carrying equipment/supplies weighing 40 pounds or more
- Installing utilities
- Using hand tools (shovel, fin-hoe, scaling bar) for extended periods

Case Study: Use of Work/Rest Schedule

A crew was shoveling ore out from under the primary conveyor at a surface mine in Arizona in August. The high temperature that day was 113 °F. The crew was rotating in 10-minute shifts and hydrating between shifts. Coworkers noticed signs of heat illness in two employees, and they were transferred to the medical station for evaluation. From there they were sent to the hospital, where they were given IV saline and released home. Both employees recovered after rehydration at the hospital.

Lessons Learned

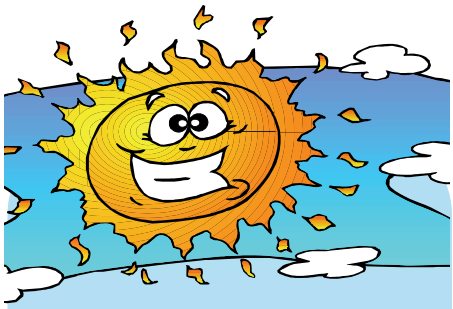
In extreme heat, even a work/rest schedule may not eliminate the risk of heat illness. In this case, use of work/rest schedules, frequent hydration, and team monitoring helped keep this situation from becoming even more serious. Without those safety precautions the workers could have potentially suffered more severe heat illness, possibly including heat stroke, which is life threatening.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

DHHS (NIOSH) Publication No. 2017-127

DESERT SANDS UNIFIED SCHOOL DISTRICT

SAFETY PIN-UP
HEAT ILLNESS PREVENTION
Guidelines for Teachers & Students



Things you should know about playing in the heat.....

If your student is coming back to school from an illness or an extended break or are new to the desert heat, it is important to be aware the student is more vulnerable to heat stress until their body has time to adjust. It takes about 5-7 days for your body to adjust

Drinking plenty of water frequently is vital when exposed to the heat. An individual may produce as much as 2-3 gallons of sweat per day. In order to replenish that fluid, all students should be allowed to carry water bottles and have easy access to cool drinking water.

Keep your students hydrated! However, discourage students from "energy drinks."

High-intensity exercise outside should be avoided during periods of high heat. This includes recess, lunch periods, and physical education classes.

Having a cool shaded area outside or an open supervised classroom, library or MPR, during high heat are effective ways to avoid heat illness. The use of misters, when available, lowers the outside temperature.

If your student has any symptoms such as nausea, dizziness, weakness or unusual fatigue, send to the health tech or front office. If symptoms persist or worsen, the school should seek medical attention.

Students should be encouraged to wear lightweight clothing to facilitate evaporation of perspiration. The use of hats and sunglasses should be allowed during outside play.

Students should be allowed to apply their own sunscreen that has been provided by the parent/guardian.

Students known to be at greater risk of heat stress should be monitored and restricted from prolonged exposure to outside activities during high heat periods.

The responsibility for the implementation of these guidelines specific to students, rest with the principal or designee at each site. This includes activity limitations.

Students participating in athletics are managed using California Interscholastic Federation (CIF) guidelines in relation to Heat Illness Prevention. http://www.cifstate.org/sports-medicine/heat_illness/index

The CDE also offers a web-based course, please visit the CDC web site at: http://www.cdc.gov/nceh/hsb/extreme/Heat_Illness/index.html

WHAT TO LOOK FOR: HEAT EXHAUSTION AND HEAT-STROKE

Causes:
Occurs when the body no longer can dissipate heat adequately
Dehydration
Over exercise
Extreme environmental conditions

HEAT EXHAUSTION

Symptoms
Weak/exhausted
Paleness cool/moist skin
Dizziness
Nausea
Vomiting
Fainting
Temperature (100 to 102 ° F)

Treatment
Rest
Water/Gatorade at 50%
Ice packs
Cool environment
Vomiting indicates sever exhaustion and IV fluids are required. Call 9-1-1 if the person vomits.

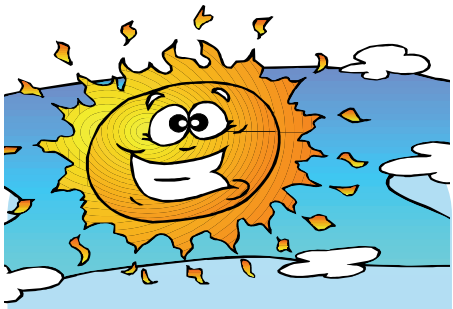
HEATSTROKE

Symptoms
Warm
Flushed skin
Do not sweat even after brisk exercise
Temperature (103 °F and up)
Delirious, unconscious, or having seizures

Treatment
Call 9-1-1
Do anything you can to reduce the temperature – Ice packs, water buckets

DESERT SANDS UNIFIED SCHOOL DISTRICT

HEAT ILLNESS PREVENTION
Guidelines for Employees



Things you should know about working in the heat.....

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 use 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 2-3 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 their 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 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.

When utilizing Emergency Services call 9-1-1, at some sites you must dial 9-9-1-1, and be prepared to provide clear directions to the location of the injured worker.

Cal-OSHA Heat Advisory:

When employees work in hot conditions, employers must take special precautions in order to prevent heat illness. Heat illness can progress to heat stroke and be fatal, especially when emergency treatment is delayed. An effective approach to heat illness is vital to protecting the lives of California Workers.

Information provided by Cal/OSHA. For more information, visit the Cal/OSHA website at www.dir.ca.gov

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Report all heat related injury and illness to your Supervisor and complete an Injury/Illness Report Form. Seek immediate medical attention

APPENDIX G

OSHA® QUICK CARD™

Protecting Workers from Heat Stress

Heat Illness

Exposure to heat can cause illness and death. The most serious heat illness is heat stroke. Other heat illnesses, such as heat exhaustion, heat cramps and heat rash, should also be avoided.

There are precautions that can be taken any time temperatures are high and the job involves physical work.

Risk Factors for Heat Illness

- High temperature and humidity, direct sun exposure, no breeze or wind
- Heavy physical labor
- No recent exposure to hot workplaces
- Low liquid intake
- Waterproof clothing

Symptoms of Heat Exhaustion

- Headache, dizziness, or fainting
- Weakness and wet skin
- Irritability or confusion
- Thirst, nausea, or vomiting

Symptoms of Heat Stroke

- May be confused, unable to think clearly, pass out, collapse, or have seizures (fits)
- May stop sweating

To Prevent Heat Illness:

- Establish a complete heat illness prevention program.
- Provide training about the hazards leading to heat stress and how to prevent them.
- Provide a lot of cool water to workers close to the work area. At least one pint of water per hour is needed.

U.S. Department of Labor

For more information:

OSHA® Occupational Safety and Health Administration

www.osha.gov (800) 321-OSHA (6742)

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