

HEAT ILLNESS PREVENTION

- AUTHORITY:** California Code of Regulations, Title 8, General Industry Safety Orders, Section 3395 Heat Illness Prevention in Outdoor Places of Employment, California Code of Regulations Title 8, General Industry Safety Orders, Section 3396 Heat Illness Prevention in Indoor Places of Employment, Section 3203, Injury and Illness Prevention Program
County of Orange Safety and Loss Prevention Manual 804
- RESCINDS:** New PMI
- FORMS:** Warning Signs and Symptoms of Heat Related Illnesses (Attachment A)
NOAA Heat Index Table (Attachment B)
- PURPOSE:** To establish the procedure for preventing, treating, and responding to outdoor and indoor heat related illness in accordance with Cal/OSHA requirements.

I. GENERAL INFORMATION

- A. The objective of this program is to promote employee awareness regarding heat illness symptoms, ways to prevent heat illness, and what to do if symptoms occur. This Procedure Manual Item (PMI) is applicable for staff and supervisors of staff who are exposed to temperatures or Heat Index (whichever is greater, see Attachment B) that may equal to or exceed:
1. Outdoor work environments: 80°F when employees are present.
 2. Indoor work environment: 82°F when employees are present.
- B. Staff with potential exposure to heat illness may include, but are not limited to the following:
1. Staff who participate in outdoor training (JCOCC, BPOC, Functional Fitness, Defensive Arming, etc.)
 2. Field Officers
 3. Deputy Probation Correctional Officer (DPCO)
 4. Warehouse workers
 5. Delivery drivers
 6. Kitchen Staff
 7. Other (all assignments where the supervisor foresees heat exposure)

II. PROCEDURE

A. Supervisor Responsibilities

1. Identify all employees with potential exposure to heat illness. Then, present or provide the contents of this Heat Illness Prevention PMI to identified employees.
2. Ensure identified employees receive training outlined in Section II, L. and emphasize the importance of water consumption.
3. Ensure identified employees are properly provisioned with potable water prior to the start of their work shift and/or provide guidance on replenishing water. Supervisors must arrange cool, fresh, water for employees to consume.
4. Monitor the weather in the area where your employees may be exposed to heat via the methods shown on Section II, D. Take additional precautions for personnel with additional environmental and personal risk factors as identified in Section B., 4.
5. Encourage staff to report heat illness hazards and symptoms.

B. Environmental and Personal Risk Factors for Heat Illness

1. Although air temperature and relative humidity influence the likelihood for heat illness, additional environmental and personal risk factors must also be considered, such as:
 - a. Radiant heat from the sun and other sources
 - b. Conductive heat sources such as the ground or stoves and ovens
 - c. Air movement
 - d. Workload severity and duration
 - e. Protective clothing or personal protective equipment worn by employees
2. Personal Risk Factors to consider for heat illness include:
 - a. An individual's age
 - b. Degree of acclimatization
 - c. Health
 - d. Water consumption
 - e. Alcohol consumption
 - f. Caffeine consumption

- g. Prescription medications that affect the body's water retention
 - h. Other physiological responses to heat
3. Additional precautions must be utilized to reduce the risk of heat related illness for personnel with additional environmental and personal risk factors. These may include but are not limited to:
- a. Heightened vigilance
 - b. Continuous communication
 - c. Using a buddy system
 - d. Additional rest breaks and hydration
 - e. Rotating tasks
 - f. Conducting tasks during cooler hours of the day
4. The active involvement of employees and their union representatives is critical in ensuring all factors are assessed and adequate controls are implemented as applicable. Active involvement is achieved in the following ways:
- a. Providing the employee and their union representatives a copy of this plan.
 - b. Training all staff that may be exposed to heat related hazards as mentioned in Section II, L. and soliciting feedback.
 - c. Verbal and/or written communication from supervisors to staff to encourage the reporting of factors which contribute to heat illness where staff may be exposed.

C. Monitoring Weather Reports and Indoor Heat

- 1. Supervisors who oversee employees with potential outdoor exposure to heat illness shall monitor the weather, including temperature and humidity, in order to communicate potential heat related risks to staff and/or determine if high heat procedures need to be implemented.
- 2. For personnel with risk of heat illness while working indoors, supervisors will collaborate with the Safety Unit to obtain an initial measurement of the indoor workspace. Initial measurements will be taken by a Wet-Bulb Globe Temperature (WBGT) device to determine the applicability of this plan to the workplace. The WBGT device used will be maintained by the manufacturer's recommendations.
- 3. Where outdoor conditions affect indoor temperatures:

- a. Initial measurements of temperature and humidity are taken when it is suspected that the work area may equal to or exceed 82°F.
 - b. If initial measurements did not equal to or exceed 82°F. Measurements will be taken again when the temperature is expected to exceed 10°F or more above the previous initial measurement during the work shift.
 - c. If determined that the temperature or heat index equals to or exceeds 82°F, measurements will be taken in the area continuously via the WBGT by a supervisor or designee.
 - d. Temperature or heat index measurements (whichever value is greater), date, time, and specific location of the measurements must be documented and sent to [REDACTED] at the end of the month. These records will be kept for 1 year.
4. The WBGT device will be maintained according to the manufacturer's recommendations.

D. Acclimatization

1. Supervisor's Acclimatization Responsibilities
 - a. Identify new staff and/or staff returning from an extended vacation or a period of absence.
 - b. Monitor the weather for projected heat waves, high heat events and/or days where high heat procedures are required.
 - c. Monitor staff at the beginning of a heat wave, high heat event or days where high heat procedures are required and continue monitoring for a period of 14 days.
 - d. Lower the intensity of the work during the 14 day "break-in" period by scheduling slower paced, less physically demanding work during the hot parts of the day and the heaviest work activities during the cooler parts of the day.
 - e. Ensure staff have access to shade, cool/fresh water, 10-minute "preventative cool-down rest period" breaks, and are aware of potential signs/symptoms of heat illness.
 - f. Continue to monitor and communicate with staff to ensure adequate acclimatization.

E. Water Consumption, Provision and Replenishment

1. Water Provisions
 - a. Employees shall have access to cool fresh water, free of charge. Employees can utilize water fountains, water dispensers and

bottled water located within all Probation Department field offices and institutions.

- b. Where water access to a fixed potable water source is not available (i.e. deployment to a remote location), water shall be provided in a sufficient quantity at the beginning of the shift. Sufficient quantity shall be one quart per hour (i.e. four cups per hour or 32 ounces) per employee, for the entire shift.
- c. Supervisors must provide information as to the location of drinking fountains, faucets, or bottled water to staff who are new to the work location or area of operation.
- d. Staff must contact their direct supervisor should they have any questions as to the provision of water and/or provision of water bottles.

2. Water Replenishment

- a. Employees who work in office environments are encouraged to utilize drinking fountains, faucets, or water dispensers located within their assigned work locations to replenish their personal water supply periodically during their shift, 15 minute or lunch breaks.
- b. Employees who work in an outdoor environment during a substantial portion of their work shift (i.e. Deputy Probation Officers (DPOs), DPCOs, Delivery Drivers, Warehouse Workers and/or special assignments) area also encouraged to utilize refillable, insulated containers to bring cool, fresh water with them into the field. To replenish water in the field, employees may use a variety of sources including but not limited to:
 - (1) Probation Department Facilities: Employees may, depending on hours of operation, visit and replenish their personal water supply at a Probation Department facility. A list of Probation Department facilities can be located on the Probation Department's public website under contacts and department locations. (<http://www.ocgov.com/gov/probation/contact/locations>)
 - (2) Hospital or Urgent Care Clinics
 - (3) Federal or City Government Offices (i.e. City Hall)
 - (4) Municipal Recreational Facilities (i.e. City of Regional Parks, Senior or Community Centers)
 - (5) Staff shall contact their direct supervisor should they have any questions or require assistance in replenishing their personal water supply in the field.

F. Access to Shade and Cool-Down Areas

1. Regardless of the temperature, employees suffering from heat illness or feel a break is necessary to prevent the development of heat illness, access to shade/cool-down area must be provided and encouraged. Shade may be provided by any natural or artificial means (trees, building over-hangs, portable canopies, etc.), provided it does not expose employees to unsafe or unhealthy conditions.
2. The interior of a vehicle may also be used for shade, as long as the air conditioning is running.
3. The nearest shaded area/cool-down area should be as close as possible, generally within a 2 ½ minute walk. In no case should it be located more than ¼ mile or a 5-minute walk away. Employees shall contact their supervisor for any questions, concerns for assistance in locating the closest shaded area.
4. Supervisors shall ensure that one or more areas for shade or cool-down is available in outdoor areas for staff. One or more cool-down areas must be available for indoor places of employment. The size of such areas shall be at least large enough to accommodate all staffs' recovery, rest, or meal periods and enough to ensure personnel can sit upright without making physical contact with one another.
5. Employees are to utilize cool-down rests without fear of reprisal and therefore are encouraged to utilize cool-down rests in the shade and/or cool-down areas when they feel the need to do so. If an individual takes a preventative cool-down rest:
 - a. Monitor and ask if they are experiencing symptoms of heat illness.
 - b. Encourage them to remain in the cool-down area
 - c. Do not have them back to work until any signs or symptoms of heat illness have abated and they have recovered for at least 5 minutes.

G. High Heat Procedures

1. This section applies to those who transport/ deliver materials (e.g., furniture, cabinets, etc.), construction materials, or agricultural products when temperatures equal or exceed 95°F. Activities only consisting of operating an air-conditioned vehicle and do not include loading or unloading are exempt from this section.
2. Classifications with potential exposure to heat illness are subject to high heat procedures. This includes but are not limited to: BPOC or JCOC staff participating in outdoor training, sworn staff who conduct business out in the field, delivery drivers, warehouse staff, personnel who work on loading docks, or any other assignments determined by the supervisor to have risk of heat illness.

H. Supervisors Responsibilities for High Heat

1. Ensure that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary.
2. Observe employees for alertness and signs or symptoms of heat illness. (See Attachment A for Signs and Symptoms of Heat Related Illnesses)
3. Remind employees throughout the work shift to drink plenty of water.
4. Provide one 10-minute “preventative cool-down rest period” every 2 hours – If working greater than an 8-hour work schedule, an additional rest period is required every 2 hours.
5. Closely supervise and observe employees for the first fourteen days of the employee’s outdoor deployment, unless the employee indicated at the time of hire (or transfer to a new assignment) that he or she has been doing similar outdoor work for at least ten of the past 30 days, for four or more hours per day.

I. Training and Instruction

1. Training will be provided to employees and their supervisors before beginning work that should be reasonably anticipated to result in exposure to the risk of heat illness.
2. Employee Training will include:
 - a. Environmental and personal risk factors, the added burden of heat load on the body caused by exertion, clothing, and personal protective equipment that leads to heat illness.
 - b. Compliance procedures and responsibilities for the employer and supervisors to provide water, shade, cool-down rests, access to first aid, and the employees right to first aid without retaliation.
 - c. The importance of frequent water consumption in small quantities (4 cups per hour) in hot work environments where employees are likely to be sweating more than usual while performing work.
 - d. The concept, importance, and methods of acclimatization in accordance with Acclimatization procedures.
 - e. The different types, common signs, symptoms, and the appropriate first aid and/or emergency responses to the different types of heat illness to include that heat illness may progress quickly from mild signs and symptoms to serious and life threatening illness.
 - f. The importance of direct and immediate reporting of signs and symptoms in themselves or co-workers by the employee to the employer/supervisor, or designee.

- g. The employer's procedures for responding to signs and symptoms of possible heat illness to include how emergency medical service is provided should they become necessary.
 - h. Procedures for contacting Emergency Medical Services, and if necessary, the transporting of employees to a point/location where they can be reached by emergency medical service providers.
 - i. The procedures ensuring that in the event of an emergency clear and concise communication of directions to the worksite is established and provided when needed to emergency responders to include the designation of available personnel to ensure emergency procedures are invoked when appropriate.
3. In addition to the Employee Training above, Supervisors will receive additional training which include:
- a. Procedures to follow to implement the provisions in this plan.
 - b. Procedures to follow when employee(s) exhibits signs or reports symptoms of possible heat illness, including emergency response procedures.
 - c. How to monitor weather reports and respond to hot weather advisories.

J. Reporting and Responding to Heat Illness

1. It is important to immediately report to your supervisor any signs or symptoms of heat illness in yourself or co-workers. When contacting dispatch or 911, provide a clear description of the location.
- a. The employee experiencing a potential heat related illness shall not be left alone. If appropriate, the employee shall:
 - (1) Be moved to a cooler location
 - (2) If conscious, be provided small amounts of cool, fresh water to drink and/or have a wet cloth applied to the skin to increase evaporative cooling.
 - (3) If applicable, loosen or remove heavy clothing that restricts evaporative cooling.
 - (4) If medical attention is required, emergency medical treatment shall be requested by notifying dispatch or dialing 911. Follow the Medical Emergency procedures as specified on the site Emergency Action Plan as applicable.
 - (5) If the incident requires Transport to a hospital and/or requires hospitalization, please follow the Reporting of 911 Calls and Hospital Transports of Probation Employees form, found on Prob-Net.

- (6) Supervisory staff shall complete and submit the Workers' Compensation Employee packet. A copy of the Workers' Compensation packet can be found on Prob-Net.

REFERENCES:

Procedure:	1-3-304	Workers' Compensation (Employee Injuries, Accidents, Blood/Body Fluids Exposure)
	1-4-113	Injury Illness Prevention Program
Policy:	G-8	Injuries and Medical Emergencies

Attachments

K. Mitchell

APPROVED BY:

Warning Signs and Symptoms of Heat Related Illnesses

Heat-Related Illnesses		
Heat Illness	What to Look For	What to Do
Heat Stroke	<ul style="list-style-type: none"> • High body temperature (103°F or higher) • Hot, red, dry or damp skin • Fast, strong pulse • Headache • Dizziness • Nausea • Confusion • Losing consciousness 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Heavy sweating • Cold, pale and clammy skin • Fast, weak pulse • Nausea or vomiting • Muscle cramps • Tiredness or weakness • Dizziness • Headache • Fainting 	<ul style="list-style-type: none"> • Move to a cool place • Loosen your clothes • Put cool, wet clothes on your body or take a cool bath • Sip water <p>Get medical help right away if:</p> <ul style="list-style-type: none"> • You are throwing up • Your symptoms get worse • Your symptoms last longer than 1 hour
Heat Cramps	<ul style="list-style-type: none"> • Heavy sweating during intense exercise • Muscle pain or spasms 	<ul style="list-style-type: none"> • 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 <p>Get medical help right away if:</p> <ul style="list-style-type: none"> • Cramps last longer than 1 hour • You're on a low-sodium diet • You have heart problems
Sunburn	<ul style="list-style-type: none"> • Painful, red and warm skin • Blisters on the skin 	<ul style="list-style-type: none"> • Stay out of the sun until your sunburn heals • Put cool cloths on sunburn areas or take a cool bath • Put moisturizing lotion on sunburned areas • Do not break blisters
Heat Rash	<ul style="list-style-type: none"> • Red clusters of small blisters that look like pimples on the skin (usually on the neck, chest, groin, or in elbow creases) 	<ul style="list-style-type: none"> • Stay in a cool, dry place • Keep the rash dry • Use powder (like baby powder) to soothe the rash

Remember, water, rest, shade and acclimatization are keys to preventing heat related illnesses.

National Oceanic and Atmospheric Association (NOAA) Heat Index Table

Heat index example (reference Table 1): If the air temperature is 96°F the relative humidity is 65%, the heat index (how hot it feels) is 121°F.

NWS Heat Index		Temperature (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
Relative Humidity (%)	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	128	136					
	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
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