

California Baptist university, 8432 Magnolia Avenue, Riverside, CA 92504

Heat Illness Prevention Plan

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Revision Log*				
Rev. No.	Rev. Date	Revision Summary	Revised by	Approved by
0	2016	Initial Draft	Timothy M Keifer EHS Coordinator	Director, Facilitates & Planning Services
1	2022	Updated Draft	Ivan Pedraza EHS Coordinator	Director, Facilitates & Planning Services

*The written plan will be reviewed annually for accuracy and completeness. The written plan and its elements will be updated in the following situations:

1. When there is reason to believe that provisions of the program may not protect employees.
2. When new processes and/or technologies are introduced.
3. When requirements have changed in accordance with applicable standards, codes and regulations.

When any other elements are changed.

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Plan

The purpose of this plan is to ensure that all California Baptist University employees are protected while working in areas when environmental risk factors for heat illness are present. This plan provides CBU employees with knowledge of heat illness symptoms, methods to prevent heat illness, and procedures to follow should symptoms occur. This plan is designed to supplement the Injury and Illness Prevention Program (IIPP) as well as meet §3395 (Cal OSHA) standards.

Scope

The Heat Illness Prevention Plan applies to all University employees that may be at risk of heat illness. This includes all indoor and workspaces or areas where environmental risk factors for heat illness are present.

Definitions

Acclimatization: The temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work, for at least two hours per day in the heat.

Heat Illness: A serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

Environmental Risk Factors for Heat Illness: Working conditions which create the possibility that heat illness could occur; including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing, and personal protective equipment (PPE) worn by employees.

Personal Risk Factors for Heat Illness: Factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention ability or other physiological responses to heat.

Potable: A liquid that is suitable and safe to drink.

Preventative Recovery Period: A period of at least five minutes, used to recover from the heat in order to prevent further heat illness.

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Shade: Blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when an object does not cast a shadow in the area of blocked sunlight.

Responsibilities

Supervisors

- Identify and maintain records of all employees that are required to work where potential heat illness could occur.
- Schedule outdoor or hot area tasks for early in the day or when temperatures are lower.
- Take extra precautions for teams wearing PPE and face coverings by reducing interval times between breaks and increasing visits to shade.
- Ensure that adequate water and shade are available at the job site when the environmental risk factors for heat illness are present.
- Encourage employees to drink water frequently.
- Call 911 to request emergency medical services in the event medical assistance is required.
- Call 343-4311 (Department of Safety Services) to inform them that 911 has been contacted for emergency medical services.

Employees

- Awareness and compliance with heat illness prevention while performing assigned duties.
- Take extra precautions while wearing PPE and face coverings by reducing the interval time between breaks and visits to shade.
- Drink adequate amounts of hydrating fluids when the environmental risk factors for heat illness are present.
- Ensure access to a shaded area is available to recover from heat related symptoms.
- Request supervisor to schedule hot area or outdoor tasks early in the day or when temperatures are lower.
- Inform supervisor if adequate shade and/or water are not present.
- Report symptoms of heat related illness promptly to supervisor.
- Call 911 to request emergency medical services in the event medical assistance is required.

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- Call 343-4311 (Department of Safety Services) to inform them that 911 has been contacted for emergency medical services.

Plan Components

The following elements of the Heat Illness Prevention Plan provides specific information for departments and supervisor compliance with Cal OSHA standards:

Provision of Water

Employers are responsible to ensure that clean and cool potable water is readily available to employees.

Where unlimited drinking water from a plumbed system is not immediately available, supervisors must provide enough water for every employee to be able to drink one quart of water per hour for the entire shift (at least 2 gallons per employee for an 8-hour shift). Smaller quantities of water may be provided if there are effective procedures for replenishing the water supply during the shift as needed.

Cal OSHA standards require that supervisors encourage employees to drink frequently. Thirst is not an effective indicator of a person's need for water. It is recommended that individuals drink one quart of water per hour when working in hot environments.

Departments should take one or more of the following steps to ensure employees have access to drinking water:

1. Provide access to drinking fountains,
2. Supply water cooler/dispenser and single serve cups, or,
3. Supply sealed one-time use water containers.

Drinking water and water dispensers shall meet the following requirements:

- All sources of drinking water shall be maintained in a clean and sanitary condition.
- Drinking water must always be kept cool. When temperatures exceed 90°F it is recommended that ice be provided to keep water cool.
- Any container used to store or dispense drinking water should be clearly marked of its contents and not be used for any other purpose.
- Potable drinking water dispensers used to provide water to more than one person shall be equipped with a faucet or spigot.
- The use of shared cups, glasses, or other drinking vessels is prohibited.

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- Non-potable water should not be used for drinking.

Outlets for non-potable water should be posted in a manner understandable to all employees that the water is unsafe for drinking

Access to Shade

Supervisors are responsible for ensuring that employees have access to a shaded area. Shaded areas should be large enough to accommodate 25% of the employees on a shift and allow employees to sit in the shade without touching each other.

The nearest shaded area must be as close as practicable. Usually this will mean that shade must be reachable within a 2 1/2-minute walk, but in no case more than 1/4-mile or a five-minute walk away, whichever is shorter.

Canopies, umbrellas, or other temporary structures may be used to provide shade, provided they block direct sunlight. Trees and dense vines can shade if the canopy of the trees is sufficiently dense to provide substantially complete blockage of direct sunlight. The interior of a vehicle may be used to provide shade if the vehicle is airconditioned and the air conditioner is operating.

High Heat Procedures

The following procedures will be implemented when the temperature equals or exceeds 95 degrees Fahrenheit. These procedures shall include:

- Supervisors will ensure effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary. An electronic device such as a cell phone, radio, or text messaging device, may be used for this purpose only if reception in the area is reliable.
- Supervisors will observe employees for alertness and signs or symptoms of heat illness. The employer shall ensure effective employee observation/monitoring by implementing one or more of the following:

(A) Supervisor or designee observation of 20 or fewer employees.

(B) Buddy system.

(C) Regular communication with sole employee such as by radio or cellular phone.

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- One or more designated employee(s) at each worksite as authorized, is to call for emergency medical services and allow for other employees to call for emergency services when no designated employee is available.
- Reminding employees throughout the work shift to drink plenty of water.

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.

Preventative Recovery Periods

The purpose of the recovery period is prevention of heat illness. The supervisor is required to provide access to shade for employees who believe they need preventive recovery period from the effects of heat and for any who exhibit indications of heat illness.

Access to shade must always be allowed, and employees must be allowed to remain in the shade for at least five minutes. If employees are wearing PPE, including but not limited to respirators, face coverings, disposable coveralls, backpack vacuums, arc flash suits, and welding gear, they need to be allowed more frequent breaks to prevent overheating. These breaks may need to be longer to allow the employees to remove PPE to cool more completely. In addition, activities in hot locations, like in tunnels, some welding or pipe soldering operations, will require more frequent breaks where employees need to leave the workspace to a cooler area often.

The purpose of the preventive recovery period is to reduce heat stress on the employee. The preventive recovery period is not a substitute for medical treatment.

Emergency Response Procedures

If an employee shows any symptoms of heat illness, first-aid procedures should be initiated without delay. Common early signs and symptoms of heat illness include headache, muscle cramps, and unusual fatigue. However, progression to more serious illness can be rapid, and can include loss of consciousness, seizures, mental confusion, unusual behavior, nausea or vomiting, hot dry skin, or unusually profuse sweating.

An employee exhibiting any of the above-mentioned symptoms requires immediate attention. Even the initial symptoms may indicate serious heat exposure. If medical personnel are not available on site,

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and serious heat illness is suspected, emergency medical personnel should be immediately contacted, and first aid measures taken. No employee with symptoms of possible serious heat illness should be left unattended or sent home without medical assessment and authorization.

Acclimatization

Supervisors are required to acclimatize employees and allow time to adapt when temperatures rise suddenly and employees' risk for heat illness increases. Acclimatization may also be required for new employees, employees working at temperatures to which they have not been exposed for several weeks or longer, or employees assigned to new jobs in hot environments.

Generally, about four to fourteen days of daily heat exposure is needed for acclimatization. Heat acclimatization requires a minimum daily heat exposure of about two hours of work. Gradually increase the length of work each day until an appropriate schedule adapted to the required activity level for the work environment is achieved. This will allow the employee to acclimate to conditions of heat while reducing the risk of heat illness.

It should be noted that new employees are among those most at risk of suffering the consequences of inadequate acclimatization. Supervisors with new employees should be extra-vigilant during the acclimatization period and respond immediately to signs and symptoms of possible heat illness.

Training.

Effective training in the following topics shall be provided to each supervisor before the employees begins work that should reasonably be anticipated to result in exposure to the risk of heat illness:

- A. The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing, and personal protective equipment.
- B. The employer's responsibility to provide water, shade, cool-down rests, and access to first aid as well as the employees' right to exercise their rights under this standard without retaliation.
- C. The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot, and employees are likely to be sweating more than usual in the performance of their duties.

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- D. The concept, importance, and methods of acclimatization.
- E. The different types of heat illness, the common signs, and symptoms of heat illness, and appropriate first aid and/or emergency responses to the different types of heat illness, and in addition, that heat illness may progress quickly from mild symptoms and signs to serious and life-threatening illness.
- F. The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms, or signs of heat illness in themselves, or in co-workers.
- G. Responding to signs or symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.
- H. Contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.
- I. Ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.
- J. The procedures the supervisor is to follow to implement the applicable provisions in this section.
- K. The procedures the supervisor is to follow when an employee exhibits signs or reports symptoms consistent with possible heat illness, including emergency response procedures.
- L. How to monitor weather reports and how to respond to hot weather advisories.

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Fluid Replacement Guide

Fluid Replacement Guide						
Temperature Index °F	Comfortable Work		Moderate Work		Intensive Work	
	Work/Rest (minutes)	Fluid Intake (quarts/hour)	Work/Rest	Fluid Intake	Work/Rest	Fluid Intake
78-81.9	NL	0.5	NL	0.75	40/20	1
82-84.9	NL	0.5	50/10	1	30/30	1.25
85-87.9	NL	0.75	40/20	1	30/30	1.25
88-89.9	NL	0.75	30/30	1.25	20/40	1.25
>90	50/10	1	20/40	1.25	10/50	1.5

*NL =no limit
Rest = minimal physical activity (sitting or standing) in shade if possible

**CAUTION: Hourly fluid intake should not exceed 1.5 quarts
Daily fluid intake should not exceed 12 quarts**

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Heat Exhaustion vs. Heat Stroke



The infographic features a central illustration of a human figure split vertically. The left side is associated with Heat Stroke, showing a thermometer with '104' and a speech bubble with question marks. The right side is associated with Heat Exhaustion, showing a person sweating. The background is a gradient of orange and red.

HEAT STROKE	VS.	HEAT EXHAUSTION
SYMPTOMS		SYMPTOMS
Body temperature above 104°		Excessive sweating
Pounding headache		Vision changes
Lack of sweat		Nausea, vomiting, or diarrhea
Hot, red skin		Muscle or abdominal cramps
Loss of consciousness		Dizziness
Confusion		Extreme fatigue
Rapid heartbeat		Fainting
WHAT TO DO		WHAT TO DO
☀ Move to shaded area or indoors		☀ Give cool fluids
☀ Soak in a cold or ice-water bath, or spray with cool water and fan		☀ Apply cool, wet towels or ice packs to neck, forehead, and under arms
☀ Do not give oral fluids if confused		☀ Move to cooled off room and rest
☀ Seek emergency medical care		☀ Remove some clothing

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