**Heat Illness Prevention**

Working in hot outdoor environments can result in heat illness, which left untreated can rapidly lead to serious health-threatening situations.

To prevent heat illness, SU personnel including but not limited to field researchers, grounds/ facility maintenance staff and their supervisors are to:

* Understand the environmental and personal risk factors for heat illness
* Take the necessary steps for preventing heat illness
* Be able to recognize the early signs/ symptoms of heat illness
* Know the University’s established emergency response procedures for heat illness

**Basics of Heat Illness:**

**Heat Illness Signs/ Symptoms**

Recognizing symptoms of heat stress early is paramount in preventing more severe illness. Having the knowledge will enable a supervisor/designee to take the proper emergency response steps. Some are listed below:

1. Early signs/ symptoms of heat illness include:
* Dehydration
* Headache
* Muscle cramps
* Unusual fatigue
1. Progression to serious illness such as heat exhaustion and heat stroke can be fast, and is indicated by symptoms including:
* Cool, moist skin
* Dizziness, light headedness
* Nausea or vomiting
* Fast heartbeat
* Confusion or unusual behavior
* Excessive sweating OR red, hot, dry skin/face
* Convulsions or seizures
* Fainting

**IMPORTANT: For signs/symptoms of heat illness, immediately give first aid or emergency response described below. Anyone with symptoms must never be sent home or left unattended without medical evaluation.**

**Workplace Emergency Procedures**

If any symptoms of serious illness are present, and first aid trained personnel are not immediately available to make an assessment, immediately call 911 (or 9-911 from a campus phone) or transport employee to the Stanford Hospital Emergency Room. While waiting for emergency help:

* Get victim to a cool environment
* Loosen or remove excess clothing
* Provide cool drinking water if person is conscious and not nauseous
* Fan and mist the person with water
* Apply a water-soaked towel (or ice pack wrapped in a towel) to head and ice packs to the armpits.

FOLLOW-UP: Any employee who is evaluated for heat illness in the emergency room must follow-up with the Stanford University Occupational Health Center (650) 725-5308 on the next business day and be medically cleared before returning to work.

**Risk factors:**

1. **Personal risk factors** for heat illness include (but are not limited to):
* Age
* Medical Conditions
* Alcohol/Caffeine Consumption
* Water Consumption
* Degree of Acclimatization
1. **Environmental risk factors** for heat illness include (but are not limited to):
* Air Temperature
* Relative Humidity
* Air Movement
* Radiant/Conductive Heat
* Work Intensity
* Clothing

**Preventing Heat Illness- General Requirements**

Supervisors shall ensure the specific measures below to prevent heat illness amongst their staff while also ensuring compliance with Cal/OSHA’s regulatory requirements for Heat Illness Prevention ([Title 8 CCR 3395](https://www.dir.ca.gov/title8/3395.html)).

1. ***Heat Illness Prevention Training***

Employees and supervisors shall be provided training prior to assigning and beginning outside work in warmer weather. This safety training shall cover:

1. The general information in this document, and
2. Department-specific procedures
* Departments shall document local heat illness prevention procedures which shall be made available to employees. Refer to **Appendix A** below or contact EH&S at (650) 723-0448 for guidance on creating these procedures.

Supplemental training materials can be found at <https://ehs.stanford.edu/wp-content/uploads/Heat-Illness-Prevention-Training-20170328.pdf>. The training shall be documented - refer to **Appendix B**. Contact EH&S at (650) 723-0448 for additional training assistance.

1. ***Provision of Drinking Water***

A sufficient quantity of fresh and suitably cool drinking water shall be readily accessible to allow every working person to drink at least four cups per hour. Personnel shall be encouraged to maintain regular fluid intake.

1. ***Work Planning and Supervision***
	1. Assess conditions-- Prior to assigning outdoor work during warm periods, check weather forecasts (<http://www.weather.gov/>) and the current weather (<https://weather.stanford.edu/>) to assess the potential for heat stress/ illness. Note: for unseasonably humid days, the heat load will be greater.

For warmer periods and especially during worker acclimatization, recommend to:

* Schedule outdoor work during cooler parts of the day
* Plan a staff rotation for strenuous work tasks
* Advise staff to wear lighter, loose-fitting clothing and wide-brimmed hats
	1. Worker acclimatization-- The body needs a certain period of time to adjust to working in heat and humidity, especially when heavy physical exertion is required. Typically, people can adapt to significant increases in heat within 4 – 14 days of a progressively increasing workload.  *NOTE: Acclimatization is especially important for new employees, those returning to work after a prolonged absence or recent illness, or for those recently moving from a cooler climate.*
	2. For outdoor temperatures of **80°F** or warmer,supervisors shall ensure**:**
1. Adequate shade is present for employees to take their rest/meal breaks at or nearby their work area
2. To encourage employees to take a preventative cool-down rest in the shade when they feel it is needed to prevent overheating. Workers taking a cool-down rest shall:
* Be monitored and asked if they are feeling heat illness symptoms,
* Take at least 5 minutes to rest in the shade, AND
* Not be ordered back to work until any signs/symptoms of heat illness are gone
1. Provision of effective means for personnel to contact supervisor and emergency services (i.e., cell phones, walkie-talkies)
	1. For outdoor temperatures of **95°F** or warmer,supervisors shall ensure all of the above plus the following**:**
		1. Regular monitoring of employees for alertness and signs/symptoms of heat illness (either direct supervision, buddy system, phone/radio communication, and/or other means of observation).
		2. Reminders to employees to drink plenty of water throughout the workday
		3. Pre-shift meetings prior to start of daily work to remind workers of the required monitoring described above, encouragement to drink plenty of water, and the right to take cool down rest breaks as needed.

***Contact SU EH&S at (650) 723-0448 for further information on heat illness prevention.***

**Appendix A**

**Heat Illness Prevention: Department Procedures**

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| **Department/Group Name:** |  |
| **Contact Person:** |  |
| **Contact Telephone Number:** |  |
| **Prepared by:** |  |
| **Date:**  |  |

Per Cal/OSHA’s Heat Illness Prevention requirement (Title 8 CCR 3395), SU departments shall provide written local procedures for preventing workplace heat illness. Use the template below to document these procedures.

**DIRECTIONS:**

1. Carefully review the standard procedures (in italics) and include further detail on how these safety measures will be implemented locally.
2. Ensure employees are trained on local procedures (in addition to the general heat illness guidance above).
3. Keep these written procedures accessible for employee review.

Contact SU EH&S at (650) 723-0448 for additional assistance.

Note: These procedures provide the minimal steps applicable to most outdoor work settings and are essential to reducing the incidence of heat related illnesses. In working environments with a higher risk for heat illness (e.g. during a heat wave, or other severe working or environmental conditions), it is the department’s duty to exercise greater caution and additional protective measures beyond what is listed in this document, as needed to protect their employees.

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| **I. HEAT ILLNESS PREVENTION PROCEDURES** |
| **A) Heat Illness Prevention Training** |
| * ***Supervisors and employees are to be provided heat illness prevention training prior to assigning or beginning outside work in warmer weather. For training assistance, EH&S can be contacted at (650) 723-0448.***
 |
| **B) Provision of water and shade** |
| *Supervisor ensure:*1. *Fresh and suitably cool water is provided and readily accessible to employees while working-- at least two quarts per employee at the start of every shift- OR- employees access to water coolers/drinking fountains*
2. *Water containers are monitored and, as needed, the water supply is replenished.*
3. *Employees are regularly reminded (e.g., at morning meetings) to drink water frequently.*
4. *Shade shall be made available (regardless of temperature) and provided within a timely manner upon employee request.*

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| **C) When outdoor temperatures are greater than 80°F:**  |
| 1. ***Adequate shade is provided for all employees during their rest/lunch periods:***

*Shade can consist of portable shade structures, buildings w/ mechanical cooling, air-conditioned vehicles, and sufficient shadows from trees/buildings. NOTE: Where not safe or feasible to provide shade at or near the worksite for on a continuous basis, supervisor shall document why shade cannot be provided and what alternative steps will be taken to provide other cooling measure(s) having equivalent protection (e.g., cooling vests, misting machines, etc.). Retain records for one year.*Click here to enter text.1. ***Cool-down rests in the shade are allowed and encouraged:***
	1. *Employees are encouraged to take a cool-down rest in the shade when they feel it is needed to prevent overheating.*
	2. *Workers taking a cool-down rest are:*
		* *Monitored and asked if they feel any symptoms of heat illness,*
		* *Provided first aid and emergency response (see Section II) if heat illness symptoms are indicated*
		* *Encouraged to rest in the shade, AND*
		* *Not ordered back to work until any signs/symptoms of heat illness are gone. Employee shall remain resting for at least 5 minutes, and is not to return to work tasks until any signs/symptoms of heat illness are gone.*

Click here to enter text.1. ***Employee heat acclimatization is ensured:***
	1. *During a heatwave- when the temperature is at least 10 degrees warmer than the average daytime temperature of the previous 5 days:*
		* *Supervisor/designee closely observes employees for discomfort or possible signs of heat illness*
	2. *When an employee is either- (1) Newly assigned to work in warm weather; or (2) Returning to work after a prolonged absence/illness:*
		* *Supervisor/designee closely observes any employee for the first 14 days*
	3. *During worker acclimatization:*
		* *Work intensity is moderated as needed to allow gradual adjustment to increased heat loads.*
		* *In lieu of direct supervisor observation, a buddy system may be arranged, where employees monitor and immediately report any observed signs of possible heat illness*

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| **D) When outdoor temperatures are ≥ 95°F:** |
| 1. ***All prevention procedures described in Part C above are implemented.***
2. ***Effective means of communication (i.e., cell phones, walkie-talkies, etc.) are provided to allow work crews to contact emergency services and supervisor***

Click here to enter text.1. ***Staff are regularly monitored for alertness and signs/symptoms of heat illness (via direct observation, mandatory buddy system, regular phone/radio communication, and/or other means of observation).***

Click here to enter text.*(Continued on next page)*1. ***Staff are regularly reminded to drink plenty of water***

Click here to enter text.1. ***Pre-shift meetings prior to the start of daily work to review:***
	1. *Reminders to:*
		* *Drink plenty of water*
		* *Take cool-down rest breaks as needed*
	2. *How employees are being regularly monitored*
	3. *On-site emergency response/communications*

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| **II. EMERGENCY RESPONSE PROCEDURES** |
| **A) Stanford University’s procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.** |
| * ***Immediately call 911 (or 9-911 from on-campus phone).***
* ***Transport affected employee to Stanford Hospital Emergency Room.***

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| **B) Department’s procedures for ensuring that, in the event of an emergency, clear and precise directions to the worksite can and will be provided as needed to emergency responders.** |
| *Supervisors ensure that work crews are provided (on paper or other means) the exact location of the worksite (e.g., street address, building name) and can give clear, precise directions to emergency responders to avoid delay of emergency medical services.*Click here to enter text. |

**Appendix B**

**Heat Illness Prevention: Group Training Documentation**

Per Cal/OSHA and University policy, any health and safety training provided shall be documented. Training records shall be maintained for at least one year. Contact EH&S at (650) 723-0448 or visit [ehs.stanford.edu](http://ehs.stanford.edu/) for any health and safety training questions.

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| **Title of Training: Heat Illness Prevention for (circle one): Supervisors Employees** | **Date:**  |
| **Location:**  | **Training Time/Duration:**  |
| **Reason for Training: Regulatory and awareness**  |
| **Regulation Required: 8 CCR 3395** |
| **Summary of Topics Covered: Heat illness risk factors, preventive measures (general and department-specific), recognition of signs/symptoms, and emergency response** |
| **Training Aids Used:**  |
| **Instructor (name and department):**  |
| **Instructor’s Signature:**  | **Date:**  |

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|  | **Printed Name** **(please print legibly)** | **Signature** | **SU ID Number** | **Department** |
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(As needed, insert more rows)