C. A. S. H.
County of Alameda Safety and Health

SAMPLE

HEAT ILLNESS PREVENTION PROGRAM
Section 1-152-00

PREVENTING HEAT ILLNESS

The Alameda County (name) Agency/Department recognizes that there are times when employees are subjected to working in outdoor places of employment when the environment risk factors for heat illness are present.

This safety program shall include work site assessments and measures to be taken to prevent heat illness, including training of supervisors and employees.

The following skills are necessary for employees covered by this program:

1. Ability to identify the risk factors, signs, and symptoms of heat illness.
2. Ability to understand and implement control measures that reduce the likelihood of heat illness.
3. Understanding procedures to follow in case there is an incidence of heat illness.
4. Knowledge of the Heat Illness Prevention Program components.

RESPONSIBILITY

Supervisors shall be responsible for the day-to-day implementation of the Heat Illness Prevention Program. Employees shall be responsible for maintaining their level of awareness regarding heat illness prevention. This includes all items outlined under TRAINING REQUIREMENTS.

The Agency/Department Safety Coordinator is the Heat Illness Prevention Program Administrator and shall be responsible for administering, maintaining, and evaluating the overall program on a periodic basis, and maintaining records.

WORKPLACE ASSESSMENT

Supervisors shall make periodic assessments of work site locations to minimize the effects of exposure to excessive heat. Assessments shall be made if it is the first time the employees have worked at that particular site; if climatic conditions change significantly; other environmental or physical conditions change (e.g., personal protection equipment (PPE) requirement); or if employee(s) exhibit signs or symptoms of heat related illness or heat illness occurs. Work site locations include fixed facilities, work projects, emergency related activities and special assignments. The following factors shall be assessed:

- Environmental conditions (temperature and relative humidity)
- Physical load imposed by job related tools and equipment
- Level and duration of work
- Exposure to radiant and conductive heat
- Work/rest breaks
- Rest areas
- Personal adaptation (acclimatization)
- Availability of potable water

PROGRAM REQUIREMENTS & MEASURES TO PREVENT HEAT ILLNESS

Supervisors shall utilize appropriate control measures to prevent and/or minimize excessive heat exposures. The following control measures shall be implemented:

Personal Monitoring

Supervisors shall observe, encourage and train employees to be attentive of their heart rate, body temperature and the physical and mental symptoms of heat related stress and illness. Employees shall be responsible for monitoring and assessing their own physical and mental functions and recognizing the symptoms of heat related stress and illness and taking reasonable appropriate actions, including reporting any concerns to their Supervisors.

Acclimatization

Acclimatization shall involve exposing employees to heat stress for progressively longer periods in preparation for work in a hot environment. An employee's level of acclimatization shall be taken into account when making work assignments. Recognizing that it is not possible for all employees to be fully acclimatized for all activities, managers and supervisors shall take into account individual differences in regard to heat stress tolerance. This shall include recognizing the possibility of a reduced heat stress tolerance in employees who have recently arrived from a cooler environment.

Hydration & Provisions of Water

Water replacement is essential during prolonged work in the heat. During such work, it is common to lose one to two quarts of water an hour from perspiration and breathing. These fluids must be replaced. Drinking water before working, while working and during breaks is the best way to prevent dehydration and replenish fluids.

Water shall be provided in sufficient quantity at the beginning of the work shift to provide **one quart (four cups) per employee per hour** for drinking for the entire shift.

Supervisors shall be responsible for providing sufficient quantities of potable water prior to, during, and immediately after work in a heated environment. It is the employee's responsibility to remain hydrated.

Employees shall have access to clean drinking water. Any container used to store or dispense water shall be clearly marked as to its contents and shall not be used for any other purpose. The containers shall be capable of being tightly closed or designed so that sanitary conditions are maintained.

Portable containers used to dispense drinking water shall be equipped with a faucet or drinking fountain, shall be capable of being tightly closed and shall be otherwise designed, constructed and serviced so that sanitary conditions are maintained. Water shall not be dipped from containers.

Where drinking fountains are not provided, single-service cups (to be used but once) shall be supplied. Where single-service cups are supplied, a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

The frequent drinking of water shall be encouraged.

Shade

Employees suffering from heat illness or who believe that a preventative recovery period is needed, shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes. Such access to shade shall be permitted at all times.

Rest Breaks

Employees shall be provided adequate rest during the course of work, preferably in shaded areas. Non-emergency activities shall have a work/rest cycle that includes breaks in shaded areas and of sufficient duration to help lower core body temperatures.

TRAINING REQUIREMENTS

All employees shall be provided training on the following components of heat related illness:

A) The environmental and personal risk factors for heat illness
B) The employer's procedures for identifying, evaluating, and controlling exposures to the environmental and personal risk factors for heat illness
C) The importance of frequent consumption of small quantities of water, up to 4 cups per hour, under extreme conditions of work and heat
D) The importance of acclimatization
E) The different types of heat illness and the common signs and symptoms of heat illness
F) The importance 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) The employer's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary

H) 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
I) How to provide clear and precise directions to the work site

NOTE: It is very important that all employees understand the training. If you have any questions, please contact the Supervisor.

Prior to assignment to supervision of employees working in the heat, training on the following topics shall be provided:

A) The information in items A) through I) above
B) The procedures the supervisor is to follow to implement the applicable provisions of this Heat Illness Prevention Program
C) The procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures

DEFINITIONS

Acclimatization - The biological process through which our bodies adapt to the environment; basically getting used to the heat. 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 (fainting), and heat stroke.

Environmental Risk Factors For Heat Illness - Working conditions that 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 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 affects the body's water retention or other physiological responses to heat.

Preventative Recovery Period - A period of time needed to recover from the heat in order to prevent heat illness.

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 is placed in the area of blocked sunlight the object does not cast a shadow. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

ATTACHMENT A

ENVIRONMENTAL AND PERSONAL RISK FACTORS FOR HEAT ILLNESS

Environmental Risk Factors for Heat Illness – a working condition that 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 worn by employees.

Personal Risk Factors for Heat Illness – these are 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 or other physiological responses to heat.

PREVENTING HEAT-RELATED HEALTH PROBLEMS

There are means to preventing heat emergencies. Familiarize yourself with the following procedures to ensure that you or those around you do not become a statistic to heat stress.

Acclimatization - accustom yourself to the weather prior to long durations of physical activity.

Maintain Body Fluids - Fluid intake must be maintained throughout the course of physical activity. Do not rely on thirst as an indicator of dehydration because your body loses water faster than you realize. Alcohol should be avoided because it is a diuretic, which increases dehydration and can interfere with heat loss.

Proper Diet – Eat light and stay away from heavy foods. They increase metabolic heat production and also increase water loss. Eat smaller, well-balanced meals more often.

Dress Light – Lightweight, light-colored clothing reflects heat and sunlight and helps your body maintain normal temperatures.

If job tasks permit in a way that does not compromise other safety and health concerns: Wear loose-fitting clothes such as cotton which lets air move over your body. Wide brimmed hats should also be worn.

ATTACHMENT B

HEAT RELATED HEALTH PROBLEMS

Read the following conditions so that you may be familiar with their symptoms in order to protect yourself and others in the event of a heat related emergency.

HEAT RASH - also known as Prickly Heat occurs in hot, humid environments where sweat can't easily evaporate from the skin. This condition produces a rash, which in some cases causes severe pain.
First Aid - The procedures to prevent or minimize this condition are to rest frequently in cool places and bath regularly ensuring to thoroughly dry the skin.

HEAT CRAMPS are painful muscle spasms that result from the loss of salt and electrolytes due to excessive sweating. The cramps will usually affect the stomach, the arms and legs.
First Aid - This condition can be treated by drinking fluids containing electrolytes such as calcium, sodium and potassium. This condition usually precedes heat exhaustion.

HEAT EXHAUSTION is a state brought on by the loss of fluids lost during excessive sweating. Individuals with heat exhaustion still sweat, but they experience extreme weakness and may even collapse. They may experience nausea and headache. Their skin is clammy and moist, their complexion is usually pale and the body temperature is usually normal or slightly higher.
First Aid - This condition is best treated by taking the patient to a cool place, applying cool compresses, elevating the feet and giving the individual plenty of fluids.

HEAT STROKE is a severe medical emergency that could result in death. Heat stroke results when the body's core temperature gets too high and the body is no longer able to cool itself. An individual suffering from heat stroke will have hot and dry skin, their pulse will be high and their blood pressure will fall. The person may have irrational behavior, may be in a state of confusion or may become comatose. The body core temperature may exceed 104 degrees F. If not treated promptly the core temperature will rise too high and death will follow.
First Aid - This condition must be treated by immediately cooling the victim's body with water or wrapping them in cool wet sheets. Immediately seek medical attention.

ATTACHMENT C

EMERGENCY PROCEDURES

In case of fainting, heat stroke, or other safety/health emergency

Call (*emergency response number*)

Be prepared to give clear, concise, and accurate directions to the emergency location

Provide appropriate first aid (See ATTACHMENT B)