Manhattan Beach Police

Training Bulletin

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CHIEF OF POLICE

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Heat-Related Illness

Cal OSHA has passed emergency regulations requiring all employers to educate employees likely to be exposed to heat illness how to prevent heat illness, risk factors that could cause illness, symptoms associated with heat illness, and how to respond. Employers are also required to make water available to workers at all times and provide access to shade.

The Manhattan Beach Police Department has made water available to all employees in several locations throughout the station, including the Front Desk trailer, break room, Detectives bureau, Traffic office, and Administration office. If employees are assigned to a fixed location where water is not readily available, the supervisor shall be notified and water will be provided at their location.

What is Heat-Related Illness and Why is it Dangerous?

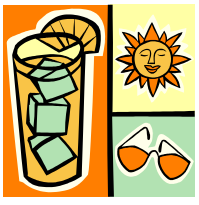
Heat-Related Illness occurs when increased blood circulation through the skin and increased sweat production are inadequate to cool the body. With so much blood going to the external surface of the body, relatively less goes to the active muscles, the brain, and other internal organs. This causes a decline in strength and an increase in fatigue, alertness, and mental capacity (especially accuracy, comprehension and retention of information). The increased body temperature and physical discomfort also increase feelings of irritability and anger.

Heat causes about 400 deaths per year in the U.S. – more than all other natural disasters combined. All heat-related deaths are preventable. Prolonged heat spells can increase the likelihood of heat-related illness due to progressive body fluid deficit, loss of appetite, salt deficit, buildup of heat in living and work areas, and breakdown of air-conditioning equipment or power outages.

Commonly used heat-related terms you should know:

Heat Wave – More than 48 hours of high heat (90º or higher) and high humidity (80+%) are expected.
Heat Index – A number in ºF that tells you how hot it really feels with the heat and humidity.

How to Prevent Heat-Related Illness



- Increase your fluid intake. 16-32 ounces of cool fluids each hour is recommended.
- Don't wait until you're thirsty. You will need more liquid than your thirst indicates.
- Sports beverages can replace the salt and minerals you lose in sweat.
- Avoid caffeine, alcohol, or large amounts of sugar – they can cause you to lose more body fluid. Very cold drinks can cause stomach cramps.
- Avoid hot foods, heavy meals and high-protein foods - they increase metabolic heat.
- Rest often in shady areas, or indoors, or in an air-conditioned vehicle.

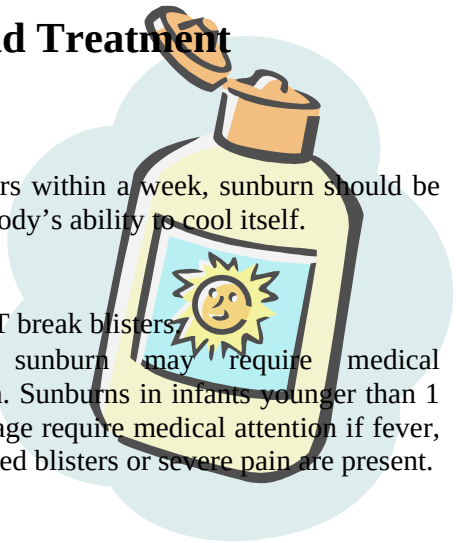
Source Material Available in HR Office and in G:/HR Training Bulletins/Source Material/

- Protect yourself from the sun by wearing a hat and sunglasses, and by putting on sunscreen of SPF 15 or higher (the best products provide "broad spectrum" or "UVA/UVB protection").
- Electric fans may provide comfort, but at higher heat indexes, fans will not prevent heat illness.

Risk Factors Contributing to Heat-Related Illness

Some people are at greater risk for heat illness than others, especially infants and children under 4, the elderly, the obese, the mentally ill, and people who are physically ill (especially those suffering from heart disease, diabetes, high blood pressure or chronic illness). Some medications increase the risk, such as medications for Parkinson's disease, tranquilizers, and medications for depression or insomnia. Persons on low-salt or special diets, or with limited fluid intakes should consult their doctor for advice on how to deal with hot weather. Do not take salt tablets unless directed by your doctor.

Heat-Related Illnesses, Symptoms and Treatment



Sunburn

Although the discomfort is usually minor and healing often occurs within a week, sunburn should be avoided because it damages the skin, dehydrates the body and affects the body's ability to cool itself.

Treatment:

- Avoid repeated sun exposure.
- Apply cold compresses or immerse the area in cool water.
- Apply moisturizing lotion to affected areas.
- DO NOT use salve, butter, or ointment.
- DO NOT break blisters.
- Severe sunburn may require medical attention. Sunburns in infants younger than 1 year of age require medical attention if fever, fluid-filled blisters or severe pain are present.

Heat Rash (a.k.a. "Prickly Heat")

A skin irritation caused by excessive sweating during hot, humid weather. Sweat that is not easily removed from the surface of the skin by evaporation leads to the sweat ducts becoming plugged and painful. Heat rash looks like a red cluster of pimples or small blisters, and is most likely to occur on the neck and upper chest, groin, under the breasts and in elbow creases.

Treatment:

The best treatment is to provide a cooler, less humid environment. Keep the affected area dry. Dusting powder may be used to increase comfort, but avoid using ointments and creams – they keep the skin warm and moist and may make the condition worse.

Heat Cramps

Heat Cramps are muscle pains or spasms that may occur in association with strenuous activity. This is common in people who sweat a lot during strenuous activity because their bodies are depleted of salt and moisture - most often in the abdomen, arms or legs.

Treatment (if medical attention is not necessary):

- Stop all activity and rest quietly in a cool place. Do not return to strenuous activity for a few hours after the cramps subside. Further exertion can lead to heat exhaustion or heat stroke.
- Drink clear juice or a sports beverage.
- Seek medical attention for heat cramps if they do not subside in 1 hour.

Fainting

Workers unaccustomed to hot environments who stand erect and immobile in the heat may faint. Due to the body's attempts to control internal temperature, blood may pool in the lower part of the body due to enlarged blood vessels instead of returning to the heart to be pumped into the brain. Upon lying down, the worker should soon recover. The worker can prevent further fainting by moving around and preventing blood from pooling in the lower extremities.

Heat Exhaustion

A milder form of heat illness, it can develop after several days of exposure to high temperatures and inadequate/unbalanced replacement of fluids. Fluid loss causes blood flow to decrease in the vital organs, resulting in a form of shock. Sweat does not evaporate as it should, possibly due to high humidity or too many layers of clothing, and the body is not properly cooled. Heat exhaustion is less dangerous than heat stroke.

Warning Signs:

- Medium or heavy sweating
- Paleness
- Muscle cramps
- Tiredness or weakness
- Dizziness or lightheadedness
- Headache
- Irritability or confusion
- Nausea or vomiting
- Fainting

Skin may be cool and moist, and body temperature normal. The pulse rate will be fast and weak, and breathing will be fast and shallow. If heat exhaustion is not treated, it may progress to heat stroke. Seek medical attention if symptoms worsen or last longer than one hour, or if symptoms are severe.

Treatment:

- Drink cool, non-alcoholic beverages.
- Take a cool shower, bath, or sponge bath.
- Rest in an air-conditioned environment.
- Wear lightweight clothing.

Heat Stroke

The most serious heat-related illness, it occurs when the body becomes unable to control its temperature. Body temperature can rise so high that brain damage can occur. Heat stroke can cause death or permanent disability if emergency treatment is not provided.

Warning Signs:

- Extremely high body temperature (above 103ºF)
- Red or spotted, hot, dry skin (no sweating)
- Rapid, strong pulse
- Dizziness, nausea or throbbing headache
- Confusion or delirium
- Unconsciousness
- Seizures or fits

Treatment:

- Have someone call for immediate medical assistance while you begin cooling the victim. If emergency personnel are delayed, call the emergency room for further instructions.
- Get the person to a shady area and keep him lying down. Loosen or remove heavy clothing.
- Cool the person immediately. Use whatever methods you can: immerse in a tub of cool water, spray with cool water from a garden hose, sponge the person with cool water, or wrap the person in a cool, wet sheet and fan vigorously. Continue until body temperature drops to 101-102ºF.
- Give cool water to drink if the person is conscious – half a glass every 15 minutes.
- DO NOT give the person alcohol or caffeinated beverages to drink.
- DO NOT use rubbing alcohol; it closes the pores and prevents heat loss.