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— Dr. Peter Greaney

Protect Outdoor Workers in Summer Heat

By Abigail Cirincione, contributing writer

When many people think of summer, they conjure up images of lazy days, swimming, drinking lemonade and relaxing. But for the thousands of people that work outside in California, summer takes on a different meaning.

For outdoor workers, summers in California often mean long hours spent in the sun, high temperatures, oppressive heat, sweat and sunburns. Workers in industries such as construction, energy and hazardous waste cleanup must often work outdoors, regardless of weather conditions. In the summer, outdoor workers, especially those required to wear semi-permeable or impermeable protective clothing, are at a high risk for developing heat illness.

Heat illness is a medical condition caused by the body's inability to cope with heat and cool itself. Sometimes, especially for those working outside, heat illness can turn deadly.

Regulations Regarding Heat Stress

By law, employers must create heat illness prevention programs. The California Division of Occupational Safety and Health (Cal/OSHA) adopted the Heat Illness Prevention Standard, Title 8, California Code of Regulations, Section 2295, which requires all employers with outdoor work sites to take four basic steps to prevent heat illness:

- Provide heat illness prevention training to all employees, including supervisors.
- Provide enough fresh water so that each employee can drink at least one quart per hour and encourage them to do so.
- Provide access to shade for at least five minutes of rest when an employee believes he or she needs a preventative recovery period. They should not wait until they feel sick to do so.
- Develop and enforce written procedures for complying with the Heat Illness Prevention Standard.

"Outdoor workers do not have the luxury of working in an air conditioned environment," said Dr. Peter Greaney, president of WorkCare, a company that provides occupational health services. "It is the obligation of the employer to provide a safe working environment for their employees. Doing so will benefit both the employee and the employer — the employee will be healthy and more productive, thus benefiting the employer."

According to Cal/OSHA, in 2005 heat illness contributed to 13 work-related deaths and is an underlying factor in the high percentage of non-fatal incidents.

"The fact that there is even one death due to heat illness is a tragedy," Greaney noted. "Heat illness can be prevented." Greaney offers the following tips to prevent heat illness.

Train Employees

Taking the time to properly train managers, supervisors and employees is key to preventing heat illness. Under Cal/OSHA's standards, employers must provide employees with training before they can work outdoors. Training should include information on risk factors, the importance of drinking water, types of heat illness, warning signs, symptoms and the employer's procedures for contacting emergency medical services.

Greaney said the state standards for heat stress hazards work best for employers when incorporated into the employer's Injury and Illness Prevention Program required by section 3203 of the California Code of Regulations. If an employer's heat illness prevention program is integrated into existing safety activities, the employer will more likely get greater buy-in from employees than if the program was a stand-alone.

Prevention is Key

By properly using prevention techniques, employers will see heat illness incidents drop. The following prevention strategies can help employers stop heat-related problems before they start:

- Acclimatization — Employers and employees need to be aware that the body needs time to adjust to physical activity in warm weather — typically four to 14 days to fully adjust to significant increases in heat. This is especially true during heat waves when the temperature does not cool off at night. The best acclimatization strategy is to allow employees to adjust to hot weather by gradually increasing to a full work shift and pace. On very hot days, consider working during the cooler parts of the day and increasing rest breaks.
- Shade — Shade must be available to employees. Consider portable sources of shade, such as umbrellas or canopies.
- Water — Remind workers to drink frequently and provide easily accessible, cool water.
- Clothing — If work allows, employees should be trained on the benefits of loose-fitting, light-colored clothing and wide-brimmed hats.
- Know the risk factors — Age, weight, degree of physical fitness, degree of acclimatization, metabolism and a variety of medical conditions, such as hypertension, all affect a person's sensitivity to heat. Prior heat injury predisposes an individual to additional injury. Keep in mind that it's difficult to

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predict just who will be affected and when because individual susceptibility varies.

Avoid Heat Illness

Through proper training and education, employers can avoid potentially life-threatening situations when their employees work in the heat. Though employers in California must adopt a heat-illness-prevention program, these measures should go above and beyond to save lives. Training should be provided throughout the summer and in a manner consistent with the workers' learning style.

"The bottom line is that employers need to train and retrain employees so that if an emergency situation arises, employees will know what to do," Greaney said. "In an emergency situation, it can be difficult for workers to remember treatment steps. Make sure that they have materials onsite that they can refer to so that they can handle the situation properly. Prevention is key. It is safer, and easier, to avoid heat-related illnesses than to treat them." ☐

WorkCare is a national, physician-owned and -operated occupational medical consulting company that specializes in employee health. For more information about the health risks of heat illness or any other employee health problems, e-mail info@workcare.com.

Members can learn how to comply with the Heat Illness Prevention Standard at ***www.hrcalifornia.com.***

What Employers Should Know: Get Employees Educated!

- ✓ CalBizCentral offers a Heat Illness Safety and Prevention poster.
- ✓ Heat Illness Prevention minibooks (pocket-sized guides) are available in English and Spanish, are fully illustrated and contain a reference card for your wallet.
- ✓ Find these products and more at **www.calbizcentral.com**.

Heat Illness Types and Treatments

Type of Illness	Definition	Symptoms	Treatment	Important to Know
Heat Stroke	The most serious health problem for workers in hot environments. It's caused by the failure of the body's internal mechanism to regulate its core temperature. Sweating stops and the body can no longer rid itself of excess heat.	• Mental confusion, delirium, loss of consciousness, convulsions or coma; • A body temperature of 104 degrees F or higher; • Hot dry skin which may be red, mottled or bluish.	Cool the victim rapidly using whatever methods you can: • Immerse the victim in a tub of cool water and massage the extremities; • Pack the victim in ice or apply ice packs; • Spray the victim with cool water from a garden hose; • Sponge the person with cool water.	Get immediate medical assistance. Victims of heat stroke will die unless treated promptly!
Heat Exhaustion	Results from loss of fluid through sweating when a worker has failed to drink enough fluids, take in enough salt or both.	• Sweating • Extreme weakness or fatigue • Giddiness • Nausea • Headache • Clammy and moist skin • Pale or flushed complexion • Normal or slightly higher body temperature	• Stop exercising or any activity; • Victim should lie down and rest in a shady or cool place; • Loosen victim's clothing; • Give victim cool, non-alcoholic fluids, such as water, clear juice or a sports drink; • If victim cannot sip fluids, he/she probably needs intravenous fluids in a first aid station or a hospital; • Cool body with a fan, spray or washcloth, or sit in a cool bath; • Seek medical attention if symptoms don't improve.	If left untreated, heat exhaustion can quickly escalate to heat stroke, which can be fatal. Treat immediately and monitor carefully.
Heat Cramps	Painful spasms of the muscles caused when workers drink large quantities of water but fail to replace their bodies' salt loss. Tired muscles — those used for performing the work — usually become most susceptible to cramps.	• Muscle pains or spasms — usually in the abdomen, arms or legs; • May occur in association with strenuous activity.	• Victim should stop all activity and sit in a cool place; • Give the victim water, clear juice (a juice that you can see through, such as apple) or a sports beverage; • Do not let victim return to activity for a few hours after cramps subside — further exertion may lead to heat exhaustion or heat stroke.	Seek medical attention if cramps do not subside in one hour. If the victim has heart problems or is on a low-sodium diet, seek medical attention. Heat cramps may be a sign of heat exhaustion.
Heat Rash (also known as prickly heat)	May occur in hot and humid environments where sweat is not easily evaporated from the surface of the skin.	• Looks like a red cluster of pimples or small blisters; • More likely to occur on the neck and upper chest, in the groin, under the breasts and in elbow creases.	• Provide a cooler, less humid environment; • For workers whose jobs require sweat-impermeable clothing, treatment may include a temporary transfer to a location with air conditioning or a location that does not require protective clothing; • Use dusting powder to increase comfort.	When extensive or complicated by infection, heat rash can be so uncomfortable that it inhibits sleep and impedes a worker's performance or even results in temporary or permanent disability.