



BUSINESS SERVICES DIVISION

District Safety Advisory

Heat Stress

Introduction

When the body is unable to cool itself through sweating, serious heat illness may occur. The most severe heat-induced illnesses are heat exhaustion and heat stroke. If not promptly recognized and treated, heat exhaustion could progress to heat stroke and possible death.

Know the Heat Equation

The surface of your skin acts like a heat exchanger. When your body sweats, perspiration carries the heat from your body to the skin's surface where it then evaporates into the air, thereby cooling the body. If the air is already saturated with water, a condition of high humidity, perspiration will not evaporate from your skin as readily as it would in dry air. Therefore, the higher the ambient temperature and humidity, the greater the chances for heat stress. The relationship may be expressed as follows:

HIGH TEMPERATURE + HIGH HUMIDITY + PHYSICAL WORK = HEAT STRESS

Avoiding Heat-Related Illness

There are certain actions you can take to reduce the likelihood of suffering heat stress:

- Drink plenty of water *before* you get thirsty and continue to drink water throughout the work activity;
- Wear light, loose-fitting, breathable clothing – cotton is a good choice;
- Take frequent short breaks from the high temperature / high humidity environment;
- Avoid caffeine and alcohol or large amounts of sugar;
- Eat smaller meals before the work activity;
- Know what medications you take may adversely affect your performance in high temperature / high humid environments; and
- Know that respirators and work suits can increase the probability of heat stress.

DISTRICT SAFETY ADVISORY - HEAT STRESS

Pre-Job Planning

Supervisors should consider the following safe work practices during the planning stages of work involving high temperature / high humid environments:

- Pre-job briefings to raise employee awareness;
- Buddy system for employees to look out for one another;
- Worker acclimatization;
- Work time limits in hot environments – avoid scheduling heavy work between 10:00 AM and 2:00 PM during a heat wave to the extent feasible;
- Availability of cool drinking water;
- Body cooling devices, such as ice vests; and
- Additional ventilation or supplied air respirators for extended work;

Heat Stress Recognition

Heat stress conditions may result in any of the following employee illnesses:

Heat Rash. Heat rash may be accompanied by a prickly heat sensation on the skin. The resulting skin rash may appear over the arms, shoulders, chest, or behind the knees.

Heat Exhaustion. Heat exhaustion is characterized by a pale moist face, dizziness, nausea, headache, fatigue, weakness and/or an unsteady gait. If the warning signs are disregarded, the employee may suddenly collapse.

Heat Cramps. Heat cramps are generally characterized by pain in the affected muscles, but are also accompanied by some heat exhaustion characteristics listed above.

Heat Stroke. Heat stroke is a serious medical condition. Early signs of heat stroke include erratic behavior, hot, dry flushed skin, weakness, unsteady gait, and irritability. If the warning signs are disregarded, the employee may fully develop heat stroke characterized by elevated body temperature (*105 °F*), convulsions and loss of consciousness.

Who is at Risk?

Everyone! Everyone will most likely experience some form of heat stress during the course of his/her life. Learn how to properly hydrate your body for the activities you undertake. Take special care when experiencing extreme weather conditions. Your body takes time to adjust. Take breaks to let your body cool off. Heat stress may be experienced even in cold weather. The key is maintaining your body's "heat exchanger" in good working condition at all times.

More Information

Should you need more information or have any questions, please contact the District's Business Services Division – Risk Management Section at (213) 891-2422.