



TEXAS TECH UNIVERSITY SYSTEM

Risk Management™

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Heat Related Illnesses

As we enter what is historically the hottest time of summer it is important that you are aware of the symptoms of heat related illness and the simple steps you can take to minimize the likelihood you will fall victim to heat related illnesses.

Overview

Working outdoors in hot weather, or indoors in hot environments can result in serious illness or even death. Workers exposed to extreme heat may experience symptoms of heat-related illnesses (HRI), such as heat cramps, heat rash, heat exhaustion, fainting, heat stroke, and other symptoms.



Workers at risk of heat stress include outdoor workers and workers in hot environments such as construction environments, boiler operations, grounds maintenance and others. Workers at greater risk of heat stress include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that may be affected by extreme heat.

Prevention of heat stress in workers is important. This article is designed to educate you so that you understand what heat stress is, how it affects your health and safety, and how it can be prevented.

Hazard Identification

The human body normally cools itself by sweating. During hot weather or in hot environments, especially with high humidity, sweating just isn't enough. Body temperature can rise to dangerous levels and you can develop a heat illness. Most heat illnesses occur from staying out in the heat too long. Un-acclimated workers, those over-weight and out of shape are often more susceptible to heat

Certain safety problems are common to hot environments. Heat tends to promote accidents due to the slipperiness of sweaty palms, dizziness, or the fogging of safety glasses. Wherever there are hot surfaces, steam, etc., the possibility of burns from accidental contact also exists.

Heat-related illness is also linked to injuries from falls, equipment operation accidents, and other on-the-job incidents. Such incidents can happen when someone with heat stress becomes fatigued, dizzy, confused, or disoriented.

Aside from these obvious dangers, the frequency of accidents, in general appears to be higher in hot environments than in more moderate environmental conditions. One reason is that working in a hot environment lowers the mental alertness and physical performance of an individual. Increased body temperature and physical discomfort promote irritability, anger, and other emotional states which sometimes cause workers to overlook safety procedures or to divert attention from hazardous tasks.

There are several different types of Heat Stress, with unique symptoms to be aware of.

Heat Stroke - Heat stroke is the most serious heat-related disorder. It occurs when the body becomes unable to control its temperature: the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106 degrees Fahrenheit or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not given. Symptoms can include:

- Hot, dry skin or profuse sweating
- Hallucinations
- Chills
- Throbbing headache
- High body temperature
- Confusion/dizziness
- Slurred speech

Heat Exhaustion - Heat exhaustion is the body's response to an excessive loss of the water and salt, usually through excessive sweating. Workers most prone to heat exhaustion are those that are elderly, have high blood pressure, and those working in a hot environment. Symptoms can include:

- Heavy sweating
- Extreme weakness or fatigue
- Dizziness, confusion
- Nausea
- Clammy, moist skin
- Pale or flushed complexion
- Muscle cramps
- Slightly elevated body temperature
- Fast and shallow breathing

Heat Syncope - Heat syncope is a fainting (syncope) episode or dizziness that usually occurs with prolonged standing or sudden rising from a sitting or lying position. Factors that may contribute to heat syncope include dehydration and lack of acclimatization. Symptoms can include:

- Light-headedness
- Dizziness
- Fainting

Heat Cramps - Heat cramps usually affect workers who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture levels. Low salt levels in muscles causes painful cramps. Heat cramps may also be a symptom of heat exhaustion.

- Muscle pain or spasms usually in the abdomen, arms, or legs.

Heat Rash - Heat rash is a skin irritation caused by excessive sweating during hot, humid weather. It can occur at any age but is most common in young children.

- Clustering of red pimples or small blisters.
- Typically occurs on the upper chest, groin, under breasts and in elbow creases.

Work Practice Controls

You can better protect yourself and co-workers by:

- Drinking plenty of fluids
- Work in the shade when possible
- Take turns working in hot areas
- Do the heaviest work in the coolest time of the day
- Take frequent breaks and rest in cool, shady areas with fans if accessible

Working safely is everyone's responsibility.