

Loss Prevention News

Provided by the Texas Municipal League Intergovernmental Risk Pool

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Heat Stress

Heat stress, heat stroke, heat exhaustion, heat cramps, heat collapse, heat fatigue, and heat rashes are all conditions employees face when working in hot environments. Safety issues related to hot environments include accidents due to sweaty palms, dizziness, or the fogging of safety glasses. A hot environment can lower mental alertness and an individual's physical performance.



Normally, the human body maintains a fairly constant internal temperature. In order to keep internal temperature within safe limits, the body responds by varying the rate and amount of blood circulation through the skin and the release of fluid onto the skin by sweat glands. As internal body heat rises as the

result of work or high temperatures, surface blood vessels get bigger and the pulse rate rises, making the heart and circulatory system work harder.

When the air temperature is as warm as or warmer than the skin, the body surface cannot lose its heat. Sweating can cool the body if the moisture can evaporate. In high humidity conditions, or other such as conditions low air movement, the evaporation of sweat from skin is decreased, and the body's efforts to maintain body temperature may be impaired. Sweating will cause the body to lose fluids and minerals. Most people will lose about a quart of sweat an hour when working in extreme heat.

It is difficult to predict just who will be affected by hot environments and when, because individuals adapt differently. Age, weight, physical fitness, acclimatization, metabolism, use of alcohol or drugs, lack of sleep, and a variety of medical conditions affect a person's sensitivity to heat. Important methods to control the effects of heat include:

Acclimatization

The human body can adapt to heat exposure to some extent. This adaptation is called acclimatization. After acclimatizing, the same activity will produce fewer demands on the heart and circulatory system. The body will sweat more efficiently. An acclimatization program basically involves exposing employees to work in a hot environment for longer and longer periods. For example, a program

could involve workers being exposed to very hot or more strenuous conditions for 50% of the time on day one, 60% on day two, 80% on day three and 100% on day four, with appropriate breaks.

Water and Food

Employees working in conditions that could cause heat-related problems should drink cool water or other cool non-caffeine liquid frequently. Drink 5 to 7 ounces of water every 15 to 20 minutes. For best absorption by the body, the water temperature should be 50 to 60 degrees. Salt should only be used under a doctor's supervision because most people have salt in their diet. Regarding meals, a heavy meal reduces the body's ability to get rid of heat because food directs blood flow to the digestive tract instead of the skin surface.

Work Practices

Work can be alternated between light and heavy activity so that individuals do not overdo it. Duties can be alternated amongst several employees. Rest can involve minimal activity, not just stopping work entirely. Other work practices include:

Wetted clothing is one way to cool the body. On extremely hot days with a slight breeze, the wetted clothing can help.

Difficult and strenuous work should be performed when temperatures are lower. Types of jobs like mowing should be completed in the early morning or in the evening.

Acclimatize your body to function more efficiently during hot days. Drink plenty of fluids before working and take breaks in a shaded spot.

Drink plenty of fluids during the shift. Replenishment of fluids will aid in the process of evaporation of sweat that will cool your body. One cup of fluid every 20 minutes is recommended.



Wear suitable clothing. Loose fitting clothing will allow more air circulation, and a brimmed hat will help. Avoid wearing dark clothing. Lighter colors reflect the rays of the sun.

In indoor environments like garages, fans can help. Point the fan out of the building during the hottest times of the day, and bring in cooler outside air in the early mornings and evenings.

Resources

TML-IRP Loss Prevention Department
1-800-537-6655
www.tmlirp.org

The Media Library has a DVD - #94 *Heat Stress Don't Lose Your Cool*, including English and Spanish, along with #181 *Heat Stress for Public Employees*.

Texas Department of Insurance
Division of Workers' Compensation
<http://www.tdi.state.tx.us/wc/safety/>
Free resources, including *Heat Related Injuries and Illness Prevention and Heat Stress Safety Training Program*

Occupational Safety and Health Administration
www.osha.gov/pls/publications/publication.html
Free publications, including a heat stress "Quick Card" and Fact sheets.