HEAT STRESS & COLD STRESS

The Dangers of Working in Extreme Temperatures and How to Manage Them

Extreme temperatures hurt and kill people by pushing the body beyond its limits. These conditions can be found both indoors and outdoors, and they have the potential to be life-threatening. Training and prevention for extreme temperature stress needs to be as high of a priority as it is for more visible risks in the workplace.[1]

But even before extreme hot or cold conditions cause injury, they can have much more widespread effects of lower productivity and morale. These very real consequences mean that employees and supervisors need appropriate training to recognize the symptoms of extreme temperature stress and how to respond to them.

600 PEOPLE DIE
every year in the U.S. from heat stress

THE RISKS OF HEAT STRESS

High temperatures can result in heat-related illnesses, such as heat rash or heat stroke, with symptoms ranging in severity from headaches to a loss of consciousness. Heat can also increase the risk of injury in workers due to sweaty palms or dizziness, leading to an accident. Sometimes, heat-related illnesses are as simple to treat as giving the victim cool water and placing them in the shade, while a severe case of heat stroke can require a trip to the hospital.

According to OSHA, more than 40 percent of heat-related worker deaths occur in the construction industry, but workers in every field are susceptible.[2] While those at risk for heat stress are primarily outdoor laborers, people who work in hot indoor environments, such as bakeries, refineries, or factories, are also at risk. Even though heat-related deaths and illnesses are completely preventable, the CDC reports that more than 600 people in the U.S. die each year from extreme heat stress.[3]

THE RISKS OF COLD STRESS

Similarly, employees working in frigid conditions can experience cold injuries ranging from frostnip to hypothermia. While these injuries are dangerous to the workers themselves, numbness in the hands can also lead to workplace accidents for others, if workers lose their grip on a tool or control of machinery. Symptoms can sometimes be alleviated by getting the victim to a warm location or by removing wet clothing, but severe exposure can require emergency medical attention. Workers most at risk are people working outside in the cold, particularly in the snow, although cold or wet indoor environments can also lead to cold stress. According to the CDC, about 1,200 people die per year due to extreme cold stress.[4]

[1] "Evaluation of the Impact of Ambient Temperatures on Occupational Injuries in Spain." Environmental Health Perspectives, Erica Martinez-Solanas et al, June 11, 2018.

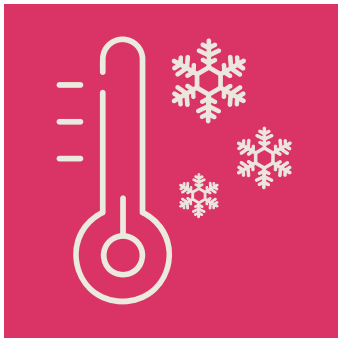
[2] "OSHA's Campaign to Keep Workers Safe in the Heat." OSHA.

[3] "Natural Disasters and Severe Weather: About Extreme Heat." CDC.

[4] "National Health Statistics Reports." CDC, Jeffrey Berko et al, July 30, 2014.

OCCUPATIONS AT RISK

Depending on the time of year, geography, and the industry, employees may be at risk for one extreme or the other. Workers in construction, road work, agriculture, landscaping, and other outdoor occupations are at risk for both extreme temperature types, while employees working in hot foundries or cold commercial food preparation facilities are only at risk based on their relevant exposure. Additionally, jobs like truck drivers, EMTs, and police officers may be unexpectedly exposed to the elements for long periods.



1,200 PEOPLE DIE
every year in the U.S.
from cold stress

MITIGATING EXTREME TEMPERATURE STRESS

When working to prevent extreme temperature stress, employers should first attempt to eliminate the hazard.

For heat hazards:

- Add shade, fans, water, and cooling stations on a hot day
- Accommodate workers with frequent opportunities to cool down

For cold hazards:

- Monitor workers' physical condition, schedule work during the warmest part of the day, provide warm beverages, and add radiant heaters to work areas
- Accommodate workers with frequent opportunities to warm up

Next, employers should provide training to educate workers and supervisors alike about the risk factors, symptoms, first-aid treatment, and prevention options.

General Training: Gives employees and supervisors the knowledge they need to recognize the hazards, as well as the symptoms, of temperature stress — and to know what to do when they identify symptoms in themselves or others.

Site-Specific Training: Outlines the administrative controls put in place for an individual workplace — including acclimation schedules, work duration between temperature breaks, hydration requirements, and instruction on where to find water, warming or cooling areas, and other support.

By recognizing the hazards, employees, and employers can then work together to identify ways to protect workers.

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