# Temperature Extremes - Heat

## Safety Meeting Packet


Heat-related occupational illnesses and injuries are significant concerns for workers in a variety of industries. From agricultural workers to construction workers, employees that are exposed to extreme heat, prone to overexertion, and those working in hot or humid climates are susceptible to heat stress. This often occurs when a person's body is unable to cool itself by sweating or to maintain normal body temperature.

## Environmental Risk Factors

There are many risk factors that could lead to an increase in core body temperature and heat-related illnesses. Some risk factors include:

- High air temperatures and high levels of humidity
- Limited air movement
- Radiant heat sources
- Interactions with hot objects or substances
- Strenuous physical activities

## Personal Risk Factors

Some individuals possess characteristics that make them sensitive or vulnerable to heat-related medical conditions. Examples of personal risk factors include:

- Age and weight
- Body conditioning and physical fitness
- Low fluid consumption
- Metabolism
- Use of alcohol or drugs
- Pre-existing medical conditions

## Safety Hazards

As workers suffering from heat stress are less alert and may be confused, they are at a greater risk for accidents. Work accidents may arise from sweaty palms, dizziness, or even fogged safety goggles. These workers may even suffer from drowsiness, irritability, or confusion that can reduce focus and judgement.

## Common Heat Health Hazards

### Heat Cramps

The first sign of a heat-related illness is often painful muscle spasms that are caused by the loss of body salts and fluid due to profuse sweating. These usually occur as a result of employees performing hard physical labor. Cramps may occur in the abdomen, back, arms, or legs. Heat cramps are more painful and tend to last longer in duration than those leg cramps that occur at night.

### Heat Syncope or Fainting

When a worker stands in one position for an extended period or stands up suddenly, they may suffer a temporary reduction of blood supply to the brain. This results in light-headedness and loss of consciousness.

### Heat Rash or Prickly Heat

Individuals working in hot, humid climates that prevent sweat from easily evaporating may suffer from skin irritation. The rash presents as clusters of red pimples or small itchy blisters when a person's sweat ducts become clogged from excessive sweating. The bumps are most often found in areas where there is a lot of friction, such as the neck, chest, groin, and body folds.

## Heat Exhaustion

This occurs when the body loses an excessive amount of water and salt through sweating. The worker may initially complain of fatigue, headaches, or nausea. They may have dilated pupils (pupils are larger than normal). In more serious cases, the victim may lose consciousness. A worker who is more irritable, confused, or sweaty than normal may be suffering heat exhaustion.

## Heat Stroke

Heat stroke is the most serious heat-related condition resulting from exposure to extreme temperatures. Heat stroke is caused by the body no longer being able to regulate its temperature. The individual stops sweating effectively and is unable to remove excess heat. Skin may become hot and unusually dry, red, or spotted. Victims may become delirious, confused, and may have seizures or lose consciousness. Death or permanent brain damage can occur if emergency medical treatment is not administered immediately.

# Emergency Medical Treatment

If you see signs of someone suffering from heat exhaustion or heat stroke, call for immediate medical assistance.

- Call 911 and watch over the person until help arrives.
- Get the victim to a shady or air-conditioned area.
- Loosen clothing and remove excess layers.
- Give the person small amounts of cool water unless they are vomiting or losing consciousness.
- Cool the victim rapidly, using whatever methods possible.
    - Immerse the victim in a tub of cool water
    - Place the person in a cool shower
    - Spray the victim with cool water from a hose
    - Sponge the person with cool water
    - Fan the victim vigorously
    - Put ice packs on their groin and under their arms
- Monitor body temperature and continue cooling efforts until the temperature drops to 101-102°F.

For additional information, please consult the following:

- OSHA Standard: 29 CFR 1910.141(b)(1) - Potable water
- OSHA Standard: 29 CFR 1910.151 - Medical Services and First Aid
- OSHA Standard: 29 CFR 1926.21 - Safety training and education
- OSH Act of 1970, Sec. 5 - Duties

# Prevention Measures

Prolonged heat exposure can result in a medical emergency, so employers should monitor their workers closely.

- Be sure employees are drinking plenty of fluids, including water and drinks with electrolytes. Workers should be encouraged to drink one cup of cool water every 15 to 20 minutes at a minimum.
- Workers should wear light-colored, breathable, loose-fitting clothing.
- Allow frequent breaks in the shade to reduce exposure to direct sunlight.
- Employees should be trained on using exhaust ventilation systems, fans, open windows, and other methods to create airflow.
- If at all possible, when weather is extremely hot, employers may modify work schedules to reduce work occurring during the hottest part of the day.
- Employees should be trained to monitor and spot symptoms of heat illnesses in themselves and their co-workers. Identification is one of the best ways to prevent heat-related illnesses from occurring or worsening.

# Worker Training

It is recommended that employers educate their workers about preventing heat-related illnesses and the warning signs of these illnesses.

- Provide an overview of the different types of heat-related illnesses (heat cramps, heat syncope, heat rash, heat exhaustion, & heat stroke).
- The following are tips to help prevent illnesses:
    - Employees need to drink extra fluids. Prepare for hot days, by drinking fluids ahead of sun exposure.
    - Breaks in shade or in air conditioning must be taken to reduce exposure
    - Modify work schedules to avoid time in sun
- Employees must know the symptoms of heat illnesses
- If the employee is believed to be sick, take the following precautions.
    - Move worker to cooler place (preferable inside to air conditioning)
    - Remove any excess layers
    - Replenish fluids
    - If employee is not responding or is believed to have serious health issues, please call 911 immediately.

# Temperature Extremes - Heat

## Safety Meeting Attendance Acknowledgement

Company Name _____

Department / Division _____

Meeting Date & Time _____ _____ ☐ AM ☐ PM

Meeting Location _____

Name & Title of Individual Conducting Meeting _____

## Key Meeting Discussion Points / Important Reminders:

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## Internal Procedures Reviewed:

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**By signing this document, you confirm your attendance at the meeting and acknowledge the issues addressed above!**

| Employees in Attendance | | |
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Employees not present: _____

Suggestions/Recommendations to improve workplace safety and health: _____

Actions Taken: _____

Manager/Supervisor: _____ Date: _____

## Disclaimer:

The information provided above was assembled using multiple resources. However, these materials do not contain ALL the information available regarding the required safety standards under local, provincial, state, or federal law for your industry.