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*Protecting Employees from Cold Stress.*



## Safety Toolbox

# Cold Stress



### *What is cold stress:*

A condition where a person can no longer maintain their normal body temperature.

#### **How to protect Yourself and Others:**

Know the symptoms, monitor yourself and co-workers.

Drink warm sweetened fluids (no-alcohol)

Dress properly: Layers of loose-fitting, insulating clothes. Use insulated jackets, gloves, and a hat (waterproof, if necessary)  
- Insulated and waterproof boots

**Risk Factors:** Dressing improperly, wet clothing/skin and exhaustion.



### Common Types of Cold Stress:

Cold temperatures and increased wind speed (wind chill) cause heat to leave the body more quickly, putting workers at risk of cold stress.

Anyone working in the cold may be at risk

#### **Hypothermia:**

- Normal body temperature (98.6°F) drops to 95°F or less.
- Mild Symptoms: alert but shivering.
- Moderate to Severe Symptoms: shivering stops; confusion; slurred speech; heart rate/breathing slow; loss of consciousness; death.

Treatment: Seek Medical Attention, move to dry/warm place, remove wet clothing, wrap person in blanket, place heat packs on person's body and give person warm sweetened drinks.

#### **Frostbite:**

- Body tissues freeze, e.g., hands and feet. Can occur at temperatures above freezing, due to wind chill.
- Symptoms: numbness, reddened skin develops gray/ white patches, feels firm/hard, and may blister.

Treatment: Move to warm place, remove wet or tight clothing, wrap the area in dry warm clothes and blankets, do not rub or massage affected area, do not try to re-warm the area, give person warm sweetened drinks and seek medical attention.

#### **Trench Foot:**

- A non-freezing injury caused by the feet to be exposed to wet and cold conditions for a prolonged period.
- Symptoms: Redness of the skin, swelling, numbness, blisters and leg cramps.

Treatment: Remove wet shoes/socks, dry feet and avoid standing on them, elevate the feet and seek medical attention.

## Occupational Risk Factors

Cold stress poses serious risks to workers, particularly in industries that require prolonged exposure to cold environments. Some key occupational risk factors include:

- **Environmental Conditions:** Extreme cold, wet weather, high winds, and dampness can accelerate heat loss from the body, increasing the likelihood of cold stress.
- **Inadequate Clothing or Equipment:** Insufficient or inappropriate protective clothing, such as missing layers or water-resistant gear, can leave workers vulnerable to freezing temperatures.
- **Prolonged Exposure:** Spending extended periods outdoors or in unheated environments heightens the risk of cold-related injuries or illnesses.
- **Physical Exertion:** Tasks requiring high energy output in cold weather can lead to sweating, which dampens clothing and speeds up body heat loss.
- **Lack of Acclimatization:** Workers not accustomed to cold climates or harsh winter conditions may have a lower tolerance to cold stress.
- **Poor Physical Health:** Preexisting health conditions, fatigue, or dehydration can make workers more susceptible to cold stress.
- **Isolation:** Working alone or in remote areas can delay response times if symptoms of cold stress occur, increasing the severity of potential injuries.

## Environmental Risk Factors

### Temperature:

Extremely cold temperatures, even above freezing with wind chill, can cause heat loss and lead to cold-related injuries.

### Cold Water/Snow:

These directly draw heat from the body, contributing to hypothermia and other cold-related injuries.



### Wetness/Dampness:

Wet clothes significantly increase the rate of heat loss, making it easier for the body to lose heat.

### Wind:

Wind increases the rate of heat loss from the body.