



# TAKE FIVE for Safety-Cold Stress

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# Cold Stress as a Work Hazard

Although OSHA does not have a specific standard that covers working in cold environments, under the Occupational Safety and Health Act (OSH Act) of 1970, employers have a duty to protect workers from recognized hazards, including cold stress hazards, that are causing or likely to cause death or serious physical harm in the workplace.

# What is cold stress?

- What constitutes cold stress and its effects can vary across different areas of the country.
  - In regions that are not used to winter weather, near freezing temperatures are considered factors for "cold stress."
- Increased wind speed also causes heat to leave the body more rapidly (wind chill effect).
- Wetness or dampness, even from body sweat, also facilitates heat loss from the body.
- Cold stress occurs by driving down the skin temperature, and eventually the internal body temperature.
- When the body is unable to warm itself, serious cold-related illnesses and injuries may occur, and permanent tissue damage and death may result.
- Types of cold stress include:
  - trench foot,
  - frostbite,
  - hypothermia, and
  - chilblains.

# Risk Factors

Risk factors for cold stress include:

- Wetness/dampness, Wind Speed
- Dressing suitability
- Predisposing health conditions such as hypertension, hypothyroidism, and diabetes
- Poor physical conditioning, fatigue
- Acclimation of worker

# Work Planning and Worker Awareness

## Supervisors/Work Planners:

- Monitor workers physical condition.
- Schedule frequent short breaks in warm dry areas, to allow the body to warm up.
- Schedule work during the warmest part of the day.
- Work in pairs.
- Provide warm, sweet beverages.
- Provide engineering controls such as radiant heaters when feasible.

## Worker Awareness should include:

- How to recognize the environmental and workplace conditions that can lead to cold stress.
- The symptoms of cold stress, how to prevent cold stress, and what to do to help those who are affected.
- How to select proper clothing for cold, wet, and windy conditions.
- Discuss concerns/symptoms to supervisor or ESH.

# Be Aware of Symptoms

| Condition          | Symptoms  |
|--------------------|---|
| <b>Trench Foot</b> | Redness of Skin, numbness, tingling, pain, swelling, leg cramps, blisters, bleeding under the skin, and Gangrene.   |
| <b>Chilblains</b>  | Redness, itching, possible blistering, inflammation, and possible ulceration in severe cases.   |
| <b>Frostbite</b>   | Reddened skin develops gray/white patches in the fingers, toes, nose, or ear lobes; tingling, aching, a loss of feeling, firm/hard, and blisters may occur in the affected areas.   |
| <b>Hypothermia</b> | <p>An important mild symptom of hypothermia is uncontrollable shivering, which should not be ignored. Although shivering indicates that the body is losing heat, it also helps the body to rewarm itself.</p> <p>Moderate to severe symptoms of hypothermia are loss of coordination, confusion, slurred speech, heart rate/breathing slow, unconsciousness and possibly death.</p> <p>Body temperature that is too low affects the brain, making the victim unable to think clearly or move well. This makes hypothermia particularly dangerous because a person may not know what is happening and won't be able to do anything about it.</p> |