

Cold Stress on the Farm

Recognize and Respond to Cold Temperatures, High Winds, and Wet Conditions in the Workplace



COLD TEMPERATURES

HYPOTHERMIA - Prolonged exposure to cold can cause the body to lose heat faster than replace it.

Low body temperatures affect ability to think clearly or move well.

Early Symptoms

- Shivering
- Fatigue
- Loss of coordination
- Confusion and disorientation

Late Symptoms

- No shivering
- Blue skin
- Dilated pupils
- Slowed pulse and breathing
- Loss of consciousness

CHILBLAINS - Damage of skin blood vessels from repeated exposure to cold temperatures.

Damage can be permanent with redness and itching returning with cold exposure.

Symptoms

- Redness and itching on cheeks, ears, fingers, and toes
- Possible blistering
- Inflammation



HIGH WINDS

FROSTBITE - Freezing of skin and tissues from cold temperatures and low-wind chill factors.

Permanent damage to body tissues, and severe cases can lead to amputation.

Symptoms

- Reduced blood flow to hands and feet (fingers or toes can freeze)
- Numbness, Tingling, or Stinging
- Aching
- Bluish or pale, waxy skin



WET CONDITIONS

TRENCH FOOT - Damage of the tissues in the feet from cold and wetness.

Damage to skin, loss of circulation to feet, and toxin build up.

Symptoms

- Reddening of the skin
- Numbness, Tingling, or Swelling
- Leg cramps
- Blisters or bleeding under the skin
- Gangrene (the foot may turn dark purple, blue, or gray)

IMMERSION HYPOTHERMIA - Prolonged exposure to chilling from rain, sweat, or cold water can cause the body to lose heat faster than replace it. Can occur at cooler temperatures (above 40 °F)

Low body temperatures affect ability to think clearly or move well.

Early Symptoms

- Shivering
- Fatigue
- Loss of coordination
- Confusion and disorientation

Late Symptoms

- No shivering
- Blue skin
- Dilated pupils
- Slowed pulse and breathing
- Loss of consciousness

Recommendations for Employers



TRAIN WORKERS TO:

- Recognize 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



PROVIDE ACCESS TO:

- Prompt medical attention to workers who show signs of cold-related illness or injury
- Cold-weather survival equipment
 - Emergency communications methods (satellite phone, cell phone, and personal locator beacon)
 - Medical and environmental thermometer, hot packs, first-aid kits
- Areas to warm up and a place to change wet clothing
- Appropriate cold-weather gear such as hats, gloves, and boots for work in cold environments
- Warm water



EMPLOYERS SHOULD:

- Create a plan for acting on sudden weather changes, like dropping temperatures or increasing wind speeds
- Schedule normal maintenance and repairs during warmer months when possible
- Reduce workers' time spent in the cold environment
- Schedule frequent short breaks in warm dry areas
- Minimize work requiring manual dexterity in cold rooms
- Provide glove alternatives for workers inside cold rooms (glove liners or fingerless gloves to wear under plastic gloves)
- Monitor workers' physical and cold conditions

Know your Winter Weather Terms

Blizzard Warning: Issued for sustained or gusty winds of 35 mph or more, and falling or blowing snow creating visibilities at or below 1/4 mile; these conditions should persist for at least 3 hours.

Wind Chill Advisory: Issued when wind chill temperatures are expected to be a significant inconvenience to life with prolonged exposure, and, if caution is not exercised, could lead to hazardous exposure.

Wind Chill Warning: Issued when wind chill temperatures are expected to be hazardous to life within several minutes of exposure.

Winter Storm Warning: Issued when hazardous winter weather in the form of heavy snow, blizzard conditions, heavy freezing rain, or heavy sleet is imminent or occurring. Winter Storm Warnings are usually issued 12 to 24 hours before the event is expected to begin.

Winter Storm Watch: Alerts the public to the possibility of a blizzard, heavy snow, heavy freezing rain, or heavy sleet. Winter Storm watches are usually issued 12 to 48 hours before the beginning of a Winter Storm.

Winter Weather Advisories: Issued for accumulations of snow, freezing rain, freezing drizzle, and sleet which will cause significant inconveniences and, if caution is not exercised, could lead to life threatening situations.

Source: National Oceanic and Atmospheric Administration (NOAA)

For more cold stress resources: umash.umn.edu/coldstress/



Upper Midwest
Agricultural Safety
And Health Center

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