

Working in Extreme Cold

Any one who works in cold environment may be at risk for cold stress or injury. This includes firefighters and emergency medical technicians who may be required to work outdoors for extended periods. The definition of “extreme cold” varies across the country. So, in regions not used to severe winter weather even near freezing temperatures (especially with wind) can be considered extreme cold. **Cold stress** occurs when the skin temperature and eventually the body core temperature is driven down by cold which can possibly lead to other health problems including tissue damage and possibly death.

Risk factors that contribute to **cold stress** include:

- Wetness/dampness, dressing improperly, and exhaustion
- Predisposed health conditions such as hypertension, hypothyroidism, and diabetes
- Poor physical conditioning



Over time the body will begin to shift blood flow from the hands, feet, arms, and legs and outer skin to the core (chest and abdomen).



Most common cold induced illnesses/injuries

- **Hypothermia** (body heat is lost faster than it can be replaced.)
- **Frostbite** (freezing of the skin and underlying tissue.)
- **Immersion/Trench Foot** (caused by prolonged exposure to wet and cold temperatures)

How to protect responders from cold induced illnesses/injuries in extreme cold:

Managers, Chiefs, and Captains:

- Make sure your staff has proper training to respond and work in extreme cold
- Provide proper equipment for response
- Use and encourage safe work practices



For this and more information on safely responding in extreme weather, you can go to:

HealthDay News for Healthier Living, *Working in Extreme Cold*;
<https://consumer.healthday.com/encyclopedia/work-and-health-41/occupational-health-news-507/working-in-extreme-cold-646986.html>

Wisconsin Tool Box, *Working in Extreme Weather: Cold Conditions*;

https://dwd.wisconsin.gov/apprenticeship/pdf/TBT09_ExtmreWeatherCold.pdf

OSHA Bulletin, *Cold Stress Guide*;

<https://www.osha.gov/SLTC/emergencypreparedness/guides/cold.html>

Responders:

- Monitor your physical condition and that of your coworkers
- Dress properly for the cold (*layers to trap air*)
- Work to stay dry (*synthetic fabric or wool wick away wetness better than cotton*)
- Keep extra clothes (*including underwear*) handy in case you get wet and need to change
- Drink warm sweetened fluids (*no alcohol*) add more carbohydrates to your diet if possible
- Don't forget to cover your head (*up to 40% of heat is lost through the head*)
- Take periodic breaks to warm up

