



# Working in the Cold

Maintaining a safe work environment while [working in the cold](#) can be accomplished by taking into consideration the effects of environmental factors such as air temperature, wind speed and humidity. These factors affect how our bodies perceive temperature and can increase the risk of cold stress related illness/injuries such as [hypothermia and frostbite](#). Wearing appropriate insulated clothing and limiting prolonged exposure to the cold by following a work/rest schedule can help to reduce the effects of environmental factors.

## Tips for Working in the Cold

### Appropriate Clothing

Protect yourself from the elements by wearing the appropriate insulated clothing depending on current or impending weather conditions. Cover all extremities; be sure to wear winter boots that are well insulated, slip and water resistant, along with hat, gloves and face protection.

- ❖ **Dress in Layers** – When working outdoors, dress in layers to insulate the body allowing you to better adapt to temperature changes. Layers should consist of a base layer, mid layer, and outer shell. A base layer should consist of lightweight breathable and moisture wicking materials that fit close to the body. The mid layer should promote insulating heat by utilizing clothing items made of fleece, down or synthetic insulation. The outer shell should be made of a wind and water-resistant material fitting well over other layers without being tight to allow for movement.
- ❖ **Stay Dry** – For the body to perform normal bodily functions, the body must maintain a core body temperature of 37°C (98.6 °F). Working in damp/wet clothes can rapidly drop your body's core temperature greatly increasing the risk of cold stress related illness/injuries. To better maintain your body's core temperature dressing in moisture-wicking layers and a water resistant/proof outer shell. Bring additional garments/clothing such as socks, gloves, hat, jacket, and underlayers to change into when items become damp/wet.
- ❖ **Personal Protective Equipment (PPE)** – Appropriate insulated clothing should be worn depending on current or impending weather conditions. Review your additional PPE needs for use and fit in cold weather work. This may include face mask or balaclava, additional sizes of your reflective clothing to fit over additional clothing layers, or winter insulated protective footwear.

### Work/Rest Schedule

Limit prolonged exposure to the cold by practicing a [work/rest schedule](#). Work/rest schedules factor in more frequent breaks to allow individuals to warm up and rest between tasks to help prevent cold stress related illness/injuries. Schedules vary depending on environmental factors such as air temperature, wind speed and humidity. The PEI Occupational Health and Safety Act General Regulations, Regulation 42.1 Extremes of Temperature follows the Threshold Limit Values (TLV's) published by the American Conference of Governmental Industrial Hygienist.

- ❖ **Proper Nutrition and Hydration** – Maintaining the body's core temperature is not possible without proper nutrition and hydration. Working in cold weather requires more energy than working in warm weather. To promote proper nutrition and hydration, eat a balanced diet consisting of the five main food groups and maintain adequate liquid intake of six to eight 8oz (250ml) glasses of water per day.
- ❖ **Be Prepared** – During winter months, weather becomes more unpredictable and extreme. Be prepared for any winter situation by monitoring the weather forecast, utilizing information and training on cold stress, and reviewing your workplace winter weather emergency plan.

### Resources

[https://www.ccohs.ca/products/posters/working\\_cold](https://www.ccohs.ca/products/posters/working_cold)  
[https://www.ccohs.ca/oshanswers/phys\\_agents/cold/cold\\_working.html](https://www.ccohs.ca/oshanswers/phys_agents/cold/cold_working.html)  
[https://www.ccohs.ca/oshanswers/phys\\_agents/cold/cold\\_health.html](https://www.ccohs.ca/oshanswers/phys_agents/cold/cold_health.html)  
[https://www.wcb.pe.ca/documentmanagement/document/pub\\_guidetocoldstressatwork.pdf](https://www.wcb.pe.ca/documentmanagement/document/pub_guidetocoldstressatwork.pdf)  
<https://www.ohcow.on.ca/wp-content/uploads/2023/04/OHCOW-cold-stress-infographic.pdf>





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The **toes, fingers, ears and nose** are at greatest risk because they do not have major muscles to produce heat. **Mental alertness** is also reduced.

- **Chilblain** – redness, swelling, tingling and pain
- **Frostnip** – caused when top layers of skin freeze, turning white, numb and hard, but deeper tissue feels normal
- **Frostbite** – occurs when tissue temperature falls below the freezing point or when blood flow is obstructed; symptoms include inflammation of the skin in patches and slight pain

In severe cases, there could be tissue damage without pain, or burning or prickling sensations that result in blisters.

- **Immersion foot/Trenchfoot** – caused by prolonged wet or cold feet; symptoms include tingling, numbness, itching, pain, swelling, and blisters

## What the law says

Some jurisdictions provide a range of acceptable temperatures ([http://bit.ly/cold\\_legislation](http://bit.ly/cold_legislation)) for specific circumstances. Others use the Threshold Limit Values® for cold stress published by the American Conference of Governmental Industrial Hygienists (ACGIH) as occupational exposure limits or guidelines.

Where there are no maximum exposure limits for cold working environments, there are guidelines that can be used to conduct work/task assessments, create safe work plans, and monitor conditions.

## Employers should:



- Choose equipment with thermal insulating materials and tools that can be operated with gloves.
- Survey and monitor the temperature.



- Use a buddy system to watch for symptoms in others.
- Adjust the pace or rate of work (not too low that a person becomes cold, nor too high and cause heavy sweating or wet clothing).
- Allow time for new workers to become accustomed to the conditions.
- Provide or make sure that protective clothing is worn at or below 4°C, including layers of warm clothing, with an outer layer that is wind-resistant, a hat, mittens or insulated gloves, a scarf, neck tube or face mask, and insulated, waterproof footwear.



- Train managers, supervisors and workers on symptoms, safe work practices, re-warming procedures, proper clothing practices, and what to do in case of cold injury.
- Clearly outline emergency procedures, with at least one trained person available at all times.



Workers need to maintain a core body temperature of **+37°C (+98.6°F)** for normal body functioning as well as to provide energy for activity.



**Hypothermia** is the most severe cold injury. The excessive loss of body heat can be fatal. Warning signs can include **nausea, fatigue, dizziness, irritability** or **euphoria, pain in the extremities** (hands, feet, ears) and **severe shivering**. Move workers to a heated shelter and seek medical advice when appropriate.

