



What is cold stress?

Colder temperatures can cause strain to the body and mind. **Cold stress** is the response of the body to cold conditions in the workplace. People respond differently to this stress, not just in their visible responses, but also in the health problems that can develop over time.

How does the body regulate temperature?

Normal body core temperature is 37°C (98.6°F) but when surrounding temperatures drop below 18°C, body heat is lost. The body adjusts itself by attempting to conserve heat through decreasing the blood flow to the skin's surface areas (ears, nose, fingers and toes), or by increasing heat production through involuntary muscle movement such as shivering.

How is Your Health Affected?

Cold stress is a safety hazard. It impairs the performance of both manual and complex mental tasks. It affects the:

- Sensitivity and dexterity of fingers.
- Deeper muscles, resulting in reduced muscular strength and stiffened joints.



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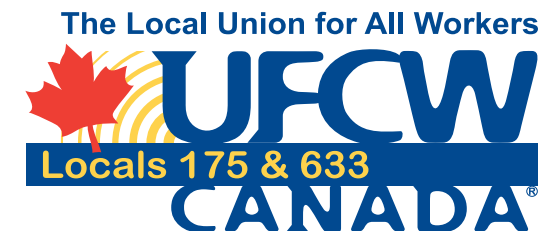
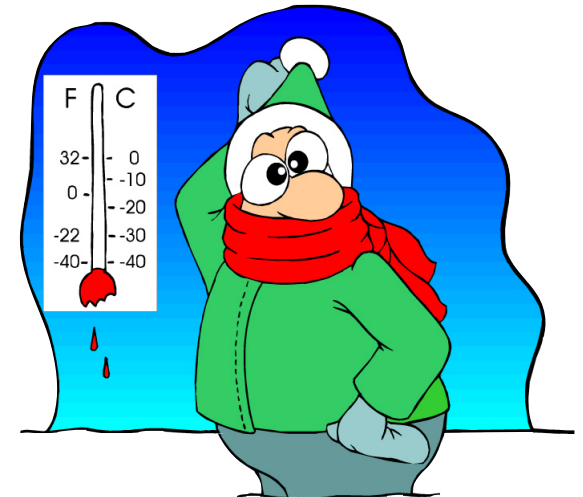
What can be done to Protect You?

- For continuous work in temperatures below the freezing point, heated warming shelters should be available.
- The work should be paced to avoid excessive sweating.
- Proper rest periods in a warm area should be allowed.
- Employees should change into dry clothes.
- New employees should be given enough time to get acclimatized to both the cold and protective clothing, before assuming a full work load.

For more information about working in other cold environments, please refer to our Cold Stress pamphlet.

WORKING IN COLD ENVIRONMENTS

How to Protect Yourself



How to Reduce the Risk

The risk of cold injury can be minimized by the use of proper equipment, safe work practices and appropriate clothing. The following is a summary of actions, including recommendations from the American Conference of Governmental Industrial Hygienists (ACGIH).

HAT

- Almost 50 percent of body heat is lost through the head. A wool knit cap or a liner under a hard hat can reduce excessive heat loss.

LAYERS

- Clothing should be worn in multiple layers. The inner layer should provide insulation and be able to “wick” moisture away from the skin to help keep it dry. Thermal underwear made from polyesters or polypropylene is suitable for this purpose.
- Additional layers should also be easy to open or remove.

FOOTWEAR

- Boots should be felt-lined, rubber bottomed and leather-topped.
- Use removable felt insoles.
- Look for “waterproofed” labeled products.
- Wear one pair of thick, bulky socks or two lighter pairs.
- Liner socks made from polypropylene will help keep feet dry and warmer by wicking sweat away from the skin.
- Have extra socks available so you can dry your feet and change socks during the day.



FOOD

- Balanced meals and lots of fluid are essential to maintain body heat and prevent dehydration.
- Working in the cold requires more energy than in warm weather.
- For warming purposes, hot non-alcoholic beverages or soup are suggested.
- Caffeinated drinks such as coffee should be limited because it increases urine production and contributes to dehydration.
- Caffeine also increases the blood flow at the skin surface which can increase the loss of body heat.

CLOTHING

- Should suit the temperature and duration of activity.
- Sweating will reduce the insulation value of the clothing.
- For work in wet conditions, the outer layer of clothing should be waterproof. If the work area cannot be shielded against wind, an easily removable windbreak garment should be used.

GLOVES

- Gloves should be used for moderate work in temperatures above -7°C . For work below -17°C , mittens should be worn, where possible.
- Cotton fabric is not recommended. Instead, use wool and synthetic fibres, which retain heat when wet.