



Did you know cold-related hazards can cause permanent tissue damage or even death? When the body is unable to warm itself, cold related stress may result.

Canada has one of the most severe winter climates of any country in the world. Across the country Canadians encounter severe cold weather conditions that can affect their health. However, being active and enjoying winter activities is a great way to stay healthy through our chilliest season.

In this edition of our quarterly health and safety bulletin we'll learn how to adjust to cold conditions and stay safe in extreme temperatures so you can enjoy the winter weather.

### Cold-Related Hazards:

1. Cold Air Temperatures
2. High Velocity Air Movement
3. Dampness of the Air
4. Contact with Cold Water or Surfaces

### Cold Stress Risk Factors:

- Working in a wet or damp environment
- Not wearing clothing appropriate for the temperature
- Exhaustion
- Predisposing health conditions such as hypertension, hypothyroidism and diabetes

## Extreme Cold Health Risks & Their Treatments

### WINDBURN

Windburn occurs when cold wind removes the top layer of oil from the skin causing excessive dryness, redness, soreness, and itchiness.

Do not scratch or rub the affected area as it can damage the skin.

- Apply a protective skin care product to the affected area as needed to help relieve the symptoms
- Use a protective lip balm to treat lips

### FROSTBITE

Frostbite generally occurs in body parts furthest from the heart – the hands, feet, nose and ears.

**Mild frostbite** makes your skin look yellowish or white, but still soft to the touch. Your skin might turn red during the warming process, but normal colour returns once the area is warmed.

- Passive warming: move to a warm room, wrap yourself in blankets or reheat your body by skin-to-skin contact with another person.
- Active warming: this can be done along with passive warming. Add heat directly to the frostbitten area. The idea is to thaw the injured skin as quickly as possible without burning yourself. Thawing frostbitten skin is very painful, so the injured skin should be placed in water that is just above body temperature. Do not rub, massage, or shake the injured skin because that can cause more damage.

**Severe frostbite** can cause permanent damage to body tissue if not treated immediately. Nerve damage occurs and frostbitten skin becomes discoloured and turns black. After some time, nerve damage becomes so severe that you will lose feeling in the affected area and blisters will occur. If the skin is broken and becomes infected, gangrene can set in, which can result in loss of limbs.

- If you have severe frostbite seek immediate medical attention. While you are waiting for help to arrive, begin treating it with passive and active warming.

### HYPOTHERMIA

There are three stages of hypothermia. Severe cases of hypothermia (stages 2 & 3) require immediate medical attention.

- **Stage 1:** When your body temperature drops by 1–2°C, you start shivering, get goose bumps on your skin, and your hands become numb. Your breath can become quick and shallow, and you may feel tired and/or sick to your stomach. You might also experience a warm sensation, which means your body is entering stage 2.
- **Stage 2:** Your body temperature has dropped by 2–4°C and your shivering is strong. Muscles are uncoordinated and movements are slow and laboured. You may suffer mild confusion, become pale, and your lips, ears, fingers and toes may turn blue. Any easy test to check – try touching your thumb to your little finger. If you can't, your muscles are not working properly and you're experiencing stage 2 hypothermia.
- **Stage 3:** If your body temperature drops below 32°C the shivering will stop, but you'll have trouble speaking, thinking, and walking. You may even develop amnesia. When your body temperature drops below 30°C exposed skin becomes blue and puffy, it will be hard to move your muscles, and your behaviour becomes irrational. Your heart might be beating quickly, but your pulse and breathing will decrease. At this stage you are at risk of dying.

The following treatment options should be followed for stage 1 hypothermia, or while waiting for help to arrive for more severe hypothermia:

- Find shelter
- Keep your muscles moving
- Dry and gradually warm your body
- Wrap yourself in blankets/dry clothing or reheat your body by skin-to-skin contact with another person
- Drink warm, sweet liquids
- Don't fight shivering, this is one of the ways your body increases its core temperature
- If you are helping someone else and the person is unconscious lay them down and avoid shaking them or handling them roughly as they may have an arrhythmia (irregular heart beat).



## Reduce Your Risk

### Wear appropriate clothing

- Always wear clothing appropriate for the weather. Synthetic and wool fabrics provide better insulation. Some synthetic fabrics are designed to keep perspiration away from your body which keep you dry and further reduce your risk.
- Dress in layers with a wind resistant outer layer. You can remove layers if you get too warm (before you start sweating) or add a layer if you get cold.
- Wear warm socks, gloves, a hat and scarf in cold weather. Be sure to put a scarf over your nose to protect it.
- If you get wet, change into dry clothing as soon as possible. You lose heat faster when you're wet.

### Protect yourself

- On sunny days wear sun glasses, lip balm and sunscreen to protect your skin from UV rays and keep it moisturized to help prevent windburn.
- Wear a face mask and goggles if you are participating in winter activities such as skiing, snowmobiling, or skating to protect your face from frostbite and windburn.
- Keep moving (especially your hands and feet) to keep your blood flowing and maintain your body heat.

### Know the weather conditions

- Pay attention to weather alerts in your area. Special weather statements and warnings are issued when extreme weather is possible nearby.
- Environment Canada issues wind chill alerts to warn you of conditions that will cause frostbite to exposed skin.

### Find shelter and keep moving

- If you are caught in a severe snowstorm, or outside in extreme cold conditions, look for shelter. If there are no buildings around, a small cave, ditch, hollow tree or a vehicle can help reduce your chances of frostbite or hypothermia.
- Even if you find shelter, keep moving to maintain your body heat.

### Winterize your home

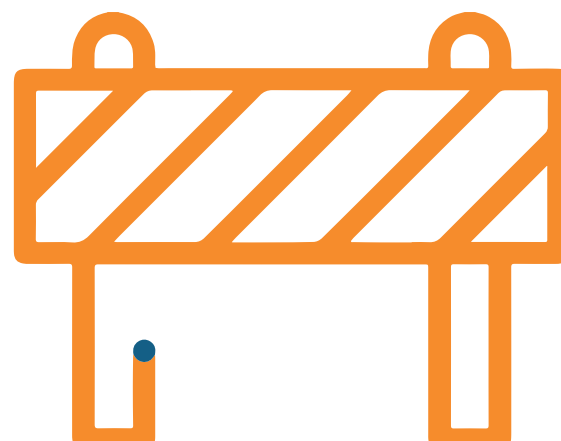
- Prepare your home for cold winter temperatures by doing regular maintenance. Make sure your heating system is working efficiently and seal all cracks and drafts to keep the heat in.

### Avoid alcohol

- Consuming alcohol before you go out in the cold may increase your risk of hypothermia because it increases blood flow to the extremities of the body. You may actually feel warm even though you are losing heat.

### Know your health risks

- Talk to your health care professional to see if you are at an increased risk from extreme cold due to a medical condition.
- If you have health problems such as a heart condition you may wish to avoid strenuous activities like shovelling snow.



Sources: SafetyNow & Health Canada

**Now you're prepared to enjoy our frosty winter wonderland across Canada!**

Have any questions regarding this bulletin, or workplace health and safety?

Contact our operating partner at: [safety@agilus.ca](mailto:safety@agilus.ca)

