

Exposure to Extreme Conditions & Thermal Stress

Under the Occupational Health and Safety Act, employers and supervisors are required to take every reasonable precaution to protect workers. This includes establishing policies and procedures to safeguard employees who work in hot and cold environments.

Extreme warm or cold work environments are occupational hazards. This body may experience thermal stress when there is a change in the environmental temperature. Thermal Stress has two components: heat stress and cold stress, either of which occurs when the core body temperature is no longer maintained at 36-37°C and the body is not able to shiver, sweat or adapt to temperature changes.

The employer will implement a heat & cold stress prevention program that includes:

1. worker training and awareness of the hazards, symptoms, health effects and prevention of heat and cold related illness
2. monitoring temperature, humidex and wind chill factors and adjusting work schedules and tasks accordingly in the presence of heat or extreme cold warnings by Environment Canada
3. responses or preventative measures (e.g. acclimatizing workers to working conditions, buddy system, increase frequency of breaks, reduce the work pace and workload, wearing appropriate clothing and PPE, establishing warm up or cool down schedules, wearing sun screen outdoors, etc.)
4. a water supply plan and encourage employee hydration (e.g. at least 1 cup every 20 min.) and
5. first aid and emergency responses, including monitoring of worker symptoms, and investigating incidents of health-related illnesses

RISKS OF EXTREME HEAT:

When heat is combined with other factors such as strenuous physical work, loss of fluids, fatigue, or certain medical conditions, it can result in heat-related illnesses, serious health complications, or even death. Heat stress occurs when the body is unable to effectively regulate and cool itself, which may lead to conditions such as dehydration, heat exhaustion, heat stroke, and other heat-related illnesses.

To reduce the risk of heat stress, employers and supervisors will:

- Provide access to cool drinking water and encourage frequent hydration.
- Schedule strenuous work during cooler parts of the day where possible.
- Provide shaded or cooled rest areas.
- Gradually acclimatize workers to hot environments.
- Increase rest breaks during periods of high heat and humidity.
- Use ventilation, fans, or cooling equipment where practicable.
- Require workers to wear lightweight, breathable clothing when appropriate.
- Monitor weather conditions and humidex levels.

It is important to understand the symptoms and take preventative measures against heat related stresses in order to function effectively in such conditions.

Signs and Symptoms of Heat Stress

Workers and supervisors should watch for:

- Heavy sweating or hot, dry skin
- Irritability
- Dizziness or fainting
- Headache
- Nausea or vomiting
- Muscle cramps
- Fatigue or weakness
- Confusion or loss of coordination
- Excessive thirst
- High body temperature

Emergency Response – Heat Stress

If a worker shows signs of heat-related illness:

1. Move the worker to a cool or shaded area.
2. Provide drinking water, clear juice or a sports drink if conscious.
3. Remove as many clothes as possible (including socks & shoes).
4. Apply cool wet cloths or ice to the head, face, neck, armpits and groin.
5. Seek medical attention immediately if symptoms are severe or do not improve.
6. Call emergency services immediately for suspected heat stroke.

Printable PDFs & training resources available at: <https://www.ohcow.on.ca/heat-stress-toolkit/>

RISKS OF EXTREME COLD:

When cold is combined with other stresses such as hard physical work, loss of fluids, fatigue or some medical conditions, it may lead to cold-related illness, disability and even death. Cold stress is caused by exposure to cold temperatures, wind, or wet conditions that may lead to hypothermia, frostbite, or other cold-related illnesses.

To reduce the risk of cold stress:

- Provide appropriate insulated clothing and PPE.

- Take steps to ensure workers remain dry and protected from wind exposure.
- Provide heated shelters or warming areas.
- Schedule warm-up breaks during cold weather exposure.
- Limit exposure times during extreme cold conditions.
- Monitor weather conditions, including wind chill.
- Encourage workers to work in pairs or teams when possible

It is important to understand the symptoms and take preventative measures against cold related stresses in order to function effectively in such conditions.

Signs and Symptoms of Cold Stress

Workers and supervisors should watch for:

- Shivering
- Numbness or tingling
- Nausea
- Slurred speech
- Loss of coordination
- Fatigue or confusion
- Pale or waxy skin
- Pain in extremities (hands, feet, ears, etc.)
- Irritability or euphoria

Emergency Response – Cold Stress

If a worker shows signs of cold-related illness:

1. Move the worker to a warm, sheltered area.
2. Remove any wet clothing and replace with dry clothing or blankets.
3. Warm the worker gradually.
4. Provide warm fluids if conscious.
5. Call emergency services immediately for suspected hypothermia frostbite, or if the worker is unconscious and symptoms are severe.

Approved By:	Issue Date:	Revision Date:
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For further information, see the appropriate current Occupational Health & Safety Legislation.