



# Heat Stress

### What is heat stress?

Heat stress occurs when the body is exposed to prolonged heat exposure causing a rise in the core body temperature faster than the body can cool itself down. The most common forms of heat stress include heat exhaustion, heat stroke, dehydration and sunburn. During the summer months it is important to watch for signs of heat stress and take preventative action when symptoms arise.

| Heat Related Illnesses                                                                                                                                                                                                                                                                                                                                                               | Symptoms                                                                                                                                                                                                                                                                     | Treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <p><b><u>Heat Exhaustion</u></b></p> <p>Occurs when there is depletion of both water and salt in the body, due to prolonged sweating.</p> <p>If heat exhaustion is left untreated it can escalate to heat stroke.</p>                                                                                                                                                                | <ul style="list-style-type: none"><li>➤ Headache</li><li>➤ Excessive sweating</li><li>➤ Dizziness/faintness</li><li>➤ Nausea/vomiting</li><li>➤ Cool, pale, clammy skin</li><li>➤ Rapid and weak pulse</li><li>➤ Muscle cramps</li></ul>                                     | <ul style="list-style-type: none"><li>➤ Move individual to a shaded area or cooler environment.</li><li>➤ Remove or loosen any tight-fitting clothing.</li><li>➤ Begin to cool individual by fanning and sponging with water. Immediately stop cooling individual if they begin to shiver.</li><li>➤ If an individual is not nauseated, provide small amounts of fluids such as water, juice or sports drinks.</li></ul>                                                                                                                                                                                                                                                                    |
| <p><b><u>Heat Stroke</u></b></p> <p><b>CALL 911 IMMEDIATELY if heat stroke is suspected.</b></p> <p>This is a life-threatening condition caused by a rise in the body's core temperature. When this occurs, the body can no longer regulate heat.</p> <p>Without immediate medical attention, heat stroke can result in loss of consciousness, permanent brain damage and death.</p> | <ul style="list-style-type: none"><li>➤ Confusion/slurred speech</li><li>➤ Not sweating</li><li>➤ Nausea/vomiting</li><li>➤ Red, hot, dry skin</li><li>➤ Rapid and strong pulse</li><li>➤ High body temperature</li><li>➤ Loss of consciousness</li><li>➤ Seizures</li></ul> | <ul style="list-style-type: none"><li>➤ <b>Call 911</b> for immediate medical attention or call 811 and follow medical directions.</li><li>➤ Move individual to a shaded area or cooler environment.</li><li>➤ Remove or loosen any tight-fitting or excess articles of clothing (i.e. socks, shoes).</li><li>➤ Fan and cool an individual using a wet cloth or article of clothing. <b>DO NOT rapidly cool individual using ice or cold water.</b></li><li>➤ If an individual is conscious, offer small sips of room temperature/lukewarm water. <b>DO NOT allow an individual to ingest large amounts of cold water.</b></li><li>➤ Stay with the individual until help arrives.</li></ul> |

### Did You Know:

Sweat is an important indicator when determining the difference between heat exhaustion and heat stroke.

**Sweat Present = Heat Exhaustion**  
**No Sweat Present = Heat Stroke**

Check symptoms list above and follow treatment instructions.

### Risk Factors

Many factors play a role when it comes to heat stress. Factors that contribute to the risk of heat stress include; the activities/work being performed, the environment and worker specific factors, as described below.

| Activities/Work                                                                                                                          | Environment                                                                                                                                                             | Worker Specific                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>➤ Work Duration</li><li>➤ Workload (i.e. light, moderate, or heavy lifting &amp; moving)</li></ul> | <ul style="list-style-type: none"><li>➤ Humidity</li><li>➤ Air Flow</li><li>➤ Air Temperature</li><li>➤ Additional Heat Sources (i.e. ovens, boilers, motors)</li></ul> | <ul style="list-style-type: none"><li>➤ Hydration</li><li>➤ Previous Weather Acclimatization</li><li>➤ Clothing</li><li>➤ Medical Conditions</li></ul> |

### Employer Responsibilities

It is an employer's responsibility to monitor activities/work and environmental factors associated with heat stress. When employees are conducting strenuous moderate to heavy workload activities, encourage regular breaks and fluid intake. An employer should also be mindful of humidity, air flow, air temperature and UV index levels by monitoring threshold limit values set by the American Conference of Governmental Industrial Hygienists (ACGIH).

### Employee Responsibilities

Employees are responsible for monitoring their specific personal risk factors associated with heat stress including being fit for duty. To help reduce the risk of heat related illnesses when working in hot temperatures, follow these practices.

- **Stay hydrated** - Drink plenty of fluids, such as water, to replenish lost fluids from sweat. Avoid fluids that contain caffeine or alcohol. *It is recommended to drink one 8 oz glass of water every 15-20 minutes when working outdoors in heat.*
- **Wear the appropriate clothing** - When working outdoors, choose light clothing made of breathable material. Wear a wide brim hat and sunglasses for extra protection.
- **Use sunscreen** - It is recommended to wear sunscreen with an SPF of 30 or greater and reapply every hour when outdoors.
- **Stay informed** - For more information regarding sun safety practices, refer to the Chief Public Health Office's direction or contact the Employee Wellness and Safety Team at [safety@gov.pe.ca](mailto:safety@gov.pe.ca) for resources regarding sun safety.
- For more information related to heat stress prevention visit the [WCB PEI Heat Stress Prevention Guide](#).

# Working in the *Heat*

Employers can take measures to protect workers from heat stress disorders by avoiding heavy exertion tasks, extreme heat, sun exposure, and high humidity when possible.

## Provide plenty of water.

Workers should drink a cup every 15 to 20 minutes, thirsty or not, and avoid caffeine and alcohol.



**Provide breaks to rest and cool off**, preferably in a cool area, in the shade or in air-conditioned buildings or vehicles.



## Set up shade structures.

Umbrellas, buildings, and trees can also shield workers from the rays of the sun. Note: you can still get sunburn on a cloudy day.



**Make sure outdoor workers wear light, loose-fitting clothing, UV-rated sunglasses and a wide-brim hat.** Provide sunscreen with a sun protection factor (SPF) of at least 30 and UVA/UVB protection, and allow workers to re-apply every 2 hours and after sweating.



**Gradually increase work load and heat exposure** to give workers time to adjust to working in the heat.



**Schedule less strenuous tasks between 11am-4pm** when the sun's rays are strongest.



**Protective clothing or personal protective equipment** may increase heat retention. Be sure to plan work and breaks accordingly.



**Provide education and training about heat-related illnesses.** People are generally unable to notice their own heat stress-related symptoms and depend on their co-worker's ability to recognize these symptoms and seek timely first aid and medical help.



## When is hot too hot?



**Legislation** is not always specific about the acceptable range for temperature conditions at work, especially when working outdoors. In some cases, for specific circumstances, the Threshold Limit Values for heat stress from the American Conference of Governmental Industrial Hygienists have been formally adopted as occupational exposure limits in some jurisdictions, while others use them as guidelines.

As the temperature or heat burden increases, workers may feel:



Increased irritability



Loss of concentration and ability to do mental tasks



Loss of ability to do skilled tasks or heavy work

**heat exhaustion**  
nausea  
headache  
heavy sweating  
cold, pale, moist skin  
muscle cramps  
dizziness  
weakness  
fatigue

**Move** to a cooler, shaded location.

**Remove** as much clothing as possible (including socks and shoes).

**Cool** down by applying cool wet cloths or ice to the head, face or neck. Spray with cool water.

**Drink** water, clear juice or a sports drink.

**Provide** medical aid if the person does not start to feel better.

**Stay** with the person until help arrives.



**heat stroke**  
nausea  
hot, dry skin  
loss of consciousness  
confusion  
strange behaviour  
high body temperature  
headache



**Call 911 immediately**

This is a medical emergency. Stay with the person until help arrives.