In Ontario, asbestos remediation requires full-body protective coveralls, head coverings, and other personal protective equipment such as respirators, gloves, and boots. These types of protective clothing can put workers at increased risk of developing heat-related illnesses.

Every year in Ontario, workers succumb to the effects of excessive heat at their workplaces. These events are not limited to the summer months. They can happen at any time of the year.

**What are the risk factors for heat stress?**

A variety of factors can come together to put workers at risk of developing heat-related illnesses. These risk factors can be categorized as environmental, work-related, and personal.

**Environmental risk factors**
- Air temperature
- Humidity
- Radiant heat (sun or furnaces)
- Air velocity

**Work-related risk factors**
- Work rate
- Clothing (including PPE)
- Heart disease

**Personal risk factors**
- Weight
- Physical health
- Previous heat illness
- Age
- Heart disease
- High or low blood pressure
- Recent illness
- Alcohol consumption
- Medication
- Acclimatization
What are the symptoms of heat-related illness?
As a person’s body temperature rises, the body attempts to cool itself. If the body’s natural cooling system becomes overwhelmed, a heat-related illness can occur.

<table>
<thead>
<tr>
<th>ILLNESS</th>
<th>SYMPTOMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat rash</td>
<td>Red blotches on the skin and a prickly sensation</td>
</tr>
<tr>
<td>Heat cramps</td>
<td>Spasms in larger muscles from prolonged sweating</td>
</tr>
<tr>
<td>Heat exhaustion</td>
<td>Weakness, headache, nausea or vomiting, and feeling faint or actually fainting</td>
</tr>
<tr>
<td>Heat stroke</td>
<td>Weakness, confusion, hot and dry skin, fast pulse, headache, and dizziness. In later stages, the worker may pass out, develop convulsions, and die. THIS IS A MEDICAL EMERGENCY.</td>
</tr>
</tbody>
</table>

Is there a law that requires workplaces to protect workers from heat stress?
Under section 25 of the Occupational Health and Safety Act, employers must take every precaution reasonable to protect workers. This includes protecting them from heat-related illnesses.

The Ministry of Labour has published a guideline that helps employers develop and implement workplace policies to prevent heat-related illnesses. See the resources at the end of this document for more information.

What measures can be taken to prevent heat stress?
1. **Assess the risk of heat stress before work begins.**
   
   Before you start, consider the risk factors (environmental, work-related, and personal) and how they apply to the job. For high-risk situations, measure the thermal environment by assessing the Wet-Bulb Globe Temperature (WBGT). The WBGT takes into consideration the contribution to heat stress by the air temperature, radiant heat, and humidity. By using the WBGT, knowing the type of clothing used by workers, and determining the rate at which they will be working, a work-rest regimen can be implemented to ensure heat stress exposure is maintained within acceptable limits.

2. **Train workers and supervisors to recognize heat stress symptoms.**
   
   A person who is experiencing a heat-related illness may not realize what is happening to them. That’s why it’s important for all workers to recognize heat stress symptoms in themselves and especially in co-workers. Workers should be trained to understand the following concepts:
   
   - Heat stress situations
   - Risk factors (environmental, work-related and personal)
   - Danger signs and symptoms
   - Procedures to avoid heat stress
   - Emergency response and first aid treatment in Type 3 asbestos operations.
3. **Use engineering controls.**

The engineering controls used to prevent heat stress in conventional workplaces may not be applicable to asbestos operations as these could generate fibres. However, some controls that should be considered to minimize heat stress are:

- Using mechanical devices to reduce the physical work (i.e., lifts, carts, etc.)
- Using reflective shields to prevent emission of radiant energy.

4. **Use administrative controls.**

Ensure workers:

- take frequent breaks in air-conditioned environments
- drink plenty of water before putting on personal protective clothing
- have had enough time to acclimatize to the heat.

5. **Supply the proper personal protective equipment (PPE).**

When selecting PPE, consider the weight of the equipment while also ensuring that it provides adequate protection from asbestos exposure.

6. **Encourage personal responsibility.**

- Advise workers to avoid drinking alcoholic beverages the night before working.
- Advise workers to avoid drinking coffee, teas, or caffeinated beverages during work. Substitute these beverages for water or drinks that replenish electrolytes.
- Remind workers to keep an eye out for symptoms of heat stress in other workers.

An acclimatization program should be instituted to ensure workers who have been away from the job or are new to the job are gradually introduced to hot environments. Generally, healthy individuals require 5 to 10 days for acclimatization to heat. The time depends on a variety of factors such as the degree of heat and humidity, their general health, and their work schedule.

For more information on protecting workers from heat stress, visit:

[www.ihsa.ca/topics_hazards/heat_stress.cfm](http://www.ihsa.ca/topics_hazards/heat_stress.cfm)

Also, visit the heat stress page on the Ministry of Labour website: [www.labour.gov.on.ca](http://www.labour.gov.on.ca)

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