# HOT WEATHER SAFETY GUIDELINES

## OVERVIEW
This guideline is intended to provide City of Hamilton employees with general practical information pertaining to hot weather safety. Staff must also follow any departmental policies, procedures and guidelines pertaining hot weather safety.

## DEFINITIONS
The following terms referenced in this guideline are defined as:

**Acclimatization**
Adapting to changes in the environment such as a new temperature.

**Heat Cramps**
Painful, brief muscle cramps that occur during exercise or work in a hot environment.

**Heat Exhaustion**
Heat exhaustion occurs when a person exercises or works in a hot environment and sweating cannot dissipate the heat generated within the body.

**Heat Rash**
Red, bumpy rash with severe itching related to heat.

**Heat Stress**
A group of conditions caused by overexposure to and/or overexertion in excess environmental temperature.

**Heat Stroke**
A core body temperature that rises above 104 F (40 C) accompanied by hot, dry skin and central nervous system abnormalities that may include delirium, convulsions, or coma.

**Ultraviolet Radiation (UV)**
A small part of the electromagnetic radiation spectrum from the sun. It is divided into three types – UVA, UVB and UVC.

## GUIDELINES
### Heat Stress
Exposure to heat may occur in many workplaces. This heat may be processed (furnaces, bakeries) or from the hot weather. When heat is combined with other stresses such as physical work, loss of fluids, fatigue or medical conditions it can lead to heat related illness, disability or even death. In order to prevent these conditions the following guidelines are recommended:

- **Acclimatization** – there are two ways to acclimatize:
  1. If you are experienced on the job, limit your time in hot working conditions to 50% of the shift on the first day, 60% on the second day and 80% on the third day. By the fourth day you could work a full shift in the heat.
  2. If you are not experienced on the job, you should start off at 20% in the hot working condition and increase by 20% each day until the full shift is being completed in the heat.

- **Drink lots of water and natural fruit juices even if you don’t feel thirsty.**
- **Avoid alcohol or caffeinated beverages such as coffee, teas and**
- Avoid direct sunlight.
- Wear light summer clothing to allow for free air movement and sweat evaporation.
- Avoid strenuous physical activity outdoors.
- Go into places that are air conditioned.
- If you have a medical condition, speak with your physician regarding working in hot environments.

Workplaces may want to consider the following in periods of extreme heat and humidity (Humidex greater or equal to 40):

- Increase frequency and length of rest breaks.
- Provide air conditioned or cool rest areas.
- Increase air movement (fans).
- Schedule strenuous jobs for cooler times of the day.
- Provide cool drinking water near workers and remind them to drink every 20 minutes.
- Caution workers to avoid direct sunlight.
- Assign additional workers or slow down the pace of work.
- Take the time to acclimatize employees.
- Train workers to recognize signs and symptoms of heat stress and as people are not likely to notice their own symptoms to use a buddy system (see Appendix A).
- Encourage pregnant workers and those with medical conditions to discuss working in the heat with their physician.
- First aid responders and an emergency response plan should be in place in the event of a heat-related illness.
- Review Human Resources Guideline “Ultra Violet Radiation from the Sun Safety” as needed.

<table>
<thead>
<tr>
<th>CONTENT UPDATED</th>
<th>2013-04-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>HISTORY</td>
<td>The following guidelines were reviewed for this guideline: Corporate Safety Guideline – Ultraviolet Radiation from the Sun (March, 1994) Corporate Safety Guideline – Heat Stress (Revised March 22, 2005)</td>
</tr>
<tr>
<td>OTHER DOCUMENTS</td>
<td>ULTRA VIOLET RADIATION FROM THE SUN SAFETY GUIDELINES (Updated April 17, 2013) CORPORATE SMOG RESPONSE PLAN (2012)</td>
</tr>
</tbody>
</table>
Appendix A

A summary of heat stress–related disorders, causes, symptoms, treatment and prevention is presented in the table below.

<table>
<thead>
<tr>
<th></th>
<th>Cause</th>
<th>Symptoms</th>
<th>Treatment</th>
<th>Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heat Rash</strong></td>
<td>Hot humid environment; plugged sweat glands.</td>
<td>Red bumpy rash with severe itching.</td>
<td>Change into dry clothes and avoid hot environments. Rinse skin with cool water.</td>
<td>Wash regularly to keep skin clean and dry.</td>
</tr>
<tr>
<td><strong>Heat Cramps</strong></td>
<td>Heavy sweating from strenuous physical activity drains a person's body of fluid and salt, which cannot be replaced just by drinking water. Cramps occur from salt imbalance resulting from failure to replace salt lost from heavy sweating.</td>
<td>Painful cramps commonly in the most worked muscles (arms, legs or stomach) which occur suddenly at work or later at home. Heat cramps are serious because they can be a warning of other more dangerous heat-induced illnesses.</td>
<td>Move to a cool area; loosen clothing, gently massage and stretch affected muscles and drink cool salted water (¼ to ½ tsp. salt in 1 litre of water) or balanced commercial fluid electrolyte replacement beverage. If the cramps are severe or don't go away after salt and fluid replacement, seek medical aid. Salt tablets are not recommended.</td>
<td>Reduce activity levels and/or heat exposure. Drink fluids regularly. Workers should check on each other to help spot the symptoms that often precede heat stroke.</td>
</tr>
<tr>
<td><strong>Fainting</strong></td>
<td>Fluid loss, inadequate water intake and standing still, resulting in decreased blood flow to brain. Usually occurs in unacclimatized persons.</td>
<td>Sudden fainting after at least two hours of work; cool moist skin; weak pulse.</td>
<td>GET MEDICAL ATTENTION. Assess need for CPR. Move to a cool area; loosen clothing; make person lie down; and if the person is conscious, offer sips of cool water. Fainting may also be due to other illnesses.</td>
<td>Reduce activity levels and/or heat exposure. Drink fluids regularly. Move around and avoid standing in one place for too long. Workers should check on each other to help spot the symptoms that often precede heat stroke.</td>
</tr>
</tbody>
</table>
## Heat Exhaustion

<table>
<thead>
<tr>
<th>Description</th>
<th>Symptoms</th>
<th>Prevention &amp; Aid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid loss and inadequate salt and water intake causes a person's body's cooling system to start to break down.</td>
<td>Heavy sweating; cool moist skin; body temperature over 38°C; weak pulse; normal or low blood pressure; person is tired and weak, and has nausea and vomiting; is very thirsty; or is panting or breathing rapidly; vision may be blurred.</td>
<td>GET MEDICAL ATTENTION. This condition can lead to heat stroke, which can kill. Move the person to a cool shaded area; loosen or remove excess clothing; provide cool water to drink; fan and spray with cool water. Do not leave affected person alone.</td>
</tr>
</tbody>
</table>

## Heat Stroke

<table>
<thead>
<tr>
<th>Description</th>
<th>Symptoms</th>
<th>Prevention &amp; Aid</th>
</tr>
</thead>
<tbody>
<tr>
<td>If a person's body has used up all its water and salt reserves, it will stop sweating. This can cause body temperature to rise. Heat stroke may develop suddenly or may follow from heat exhaustion.</td>
<td>High body temperature (over 41°C) and any one of the following: the person is weak, confused, upset or acting strangely; has hot, dry, red skin; a fast pulse; headache or dizziness. In later stages, a person may pass out and have convulsions.</td>
<td>CALL AMBULANCE. This condition can kill a person quickly. Remove excess clothing; fan and spray the person with cool water; offer sips of cool water if the person is conscious.</td>
</tr>
</tbody>
</table>

Reduce activity levels and/or heat exposure. Drink fluids regularly. Workers should check on each other to help spot the symptoms that often precede heat stroke.

( Ontario Ministry of Labour, 2012)

## References


