

# How does heat stress impact safety?



## What is heat stress?

When heat is combined with other stresses such as physical activity, loss of fluids, fatigue or some medical conditions, it may lead to heat-related illness, disability and even death. Heat stress occurs when external factors prevent the body from naturally cooling itself down.

## How could it affect me?

Heat stress can affect anyone who becomes overheated and is especially a cause for concern for people who work in warm environments.

*Heat stress can be dangerous because it puts workers at risk of heat-related illnesses such as:*

- ① Heat rash
- ② Heat exhaustion
- ③ Heat cramps
- ④ Heat collapse (fainting)
- ⑤ Heat fatigue
- ⑥ Heat stroke

Heat stroke is a serious condition that can result in a permanent disability or death.

The symptoms of heat stress can include nausea, dizziness, muscle cramps, weakness, feeling faint, headache, fatigue, thirst, excessive sweating and higher-than-normal body temperature.<sup>1</sup> Heat stress can develop into heat stroke and become fatal if not treated.

Although the effects of heat stress are usually reversible, there are some studies that indicate long-term effects. The long-term effects can include chronic heat exhaustion, sleep issues and increased vulnerability to minor injuries and illnesses.

## When am I at risk?

---

Heat stress can occur when your body is unable to properly manage heat and is often the result of working in warm environments.

Many workers in Canada are affected by heat stress. Some typical occupations where heat stress can be a concern are construction, road work, mining, farming and baking. Other industries that may have heat sources as a part of their processes include steel mills, foundries, smelters, fabricators, laundries and food preparation.

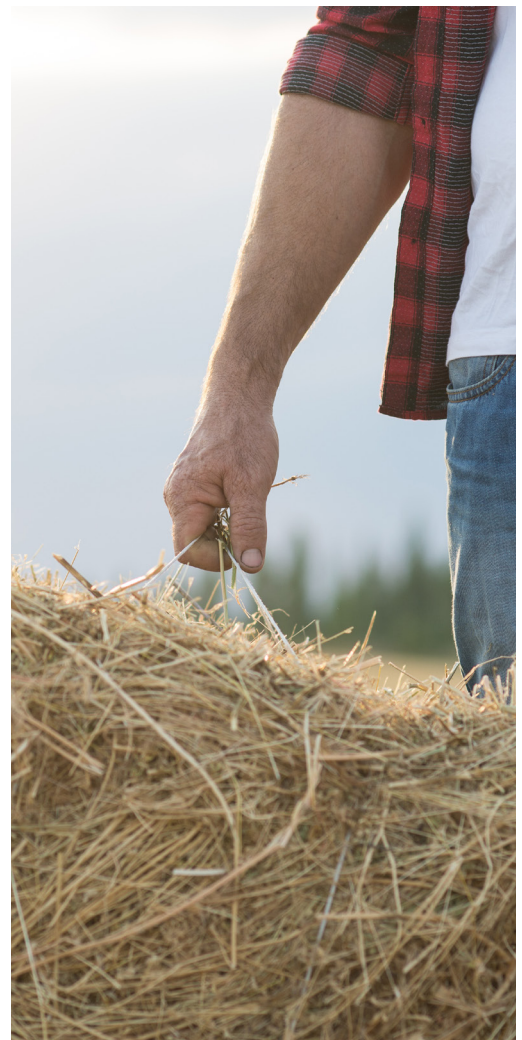
Common sources of heat can come from the summer sun, hot or molten materials or indoor environments that have high heat and high humidity.

There are several factors which influence your ability to adapt or acclimatize to heat. People who have the following characteristics are often considered to be susceptible to heat stress: overweight, middle aged or older, in poor health, have a low fitness level, have a pre-existing medical condition or are on certain medications. People who possess these characteristics may be more susceptible to heat stress and may take longer to acclimatize to exposure to heat.

## What can I do to protect myself?

---

One way workers at risk of heat stress can protect themselves is through acclimatization. Acclimatization naturally occurs when your body gets used to being in the heat and becomes better able to cool itself down. This means that your heart becomes more efficient and you'll start sweating sooner. This is why workers who are new to a job take longer to acclimate to the heat than workers who are used to working in the heat.



Taking a proactive approach to managing heat stress through environmental controls is crucial. There are several things a worker can do to protect themselves while they are on the job:

- ▶ As permitted by the job task, wear light, breathable clothing such as cotton or other sweat-wicking materials.
- ▶ Wear sunscreen if you are working outdoors.
- ▶ Drink at least one cup of water every 20-30 minutes, even if you do not feel thirsty.
- ▶ Avoid caffeinated beverages.
- ▶ Eat small, light meals.
- ▶ Ensure scheduled breaks are taken.
- ▶ If you are on any medications, ask your doctor if it will affect your heat tolerance.
- ▶ Maintain a healthy lifestyle in terms of diet, exercise and body weight.
- ▶ Be able to recognize the symptoms of heat stress.<sup>2</sup>

## **What should I do if someone is suffering from heat stress?**

---

If you feel yourself experiencing any of the symptoms of heat stress, take a break and find a cool area to rest. Drink cool water and remove any excess, or layers, of clothing.

If you suspect someone is suffering from heat stroke, immediately call 911. Heat stroke can prove to be fatal very quickly so it's important to take immediate action. Remove excess layers of clothing, fan the person and spray them with cool water while you wait for the ambulance to arrive. If the person is conscious, offer them sips of cool water.



# Resources

---

Brenda Jacklitsch, MS, “Adjusting to Work in the Heat: Why Acclimatization Matters,” Centers for Disease Control and Prevention, <http://blogs.cdc.gov/niosh-science-blog/2014/07/14/acclimatization/> (July 14, 2014).

“OHS Answers Fact Sheet,” Canadian Centre for Occupational Health and Safety, [https://www.ccohs.ca/oshanswers/phys\\_agents/heat\\_health.html](https://www.ccohs.ca/oshanswers/phys_agents/heat_health.html) (February 17, 2017).

“Climate Change and Health,” Health Canada, <http://www.hc-sc.gc.ca/ewh-semt/pubs/climat/index-eng.php> (May 6, 2015).

“Protect Yourself from Extreme Heat,” Health Canada, [http://www.hc-sc.gc.ca/ewh-semt/pubs/climat/heat-active\\_chaleur-actif/index-eng.php](http://www.hc-sc.gc.ca/ewh-semt/pubs/climat/heat-active_chaleur-actif/index-eng.php) (October 24, 2011).

“Heat Stress,” The National Institute for Occupational Safety and Health (NIOSH), <https://www.cdc.gov/niosh/topics/heatstress/> (July 19, 2016).

“Protecting Yourself from Heat Stress,” The National Institute for Occupational Safety and Health (NIOSH), <https://www.cdc.gov/niosh/docs/2010-114/pdfs/2010-114.pdf> (2010).

“Protect Your Workers from Heat Stress,” The National Institute for Occupational Safety and Health (NIOSH), <https://www.cdc.gov/niosh/topics/heatstress/infographic.html> (July 3, 2014).

“Heat Stress Awareness Guide,” Occupational Health Clinics for Ontario Workers, Inc., [http://www.ohcow.on.ca/edit/files/ohsco\\_heat\\_stress\\_awareness\\_guide\\_heat\\_stress\\_guide.pdf](http://www.ohcow.on.ca/edit/files/ohsco_heat_stress_awareness_guide_heat_stress_guide.pdf) (April 2007).

“Heat Stress,” Ontario Ministry of Labour, [https://www.labour.gov.on.ca/english/hs/pubs/gl\\_heat.php](https://www.labour.gov.on.ca/english/hs/pubs/gl_heat.php) (June 2015).

<sup>1</sup> “OHS Answers Fact Sheet,” Canadian Centre for Occupational Health and Safety, [https://www.ccohs.ca/oshanswers/phys\\_agents/heat\\_health.html](https://www.ccohs.ca/oshanswers/phys_agents/heat_health.html) (February 17, 2017).

<sup>2</sup> “OHS Answers Fact Sheet,” (February 17, 2017).

<sup>3</sup> Brenda Jacklitsch, MS, “Adjusting to Work in the Heat: Why Acclimatization Matters,” Centers for Disease Control and Prevention, <http://blogs.cdc.gov/niosh-science-blog/2014/07/14/acclimatization/> (July 14, 2014).

<sup>4</sup> “Heat Stress Awareness Guide,” Occupational Health Clinics for Ontario Workers, Inc., [http://www.ohcow.on.ca/edit/files/ohsco\\_heat\\_stress\\_awareness\\_guide\\_heat\\_stress\\_guide.pdf](http://www.ohcow.on.ca/edit/files/ohsco_heat_stress_awareness_guide_heat_stress_guide.pdf) (April 2007).

<sup>5</sup> “Heat Stress Awareness Guide,” April 2007.