

Beat the Heat: Identifying and Treating Heat Related Disorders

This Fast Fact is intended to help employees working in hot environments. It will also help OH&S professionals recognize and manage risk factors associated with heat-related disorders.

Currently, the Ontario Occupational Health and Safety Act and related regulations do not specifically outline any control methods with regards to managing heat exposure. However, sections 25(2) (h) and 27(2) (c) state that employers and supervisors must take "reasonable precaution" to protect their employees. Additionally, sections 21(1)(c) and 21(3) of the Health Care and Residential Facilities regulation state that "...an enclosed workplace shall be maintained at a temperature that is not likely to cause physical stress due to heat" and that the employer must put into place measures and procedures to ensure that a worker not be exposed to heat stress conditions that are likely to endanger or injure the worker.

Who is at greatest risk?

- Laundry staff
- Dietary staff
- Facilities staff (such as maintenance, housekeeping, and groundskeepers)
- Any staff working with clients/patients/residents outdoors
- Any staff working in warm or non air-conditioned environments

What is Heat Stress?

Heat stress is the combined heat load to which an employee may be exposed from a number of sources such as:

- High temperature and humidity
- Direct sun or radiant heat sources
- Limited air movement
- Physical exertion
- Poor physical condition
- Certain medications
- Workplace clothing requirements
- Inadequate acclimatization to hot environments

Mild or moderate heat stress may cause discomfort and affect employee performance and safety. However, it is not typically harmful to health. As heat stress levels increase to the human tolerance limit, the risk of heat-related disorders will also increase. Heat related-disorders include heat exhaustion, heat stroke, heat cramps and heat rash.

Recognizing and treatment measures for heat related disorders

Disorder	Cause	Symptoms	Suggested Treatment
Heat Stroke	<p><i>Classic heat stroke occurs in situations where the body's internal temperature regulation system fails.</i></p> <p><i>Exertional heat stroke occurs when heavy physical exertion is performed in high temperature environments.</i></p>	<ul style="list-style-type: none"> • Sweat production stops and skin feels hot and dry to the touch • Body temperature greater than 40°C • Noisy breathing • Headache • Confusion • Nausea and vomiting • Loss of consciousness 	<ul style="list-style-type: none"> • <i>Emergency assistance and first aid are required IMMEDIATELY as it can be fatal</i> • <i>Move individual to a cool location</i> • <i>Immerse individual into a cool bath</i> • <i>Use a cool sponge or compress on individual's armpit, neck, and groin</i> • <i>Place conscious individual on their back with legs elevated</i> • <i>Place unconscious individual in the recovery position (on their side)</i>

<i>Disorder</i>	<i>Cause</i>	<i>Symptoms</i>	<i>Suggested Treatment</i>
<i>Heat Exhaustion</i>	<i>Loss of body fluids from excessive sweating in a hot, humid environment where sweating does not allow the body to cool</i>	<ul style="list-style-type: none"> • Continuous sweating • Weakness or fatigue • Visual disturbances • Intense thirst • Heart palpitations • Muscle cramps • Dizziness • Nausea and vomiting • Headache • Loss of consciousness 	<ul style="list-style-type: none"> • <i>Emergency assistance and first aid are required IMMEDIATELY as this may lead to heat stroke</i> • <i>Move to a cool place where feet and legs can be elevated</i> • <i>Remove excess clothing</i> • <i>Loosen tight fitting clothing at the neck and waist</i> • <i>Drink fluids</i> • <i>Take a cool shower or bath</i> • <i>Rest</i> • <i>Change into lightweight clothing</i>
<i>Heat Cramps</i>	<i>Due to high temperatures, the individual sweats profusely. To compensate for water loss, the individual drinks large quantities of water; however, salt loss is not replenished.</i>	<ul style="list-style-type: none"> • Painful muscle spasms in arms, abdomen, or legs. • Occurs alone or in conjunction with other heat related disorders 	<ul style="list-style-type: none"> • <i>Drink clear juices or sports drinks</i> • <i>Sit in a cool place and rest</i> • <i>Refrain from returning to original activity for a few hours after cramps subside</i> • <i>If cramps do not subside within 1 hour, seek medical attention</i>
<i>Heat Rash</i>	<i>Occurs in hot, humid environments in which the sweat on the surface of the skin is not able to evaporate. The skin remains moist, which in turn can cause the sweat glands to plug and a skin rash to occur.</i>	<ul style="list-style-type: none"> • Tiny bumps surrounded by an area of red skin • Prickling or stinging sensation of the skin 	<ul style="list-style-type: none"> • <i>Rest in a cool place</i> • <i>Allow moisture on skin to dry</i> • <i>Do not administer ointments or creams as these will keep the skin moist</i>
<i>Heat Syncope</i>	<i>Giddiness and fainting induced by temporary loss of blood flow to the brain while a person is standing caused by the pooling of blood in the lower extremities.</i>	<ul style="list-style-type: none"> • Giddiness and fainting 	<ul style="list-style-type: none"> • <i>Move to a cool place</i> • <i>Have individual lie down</i>

Please see Fast Fact FHEAE 148, *Beat the Heat: Preventing Heat Related Disorders* for information on control measures.



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FHEAE147 • Rev. 06/06 • ISBN 1-894878-30-2