HealthLinkBC

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Heat-related illness

What is heat-related illness?

Too much heat can be harmful to your health. Heat-related illness is the result of your body gaining heat faster than it can cool itself down. Heat-related illnesses can almost always be prevented.

Heat-related illness can lead to weakness, disorientation and exhaustion. In severe cases, it can lead to heat stroke, also known as sunstroke. Heat stroke is a life-threatening medical emergency. The effects of heat are made worse if you do not drink enough fluids to stay hydrated.

What causes heat-related illness?

A healthy human body maintains a temperature of about 37°C (98.6°F). When your body temperature rises, heat is released through increased blood flow to the skin and increased sweating. This allows your body to cool and return to its normal temperature.

Being in a hot environment can make your body temperature go up. Examples of hot environments include the inside of a car or a tent on a hot day, the upper floors of a building on a sunny day, a hot tub or sauna and heat from direct warmth or sunlight in the outdoors.

Heat-related illness occurs when your body is unable to properly cool itself. This occurs when you are overexposed to heat or during intense physical activity while it is hot.

Most heat-related illness occurs indoors, in environments without air conditioning. When it is hot outside for several days, the heat builds up indoors and can become dangerous.

Heat-related illnesses can also occur in your workplace if you work outdoors or in a hot enclosed environment. Examples include: bakeries, kitchens, laundries, boiler rooms, foundries and smelting operations, mines and certain manufacturing plants.

What are the symptoms of heat-related illness?

The symptoms of heat-related illness can range from mild to severe. They include:

- Pale, cool, moist skin
- Heavy sweating
- Muscle cramps
- Rash
- Swelling, especially hands and feet
- Fatigue and weakness
- Dizziness and/or fainting
- Headache
- Nausea and/or vomiting
- Reduced urine production or urine that is very dark
- Increasing heart rate and rapid, shallow breathing
- Fever, particularly a core body temperature of 39°C (102°F) or more
- Unusual confusion and decreased mental alertness
- Red, hot, dry skin (in the late stages of heat stroke)
- Seizures
- Unconsciousness/coma

Who is at higher risk of heat-related illness?

Some people are at increased risk for heat-related illness if they do not have access to a cool indoor environment. They include:

- People 65 years of age or older who may not compensate for heat stress efficiently and are less likely to sense and respond to high temperatures
- People who live alone or who are socially isolated
- People who have chronic illnesses such as diabetes, heart disease or respiratory disease
- People who have mental illnesses such as schizophrenia, depression or anxiety
- People with substance use disorders
- People with physical or mental disabilities, including limited mobility and cognitive impairment
- People who do intensive physical activity or work in a hot environment
- People who are pregnant and babies in the womb
- Infants and children up to 4 years of age who rely on adults to make sure their environments are comfortable and provide them with enough fluids

Other things that may increase your risk of heat-related illness may include:

- Not drinking enough water during hot weather
- Increased body mass
- Poor physical fitness
- Certain medications such as diuretics or water pills and certain psychiatric medications
- Use of alcohol or other substances
- Previous heat stroke
- High humidity

How can I prevent heat-related illness?

There are many ways to reduce the risk of having a heat-related illness. These include:

- Keep cool. Stay indoors in air-conditioned buildings, or take a cool bath or shower. At temperatures above 30°C (86°F), fans alone may not be able to prevent heat-related illness. Remember, sunscreen will protect against the sun's ultraviolet (UV) rays but not from the heat
- Consider staying with friends or family or go to places in your community to get cool such as libraries, community centres, malls or parks and other shaded green spaces that are cooler or have air conditioning. Alternatively, contact your band office or local government to find out if cooling centres will be available in your area
- Regularly check older adults, children and others for signs of heat-related illness, especially in the evenings when indoor temperatures are highest. Make sure they are keeping cool and drinking plenty of fluids. Check on those who are unable to leave their homes and people with emotional or mental health concerns whose judgment may be impaired
- Never leave children, dependent adults or pets alone in a parked car. Temperatures can rise to 52°C (125°F) within 20 minutes inside a vehicle when the outside temperature is 34°C (93°F). Leaving the car windows slightly open will not keep the inside of the vehicle at a safe temperature
- Drink plenty of fluids. Drink extra water even before you feel thirsty and if you are active on a hot day. Ask your health care provider about how much water you should drink on hot days if you are on water pills or limiting your fluid intake
- Plan your outdoor activity before 10 am or after 4 pm, when the sun's ultraviolet (UV) radiation is the weakest
- Avoid tiring work or exercise in hot, humid environments. If you must work or exercise, drink 2 to 4 glasses of non-alcoholic fluids each hour. Rest breaks are important and should be taken in the shade
- Avoid sunburn. Use a broad spectrum sunscreen with SPF 30 or higher on exposed skin and an SPF 30 lip balm

- Wear lightweight, light-coloured, loose-fitting clothing and a wide brimmed hat or use an umbrella for shade

What are home treatments for mild heat-related illness?

When recognized early most mild heat-related illnesses, sometimes called heat exhaustion, can be treated at home. Act immediately to start cooling the affected person. Note that mild heat exhaustion does not cause changes in mental alertness. Consult a health care provider about changes in mental alertness in someone who has been exposed to the heat.

Home treatments for mild heat exhaustion include:

- Moving to a cooler environment
- Taking a cool shower or bath
- Wearing a damp shirt or towel
- Drinking plenty of cool, non-alcoholic fluids
- Resting

If symptoms are not mild, last longer than one hour, change, worsen or cause concern, contact a health care provider. Call **9-1-1** if heat stroke is suspected. Keep trying to cool the individual until help arrives.

B.C.'s new heat alert warning system

The B.C. Heat Alert and Response System, or BC HARS, defines two categories of heat events – heat warning and the more dangerous, extreme heat emergency – triggered by specific temperature ranges to initiate recommended response actions. Environment and Climate Change Canada issues the alerts and you can sign up to get heat push notifications to your smartphones through the WeatherCAN app for any/all of the pre-selected locations.

For more information

For more information on extreme heat, visit: www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/preparedbc/preparedbc-guides/preparedbc_extreme_heat_guide.pdf (PDF, 5.7MB).

BC Centre for Disease Control
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