



Occupational Health and Safety
BULLETIN
EXTREME HEAT CONDITIONS

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Most people feel comfortable in temperatures between 20-27°C and between 30-60% humidity. As these factors increase, people begin to feel uncomfortable. Typically this does not cause harm as long as the body can adjust and cope with the increased heat. However, very hot conditions can overwhelm the body and lead to various serious health conditions. The most serious condition is heat stroke, but heat exhaustion, fainting, heat cramps, heat endema (swelling), and heat cramps are also concerning.

What is the Humidex?

Environment Canada uses the humidex scale to inform the public about hot weather conditions. It quantifies human discomfort from perceived heat by taking into account temperature and humidity. For any given temperature, as the humidity (moisture content) in the air gets higher, the thermal effects on people increases. Varying degrees of discomfort begin for some when the humidex reaches 30°C, definite discomfort is experienced at 40°C, and above 46°C specific activities should be discontinued.

Is there a limit to working in the heat? In Canada, there is no temperature maximum exposure limit for working in a hot environment. Further to humidity and temperature, there are environmental factors such as air movement and the thermal impact from surroundings. Individual factors also play a role, such as age, sex, metabolism, level of physical activity, clothing, medical conditions and medication, physical stamina, and acclimatization. These many circumstances that influence working in hot conditions are difficult to measure. As a result, humidex information is often used as a guideline. Many safety precautions can be taken such as changing work schedules and staff rotation, performing more strenuous work during mornings, taking short frequent breaks, utilizing shaded and cool places for breaks, water consumption, and clothing selection.

What precautions should be considered for children at school? The decision to cancel school is made in consultation with the Department of Health Promotion and Protection. To complement this decision, the following is recommended by the local Medical Officer of Health:

In general, students and staff are likely to feel very uncomfortable quite a bit before hot, humid weather would lead to serious health concerns. Students and staff participating in sedentary activities such as sitting at desks would experience less discomfort and stress. The following guideline would be reasonable for students involved in typical classroom activities:

°C Humidex

35-39	<i>Suggest that individuals have regular drinks of water during school day breaks. Allow students to keep a bottle of water at their desk.</i>
>39	<i>Move students to shaded, cooler areas in buildings or outside. Consider earlier dismissal. Encourage to drink at least a cup of water every 20-30 minutes.</i>

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The following guideline would be reasonable for students involved in sports (vigorous to strenuous activity):

°C Humidex

30-39	<i>Consider modifying activities (increase rest periods, water consumption, clothing and equipment). Refer to the American Academy of Pediatrics Committee on Sports Medicine at http://aappolicy.aappublications.org/cgi/reprint/pediatrics;106/1/158.pdf for more detailed guidance.</i>
>39	<i>Recommend postponement of practices, activities and competitions.</i>

In addition, consider other safety measures:

- Utilize all means to keep buildings cool: close curtains and blinds in rooms exposed to direct sunshine, operate fans, and keep interior doors open.
- Prevent daily peak heat from entering the building: closing exterior windows and doors, and operating ventilations system only during cool morning temperatures.
- Wear light-colored, lightweight, loose fitting clothing
- Avoid prolonged exposure to direct sunlight
- Frequently monitor others around us, especially those at higher risk – infants and young children, elderly, and those with medical or physical conditions.

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