

HIGH TEMPERATURE GUIDELINE

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- Association des enseignantes et des enseignants franco-ontariens (AEFO)
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- Canadian Union of Public Employees (CUPE) / Syndicat canadien de la fonction publique (SCFP)
- Catholic Principals' Council Ontario (CPCO)
- Council of Ontario Directors of Education (CODE)
- Education Workers' Alliance of Ontario (EWAO)
- Elementary Teachers' Federation of Ontario (ETFO)
- Ontario Council of Educational Workers (OCEW)
- Ontario Catholic School Trustees' Association (OCSTA)
- Ontario English Catholic Teachers' Association (OECTA)
- Ontario Principals' Council (OPC)
- Ontario Public School Boards Association (OPSBA)
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PURPOSE

The purpose of this document is to provide information to assist school boards and employees in the development and implementation of programs to control the risks related to workers being exposed to excessively high temperatures in the workplace which include, but are not limited to schools and administrative buildings. The following information is intended to increase awareness of risks, challenges (including impact on overall health), contributing factors and resources to assist with identifying circumstances during which heat stress related incidents are likely to occur. A heat stress prevention program is set out to control the risk of exposure to excessive heat while effectively managing heating, ventilation, and air conditioning systems (HVAC) where applicable.

Note: This guide does not displace or limit the legal obligations of school boards and employees in respect of health and safety. The measures recommended in this guide may not be sufficient to meet these obligations in all circumstances. When in doubt, school boards and employees should seek professional advice on the particular situation they are facing.

1. DEFINITIONS

- a. Heat cramps: A heat-induced condition characterized by painful cramps in the arms, legs or stomach which can occur at work or later at home. This condition can be a warning of other more serious heat-induced illnesses.
- b. Heat exhaustion: A heat-induced condition characterized by sweating, cool-moist skin, body temperature over 38°C, weak pulse, abnormal or low blood pressure.
- c. Heat rash: A heat-induced condition characterized by a red, bumpy rash with severe itching.
- d. Heat stress: Heat stress refers to an increase in the body's core temperature. This could be related to a variety of factors, including; high temperature, humidity, radiant heat and activity level. If a person is experiencing heat stress then serious heat-related illnesses can occur, including; heat rash, heat cramps, heat exhaustion, or heat stroke.
- e. Heat stroke: A heat-induced condition characterized by high body temperature (41°C) and any one of the following;
 - weakness
 - confusion
 - emotional upset and strange behavior
 - hot, dry, red skin
 - elevated pulse
 - headaches and dizziness

Note: In the later stages, a person may experience loss of consciousness and possibly convulsions. Heat stroke is a medical emergency. If not recognized and addressed, this condition can result in serious illness or even death.

- f. Humidex: The term “humidex” is short for humidity index. Humidex is an equivalent scale intended for the public to express the combined effects of warm temperatures and humidity. Environment Canada uses humidex ratings to inform the general public when conditions of heat and humidity are possibly uncomfortable. It is used in the same way the equivalent chill temperature, or “wind chill factor”, describes how cold people feel.
- g. Occupancy: This term makes reference to individuals being present in a building. Three levels of occupancy are to be considered for the purpose of this document:
- Full occupancy – When there is a majority of individuals normally present in the building.
 - Partial occupancy - When there is less than the majority of individuals in the building.
 - Unoccupied - When there are no individuals in the building.

2. MINISTRY GUIDELINES AND REQUIREMENTS

Ministry of Education

The Ministry of Education advises that a safe working environment is important for all education workers. This includes ensuring schools are safe for students, workers and visitors.

There are a number of resources available to workers to help maintain a safe working environment such as the following: [School Administration - Workplace Health and Safety, 2017](#)

Ministry of Labour

The Ministry of Labour’s Heat Stress Guideline states the following:

Employers have a duty under paragraph 25(2)(h) of the Occupational Health and Safety Act to take every precaution reasonable in the circumstances for the protection of a worker. This includes developing policies and procedures to protect workers in environments that are hot because of hot processes and/or weather.

For compliance purposes, the Ministry of Labour recommends the Threshold Limit Values (TLVs) for Heat Stress and Heat Strain published by the American Conference of Governmental Industrial Hygienists (ACGIH). These values are based on preventing workers’ core body temperatures from rising above 38°C.

This Guideline is intended for use in workplaces. Heat stress can be a result of high heat generated through a process or where work is physically demanding. Heat stress can also be the result of a combination of higher humidity and ambient temperatures.

Some individuals are more susceptible to heat stress including seniors and small children. Heat stress can also occur from wearing excessively heavy clothing, playing sports or from prolonged physical exertion. Individuals with medical conditions and women who are pregnant may also be

more vulnerable to heat stress.

Source: [Heat Stress, Ministry of Labour, 2014](#)

Note: The Occupational Health and Safety Act does not define maximum temperatures for education sector workplaces, but consideration should be given to prevent workers from developing heat stress related illnesses.

Ministry of the Health and Long-Term Care

Under the Ontario Public Health Standards, the Ministry of Health and Long-Term Care provides direction to public health units (PHUs) on the development and implementation of programs that prevent or reduce the burden of illness from health hazards in the physical environment, including extreme weather and temperatures.

Ontario's 35 PHUs use a coordinated approach for response and mitigation of heat health impacts using the Harmonized Heat Warning and Information System (HWIS). The HWIS sets consistent thresholds for releasing heat alerts across Ontario. As part of community engagement for the HWIS, PHUs may work with community partners, like schools and childcare settings, in implementing local heat response plans. In turn, the HWIS enables public awareness initiatives and consistent heat response activities across communities in Ontario.

Further information on the Heat Warning Information System (HWIS) could be found at: http://www.health.gov.on.ca/en/common/ministry/publications/reports/heat_warning_information_system/heat_warning_information_system.aspx

3. ENVIRONMENTAL CONSIDERATIONS

Heat stress is primarily affected by environmental factors which include but are not limited to:

- Humidity
- Radiant heat
- Air temperature
- Air movement
- Fresh air exchange and carbon dioxide levels

Note: Consideration should also be given to reduce use of any personal appliances or equipment which may contribute to high temperature related incidents.

4. PREVENTION MEASURES

It is a good practice to ensure that all information relevant to the prevention of heat stress-related illnesses be communicated to all workers in the spring of each year, prior to environmental conditions reaching temperatures where an incident is likely to occur. This goal may be achieved through various methods of communication (e.g. posting on health and safety bulletin boards, electronic messaging, awareness materials such as posters) – See [APPENDIX A](#).

In response to the continued excessively hot weather inside and outside of schools, a hot weather action plan (HWAP) is recommended to prevent heat stress-related incidents. This plan should be developed in consultation with joint health and safety committee (JHSC) representatives and community partners to identify high temperature-related risks, heat-vulnerable individuals and control measures for different work groups, as appropriate.

Employers, supervisors, and health and safety committee members should review the Ontario Ministry of Labour's Heat Stress Guideline and/or appropriate school board policies and procedures. A HWAP should be in place when there is an elevated risk of dealing with excessively hot and humid weather, (usually between May 1 and September 30 as stated in the Ontario Ministry of Labour's Heat Stress Guideline). Monitoring of contributing factors will assist in making informed decisions with implementation of a plan. Workers should monitor the temperature and humidity levels of the workplace in order for a HWAP to be initiated whenever excessively hot and humid weather may lead to heat-related illness. This includes supervisors who are also workers.

It is recommended to initiate a HWAP when the following conditions occur:

- When heat waves occur during 3 consecutive days reaching temperatures of 32°C or higher.
- When the humidex reaches or exceeds 35°C.
- When there is a smog alert combined with higher temperatures; and
- When there is an Environment Canada Humidex advisory in regards to ambient air temperatures exceeding 30°C and a humidex rating which exceeds 40°C.

Note: During excessively hot/humid days, it is recommended to consume potable water on a regular basis to stay hydrated. Supervisors are responsible to ensure that potable water (ex: drinking fountains, bottle filling stations, tap water, etc.) is available for consumption as required.

5. CONTROLS AND REACTIVE MEASURES

When there is a potential for exposure to excessively high temperatures which may cause heat stress-related illnesses, control measures must be taken to control exposure to excessive heat in the workplace. These may include use of engineering controls, administrative controls and personal protective equipment. The implementation of appropriate controls can vary depending on the type of workplace, occupancy levels and other environmental factors.

Note: First aid or medical attention including emergency response may be required to treat heat stress related medical incidents.

Engineering controls

- Encourage the use of mechanical or other specialized equipment to reduce physical demands of work related tasks.
- Control the heat at its source through the use of insulation and reflective barriers (e.g. insulate furnace walls).
- Monitor, maintain and maximize the use of existing equipment which is designed to exhaust

hot air and humidity from occupied areas, and to reduce temperature and humidity through cooling.

- Provide access to cool, shaded work areas in the building if practical and safe to do so.
- Consideration should be given to American Society of Heating, Refrigerating and Air-Conditioning (ASHRAE) standards as it pertains to ventilation based on occupancy levels and air exchange requirements.
- Use available ventilation equipment to increase air movement if the indoor temperature is below 35°C.

Note: The use of electric fans can help occupants feel more comfortable when high indoor air temperatures are a concern. The additional air movement from the fans can increase the rate at which sweat evaporates, thus cooling the body. However, when relative humidity is above 70%, very little evaporation occurs. Fans are less effective when room temperature nears body temperature therefore, in these circumstances, fans can be positioned to draw cooler air into a classroom or other work space.

Administrative and work practice controls

Workers are encouraged to take steps to monitor and control the possibility of heat-related illnesses when safe and practical to do so, for example:

- Be aware of the possibility of heat stress-related incidents during the first week of elevated temperatures while individuals are acclimatizing and developing a higher level of tolerance to heat.
- Provide information to supervisors and workers in order to recognize factors which may increase the risk of developing a heat-related illness and the signs and symptoms of heat stress.
- Request that trained First Aid providers are available to respond to heat-related illnesses throughout periods during which heat stress-related illness is likely to occur.
- Request a clear and concise hot weather action plan for outdoor activities.
- Be conscious of medication side effects and avoid beverages which contain sugar and caffeine as this may contribute to dehydration.
- Request worker access to cooler areas of the building to take their scheduled breaks where possible.
- Turn off or limit the use of heat generating equipment and appliances if safe and practical to do so.
- Where mechanical cooling is not possible, open interior doors and perimeter windows to increase the exchange of fresh air (when exterior temperatures are cooler).
- Provide scheduled daily access to cooler areas in the building when possible.
- Assess the physical demands of work-related tasks and confirm reasonable monitoring and control strategies to implement during high temperature periods.
- Request the review of schedules for individuals exposed to high temperature conditions and increase the frequency and or length of breaks when possible.
- Schedule strenuous jobs to be done during cooler times of the day.
- Consume enough potable drinking water to stay hydrated.
- Avoid exposure to direct sunlight, especially during high heat periods of the day.
- Investigate and follow-up on any high temperature related incidents which are reported or observed.
- Consult with employer representatives and Public Health Unit representatives for additional advice as required.

Clothing and personal protective equipment

- Consider wearing light and breathable clothing and avoid clothing with synthetic fabric which may limit cooling of the body.

- Wear light-colored clothing (preferably a long-sleeve shirt and pants) and cover the head to prevent exposure to direct sunlight when outdoors.
- For those working indoors, close curtains or blinds during the day to reduce heat accumulation.
- For very hot environments, consider air, water or ice-cooled insulated clothing.
- Consider wearing reflective clothing when working in areas with high radiant heat sources.
- Be aware of risks related to the use of vapor-barrier clothing (i.e. chemical protective clothing) as this may limit cooling of the body.
- Minimize exposure to the sun.

Note: Additional controls to prevent exposure to high temperatures may be required for vulnerable individuals such as workers and students with special needs or medical conditions.

6. ADDITIONAL RESOURCES

Canadian Centre for Occupational Health and Safety (CCOHS)
[Humidex Rating and Work](#)
[\(English – Français\)](#)

Government of Canada
[Climate Change and Health \(English – Français\)](#)
[Communicating the Health Risks of Extreme Heat Events \(English – Français\)](#)
[Extreme heat: Heat waves \(English – Français\)](#)

Government of Ontario
[Extreme Heat \(English – Français\)](#)

Occupational Health Clinics for Ontario Workers Inc. (OHCOW)
[Heat Stress Awareness Guide](#)
[Humidex-based Heat Stress Calculator](#)
[Humidex Based Heat Response Plan](#)
[Heat Stress Awareness Poster \(English – Français\)](#)
[Heat Stress Awareness Tool \(English – Français\)](#)
[Heat Stress Awareness Guide \(English – Français\)](#)

Public Services Health and Safety Association (PSHSA)
[Beat the Heat: Identifying and Treating Heat Related Disorders](#)