

CENTENNIAL '67 EXTREME

▶ Cold Weather Alerts and Wind Chill



Environment Canada may issue a cold alert when the weather suggests a risk to human health.



Windchill

Wind chill is a term used to describe the cooling effect caused by the combined effect of temperature and wind. When the temperature is -10°C and the wind chill is -20 , you will feel as cold as you would on a calm day when the temperature is -20°C .

The wind makes you feel colder by evaporating any moisture on your skin - a process that draws more heat away from your body.

Listen for Environment Canada's weather forecasts and wind chill warnings. In most of southern Canada, a wind chill is included in the forecast when it reaches -25 , the point where frostbite becomes a risk.

Environment Canada: [Weather and Meteorology](#)



The Centennial '67 Cold Weather Guidelines recommends the

General Recommendations

1. Establish both a policy and plan to deal with potential consequences of extreme temperatures and winter storms (e.g., power outage, lack of transportation). Have an emergency kit available.
2. Reduce the amount of time children spend outdoors when the temperature is -17 to -19 degrees Celsius or colder (with or without the wind chill)
3. Keep children indoors when the temperature is -20 degrees Celsius or colder (with or without wind chill). Some medical conditions may increase sensitivity to cold, parents should consult their physician.
4. Allow indoor breaks if children say they are feeling cold or during extreme temperatures.
5. Ensure children are dressed warmly, covering exposed skin: insulated boots, winter weight coats, mittens, hats, and neck warmers.
6. Change wet clothing or footwear immediately.
7. Although these conditions are unlikely to occur during the school day, ensure that all staff is able to recognize and treat symptoms of frostbite and hypothermia. Give plenty of warm fluids to prevent dehydration.
8. When children are outside, be watchful for shivering or signs of numbness in faces, ears, hands or feet.
9. Educate parents and children about dealing with cold weather: drinking plenty of fluids, dressing warmly, and recognizing signs of cold injury.

Symptoms and Treatment



Exposure to extreme cold can result in injuries such as frostnip, frostbite, or hypothermia. Frostnip is a relatively minor reaction to cold that is easily treated. Frostbite and hypothermia are more serious conditions.



Signs of Cold Injury

Mild Cold Injury

Shivering or numbness in face, hands, feet or ears

Frostnip

Skin appears yellowish or white, but feels soft to the touch

Frostbite

Skin may look whitish or greyish yellow, feel hard or waxy and be numb

Severe Hypothermia

Fatigue, confusion or slurring of speech – **call 911, this is an emergency**

Treatment of Cold Injuries

Move the person out of cold as soon as possible, then:

- Remove wet clothing
- Warm the affected area slowly. Use warm – not hot water. Use warm hands/body heat (do not rub)
- Give warm drinks

If you cannot move the person out of the cold:

- Cover them with something dry such as clothing or blankets while waiting for help
- Do not attempt to warm the affected area because warming and refreezing will cause greater damage to the area
- Give warm drinks

Avoid Additional Injury

Tissue suffering from cold injury is fragile and can be easily damaged.

- DO NOT RUB the area
- The affected area is numb and easily burned. DO NOT HEAT QUICKLY by using:
 - Hot water
 - Hot water bottles
 - Heating pads
 - Electric blankets

Frostnip

Symptoms:

- a mild form of frostbite, where only the skin freezes
- skin appears yellowish or white, but feels soft to the touch
- painful tingling or burning sensation

Treatment:

- Get out of the cold.
- Do not rub or massage the area.
- Warm the affected area slowly with body heat. Try blowing warm breath onto the affected area or tucking your hands into your armpits.
- Once the affected area is warm, do not re-expose it to the cold.

Frostbite

Symptoms:

- A more severe condition, where both the skin and the underlying tissue (fat, muscle, bone) are frozen.
- Symptoms include swelling and redness in the early stages, tingling and burning sensation in the extremities and numbness.
- As frostbite progresses, skin becomes white and waxy/greyish yellow, and is hard to the touch.

Treatment:

- **Get medical help.** Frostbite can be serious, and can result in amputation.
- If possible, move the victim to a warm area.
- Gently loosen or remove tight clothing or jewellery that may restrict circulation.
- Warm the affected area slowly using body heat. Blow warm breath onto the affected area or tuck your hands into your armpits.
CAUTION: If the affected area might be refrozen before medical help arrives, do not warm, this greatly increases the risk of tissue damage.
- DO NOT rub area or apply dry heat.
- DO NOT allow the victim to drink alcohol or smoke.

Hypothermia - the most severe type of cold injury

Symptoms:

- Feeling cold over a prolonged period of time can cause a drop in body temperature (below the normal 37 degrees Celsius).
- Symptoms include drowsiness, shivering, irritability, confusion, stiff muscles, slurred speech, fatigue, discolouration of lips, cold skin and apathy.
- Can progress to a life-threatening condition where shivering stops, the person loses consciousness and cardiac arrest may occur.

Treatment:

- **This is an emergency. Get medical help immediately.**
- Move the person indoors and remove wet clothing.
- Place the victim between blankets so the body temperature can rise gradually. Body-to-body contact can help warm the person's temperature slowly.
- DO NOT use hot water bottles or electric blankets.
- DO NOT rub area or apply dry heat.
- DO NOT allow the victim to drink alcohol or smoke.
- **If the person appears unconscious, call 911 and start CPR if necessary.**



Environment Canada Windchill

SOURCE: Environment Canada’s Wind Chill Program (access information through Environment Canada website’s “frequently asked questions” and choosing question on windchill.) (www.msc.ec.gc.ca/education/windchill/index_e.cfm)

Wind Chill Hazards and Risk of Frostbite

| Wind Chill | Risk of frostbite | Health Concern | What to do |
|------------------------------|--|--|---|
| 0 to -9 | Low | - Slight increase in discomfort | -Dress warmly, with the outside temperature in mind. |
| -10 to -27 | Low | - Uncomfortable - Risk of hypothermia if outside for long periods without adequate protection | - Dress in layers of warm clothing, with an outer layer that is wind-resistant. - Wear a hat, mittens and scarf. - Keep active. |
| -28 to -39 | Increasing risk: exposed skin can freeze in 10 to 30 minutes | - Check face and extremities (fingers, toes, ears and nose) for numbness or whiteness - Risk of hypothermia if outside for long periods without adequate protection | - Dress in layers of warm clothing, with an outer layer that is wind-resistant. - Cover exposed skin: wear a hat, mittens and a scarf, neck tube or face mask. - Keep active. |
| -40 to -47 | High risk: exposed skin can freeze in 5 to 10 minutes* | - Check face and extremities (fingers, toes, ears and nose) for numbness or whiteness (frostbite)- Risk of hypothermia if outside for long periods without adequate protection | - Dress in layers of warm clothing, with an outer layer that is wind-resistant. - Cover all exposed skin: wear a hat, mittens and a scarf, neck tube or face mask. - Keep active. |
| WARNING LEVEL ** - 48 to -54 | High risk: exposed skin can freeze in 2 to 5 minutes* | - Check face and extremities frequently for numbness or whiteness (frostbite) - Serious risk of hypothermia if outside for long periods | - Be careful. Dress very warmly in layers of clothing, with an outer layer that is wind-resistant. - Cover all exposed skin: wear a hat, mittens and a scarf, neck tube or face mask. -Be ready to cut short or cancel outdoor activities. - Keep active. |
| -55 and colder | High risk: exposed skin can freeze in less than 2 minutes | DANGER! - Outdoor conditions are hazardous | - Stay indoors. |

EXTREME HOT WEATHER

HUMIDEX

Humidex over 40

Indoor routine

STRATEGIES TO BE IMPLEMENTED

- ⇒ Refer to Environment Canada information on humidity, humidex and guide to summer comfort, UV index
- ⇒ Personal water bottles will be allowed at student desks and outside if necessary
- ⇒ Staff and students must monitor their level of activity and take frequent breaks for water in order to remain adequately hydrated, especially during lunch hours.
- ⇒ Where possible, keep doors and windows open and lights off
- ⇒ Through regular communication practices (i.e., newsletters, morning announcements), remind parents and students to wear light weight and light coloured clothing and other hot weather necessities - hats, sun visors, sunscreen etc
- ⇒ Where there is air conditioning in libraries or specialty classrooms rotate groups of students into those rooms
- ⇒ Provide classrooms with fans by utilizing available funds
- ⇒ Remind students not to overexert themselves during recess periods

UV INDEX

UV Index of 6 (High) or over

Regular Routine with Precautionary Measures Communicated
(Proper Sun Protection)

STRATEGIES TO BE IMPLEMENTED

- ⇒ Refer to Environment Canada information on humidity, humidex and guide to summer comfort, UV index
- ⇒ Raise awareness through regular communication practices (i.e., newsletters, morning announcements) and remind parents and students about UV rays and proper sun protection - hats, sun visors, sunglasses, long sleeved shirts, sunscreen, seek shade, etc.
- ⇒ Sunscreen will be made available in the office for student use at school, should it be needed

Humidity

It's a well-known fact that the body retains more heat when the weather is hot and humid than it does during a drier but equally warm day. Why? As a response to excessive heat in the surrounding environment, our bodies perspire to make us feel cooler. Evaporation works best when the air is dry. In moist, saturated air, perspiration cannot evaporate as readily. The combination of excess heat and moisture will cause us to feel hot and sticky. As a rule of thumb, the higher the humidity, the greater the discomfort.

Relative humidity

Relative humidity is the amount of moisture that the air contains compared to how much it could hold at a given temperature. A figure of 100 per cent would mean that the air has become saturated. At this point, mist, fog, dew and precipitation are likely.

Relative humidity is normally at its maximum when the temperature is at its lowest point of the day, usually at dawn. Even though the absolute humidity may remain the same throughout the day, the changing temperature causes the ratio to fluctuate.

Humidex

The humidex is a Canadian innovation, first used in 1965. It was devised by Canadian meteorologists to describe how hot, humid weather feels to the average person. The humidex combines the temperature and humidity into one number to reflect the perceived temperature. Because it takes into account the two most important factors that affect summer comfort, it can be a better measure of how stifling the air feels than either temperature or humidity alone.

The humidex is widely used in Canada. However, extremely high readings are rare except in the southern regions of Ontario, Manitoba and Quebec. Generally, the humidex decreases as latitude increases. Of all Canadian cities, Windsor, Ontario has had the highest recorded humidex measurement: 52.1 Celsius on June 20, 1953. The hot, humid air masses which cause such uncomfortable weather usually originate in the Gulf of Mexico or the Caribbean.

Guide to summer comfort

Range of humidex: Degree of comfort

- Less than 29 Celsius: No discomfort
- 30 to 39 Celsius: Some discomfort
- 40 to 45 Celsius: Great discomfort; avoid exertion
- Above 45 Celsius: Dangerous
- Above 54 Celsius: Heat stroke imminent

An extremely high humidex reading can be defined as one that is over 40 Celsius. In such conditions, all unnecessary activity should be curtailed. If the reading is in the mid to high

30s, then certain types of outdoor exercise should be toned down or modified, depending on the age and health of the individual, physical shape, the type of clothes worn, and other weather conditions.

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UV Index

INTERPRETATION OF THE UV INDEX:

The UV index is included in Environment Canada's weather forecasts whenever it is expected to reach 3 (moderate category) or more. This table outlines the sun protection actions recommended at different levels of the UV index. Remember that the amount of UV you receive depends on both the strength of the sun's rays (UV Index) and the amount of time you spend in the sun.

What does UV Index mean?

| UV Index | Category | Sun Protection Actions <i>(in detail)</i> |
|---|-----------------|--|
| 0 - 2 | Low | Minimal protection for normal activity |
| 3 - 5 | Moderate | Cover up. Wear hat, sunglasses, sunscreen if outside for 30 min. |
| 6 - 7 | High | Protection required. Reduce time in sun between 11AM and 4PM |
| 8 - 10 | Very High | Take full precautions and avoid sun between 11AM and 4PM |
| 11+ | Extreme | Take full precautions and avoid sun between 11AM and 4PM |
| <p>Proper sun protection includes wearing a broad-rimmed hat, a shirt with long sleeves and wrap-around sunglasses or ones with side shields. Choose sunscreen with 15+ SPF (sun protection factor) that offers protection against both UV-A and UV-B rays. Apply generously before going outside and reapply often, especially after swimming or exercise.</p> | | |