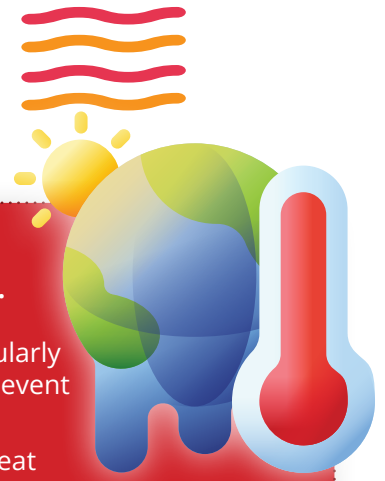


camh Heat Wave Response

Clinical Guidance Document July 5, 2024



Overview

Across the country, Canadians are increasingly feeling the impacts of climate change.

A recent example is the 2021 western heat dome, which saw the highest temperatures ever recorded in Canada and led to significant illness morbidity and mortality rates, particularly among older adults and people with severe mental illness. This was the deadliest weather event in Canadian history.

With climate change, it is predicted that the frequency, severity and duration of extreme heat events will continue to increase in Canada. As clinicians, it is crucial that we familiarize ourselves with the necessary measures to ensure the safety of ourselves, our patients, our families and the community at large from heat-related illnesses and emergencies.

Assessment

CAMH patients are vulnerable to heat events due to a number of considerations. In advance of heat events, clinicians should assess and flag the vulnerable patients on their caseloads. Considerations in this assessment should include:

Age



- In older adults, significant heat exposure happens at lower temperatures due to changes in thermoregulation (i.e., how the body maintains its internal temperature)
- Older adults with age-related mental health issues will often face heightened risk due to isolation

Pregnancy status

- Pregnant people are also at a higher risk, with implications for parental and fetal health and preterm birth

Past psychiatric history

- Patients with severe mental illness are more isolated and will have more challenges with problem solving and reducing the risks of heat exposure



Past medical history

- Comorbid chronic physical illnesses (e.g., asthma, diabetes, coronary artery disease) can greatly increase heat risks

Medication



- Psychotropic medications can affect thermoregulation, can represent risks for dehydrated patients and may be impacted when stored in overheated conditions
- Antipsychotic, anticholinergic and stimulant medications may place individuals at higher risk of more severe heat-related symptoms
- Dehydration can increase the risk of lithium toxicity

Substance use

- Individuals in intoxicated states may have decreased awareness of and responsiveness to heat-related illnesses
- Alcohol use increases the risk of dehydration
- Sympathomimetic substances (e.g., cocaine, methamphetamines, MDMA) elevate body temperature

Social and physical environment

- CAMH patients are more likely to live in exposed conditions (e.g., lack of housing, housing without air conditioning or adequate ventilation and insulation, or urban environments with little shade, water access and free access to cool spaces)



Temperature Flags

For older adult populations, those with significant medical comorbidities and limited supports, and those in substandard housing: heat warnings and responses should come into effect when temperatures are in excess of **25 degrees Celsius.**

For all exposed populations: heat warnings and responses should come into effect when temperatures exceed **30 degrees Celsius.**

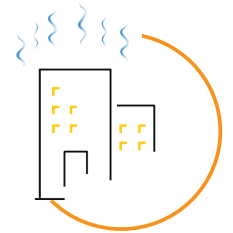


Response

- 1** Provide guidance to patients, their supports and other care team members on the strategies detailed below in the **“Heat wave action plan.”** Create tools (e.g., signs, messages, weather monitoring practices) to remind patients and supports of these response strategies and the symptoms of hyperthermia, which require emergency response.



- 2** Advocate for access to air conditioning (Ontario Disability Support [ODSP] and Ontario Works [OW] have paths to assist).



- 3** Be aware of medication classes that affect thermoregulation. Recognize signs of dehydration and medication-related side-effects and toxicity. **See “Medications and climate change” section below for side-effects worsened by heat and counselling points.**



When planning for discharge and the intensity of outpatient support, education and advocacy, consider the vulnerability of the patient, as well as weather conditions (e.g., recommend increased intensity when heat conditions present greater risk).

Heat wave action plan: Essential steps to stay safe

The following guidelines and actionable steps can help keep ourselves, our patients and the community at large safe during a heat wave.



Protect yourself

- Refrain from going out and engaging in activities during the hottest parts of the day, especially from 10 a.m. to 4 p.m.; plan activities for the cooler times of the day.
- Have water with you when you go out.
- Bring an umbrella when you go out and seek out shaded areas to protect yourself from the sun.
- Opt for lightweight, loose-fitting cotton clothing. Do not wear multiple layers.
- Apply sunscreen with a sun protection factor (SPF) of 15 or higher before heading outdoors. Wear sunglasses and a hat.
- If you work in a hot environment, have a discussion with your employer and colleagues about strategies to minimize heat exposure.
- If working outdoors, take regular breaks.
- Refrain from engaging in intense physical activity.



Stay cool

- Close the blinds or draw the curtains during the hottest parts of the day. Keep the windows shut until it is cooler outside than inside. In the evenings, let the cool air in by raising blinds, drawing back curtains and opening windows.
- Submerge your hands or feet in cold water to lower your body temperature.
- If you have air conditioning but your family or friends do not, invite them to your place to cool off.
- Go to a cooling centre, library, mall or other place with air conditioning during the hottest parts of the day.
- Take cool and refreshing showers or baths multiple times a day. You can also lower your body temperature by placing a washcloth on your skin.
- Limit the use of heat-producing appliances, such as the stove, oven, clothes dryer, television, light fixtures, etc.
- Sleep in the coolest room of the house. Make sure the area is set up for comfort and has easy access to water and a washroom.
- **Fans are not effective in addressing hyperthermia.**



Talk with your doctor, nurse and/or pharmacist

- Check with your doctor if you are following a restricted fluid intake diet. Your doctor may need to adjust your fluid intake during hot weather.
- Consult your doctor or pharmacist to find out if any medications you are taking or any health conditions you have may increase your risk in hot weather.

Stay hydrated

- Consume eight to 12 glasses of fluids every day. You can get your fluids from water, cold soup/broth and fruits and vegetables that have a high water content, such as melons, strawberries, peaches, peppers and carrots.
- Refrain from consuming sugary or alcoholic beverages, as they cause dehydration.
- Eat smaller portions of food more frequently throughout the day.
- **Hydration alone is not effective in addressing hyperthermia.**



Stay connected and check in with those at risk

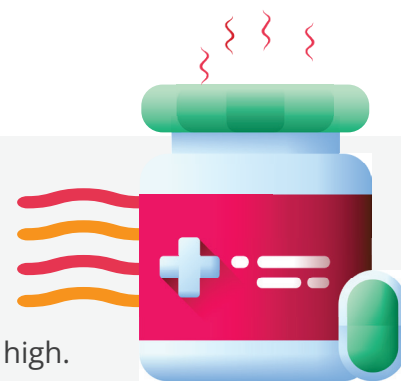
- Stay in touch with your friends and family every day to update them on your well-being.
- Be attentive to your own and others' well-being, especially children, older adults and sick people, and provide help if necessary.
- Keep an eye out for heat alerts and follow the advice provided by Environment Canada or your local public health authority.
- Take hyperthermia seriously. If someone is exhibiting the signs of heat stroke (i.e., confused, hot, dry or sweating profusely, muscle cramps, rash, fainting or unconscious, seizure) call 911 immediately.
- Urge individuals who might be in danger or who might be sensitive to heat to take cool baths, rest in the coolest part of their home, stay with friends and follow all of the guidance above. Exposed people can help one another in these situations.



Medications and climate change

According to the CDC, medications and heat interact in three primary ways:

- 1** Certain medications may interfere with a patient's thermoregulation and/or fluid balance, intensifying the risk of harm from hot weather.
- 2** Heat can degrade or damage some medications, and patients should be counseled on how to store their medication when temperatures are high.
- 3** Medications can increase skin sensitivity from sun exposure, and counseling on skin protection (e.g., sunscreen use) can aid in protecting patients.



Medicines may increase the risk of dehydration and heat-related illness, especially in elderly people taking multiple medicines, through the following mechanisms: diuresis and electrolyte imbalance, sedation and cognitive impairment, changed thermoregulation, reduced thirst recognition, reduced sweat production, and hypotension and reduced cardiac output.

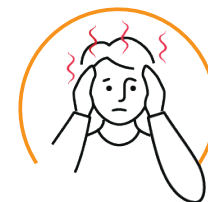
Many CAMH patients take psychotropic medications that may have risks and side-effects that are worsened with climate change. It is important for clinicians to work with their patients to ensure the safe use of medications during heat emergencies.

Clinicians should first assess which classes of medications the patient is taking. Clinicians should then counsel the patient on the corresponding side-effects and risks that they should be attentive to. It is also critical to understand and communicate to patients about the dangers and risks of certain psychotropic medications when used in combination, with respect to heat exposure and in the context of other psychosocial risks.

Medication class Side-effects possibly worsened by heat

Antidepressants

- Nausea
- Dizziness
- Sweating
- Vomiting
- Diarrhea
- Fainting
- Headache
- Dry mouth
- Photosensitivity (i.e., skin becomes very sensitive to heat and sunlight)



Antipsychotics

- Temperature dysregulation (i.e., altered ability to regulate response to changes in temperature and humidity)
- Transient temperature elevation (Clozapine)
- Constipation
- Dry mouth
- Orthostatic hypotension
- Dizziness

Mood stabilizers

- Nausea
- Dizziness
- Vomiting
- Excessive thirst
- Dry skin/skin rash

Counseling points

Patients taking medications with possible side-effects worsened by heat should be advised to engage in the risk reduction activities detailed in the **"Heat wave action plan."**

Resources

- BC Centre for Disease Control. (n.d.). *Preparing for heat events*. <http://www.bccdc.ca/health-info/prevention-public-health/preparing-for-heat-events>
- Canadian Red Cross. (n.d.). *Heat waves: Before, during & after*. <https://www.redcross.ca/how-we-help/emergencies-and-disasters-in-canada/types-of-emergencies/heat-waves>
- Clinical Handbook of Psychotropic Drugs Online. (n.d.). <https://chpd.hogrefe.com/>
- Government of British Columbia. (2024). *Be prepared for extreme heat and drought*. <https://www2.gov.bc.ca/gov/content/safety/emergency-management/preparedbc/know-your-hazards/severe-weather/extreme-heat>
- Government of Canada. (2022). *Keep children cool! Protect your child from extreme heat*. <https://www.canada.ca/en/health-canada/services/publications/healthy-living/keep-children-cool-extreme-heat.html>
- Government of Quebec. (2023). *Extreme heat*. <https://www.quebec.ca/en/public-safety-emergencies/emergency-situations-disasters-and-natural-hazards/what-to-do-before-during-after-emergency-disaster/extreme-heat>
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- University of Winnipeg. (n.d.). *Heat wave*. <https://www.uwinnipeg.ca/emergency-guidelines/weather/heat-wave.html>
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- Westaway K., Frank O., Husband A., McClure A., Shute R., Edwards S., Curtis J., & Rowett D. (2015). Medicines can affect thermoregulation and accentuate the risk of dehydration and heat-related illness during hot weather. *Journal of clinical pharmacy and therapeutics*, 40(4), 363–367. <https://doi.org/10.1111/jcpt.12294>