Smart & Sustainable Ways to Cope with Extreme Heat and Climate Challenges

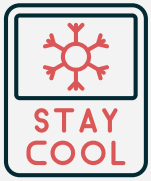
In This Booklet

Extreme Heat

Learn about extreme heat and its challenges

Health Risks

Learn about the health risks of extreme heat



How to Stay Cool

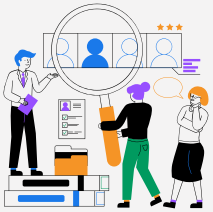
Learn about strategies to help you stay cool

Sun exposure

Learn about ways to protect yourself from the sun

Summer Recipies

Learn easy, nutritious recipes to stay cool and energized



Resources

Learn more about other resources

FROM THE TEAM

Dear Reader,

our team at the Lifelong Health and Wellbeing Lab at SFU has compiled existing knowledge on aging & climate change, including easy-to-follow tips, cooling strategies, and recommendations for how to protect your emotional well-being during heat waves. Our goal is to equip you with the knowledge needed to build resilience and thrive on days that are too hot.

This booklet is designed to offer the best knowledge we have to date on coping with heat, including practical solutions and insights.

If you participated in the COPE study, we thank you for your contribution and hope these resources will support you in staying safe and cool in the heat.

Before you start

In this booklet, we have included QR codes linking to helpful websites. If you have a paper copy, scan the QR codes. If you're viewing the electronic version, simply click the underlined links to access the sources. To scan the QR codes:

- On iPhone, simply turn on wifi or data on your phone and connect to the internet, open the camera, and point it at the QR code. Tap the link above the code to open it.

- On Android, open the camera. Tap the cog wheel icon and toggle on "Scan QR codes". Point the camera at the code and click the link that pops up.

EXTREME HEAT

In the following, we have pulled together information from different sources to help you understand what extreme heat is, why it’s risky, and how rising temperatures can affect you.

Understanding Extreme Heat

Many places in Canada face extreme heat events, often called "heat waves or heat domes". These events involve high temperatures and sometimes high humidity. A changing climate can mean longer and more intense heat events that can be dangerous for your health. Along with other provinces, BC is experiencing record-breaking temperatures and more hot days than ever before. With unprecedented heat emergencies on the rise, it is important to find strategies to cope with the heat.

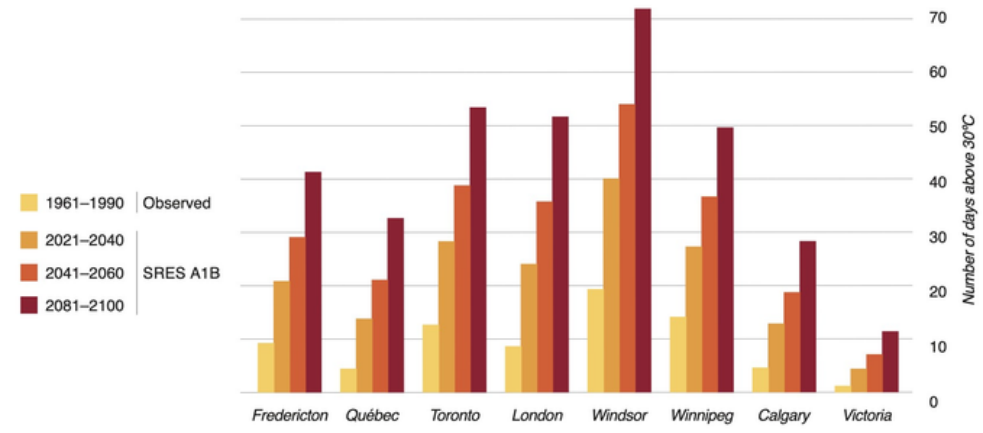


Figure 1: Current and projected number of days exceeding 30°C/86°F for Canadian cities

Certain **at-risk groups** especially benefit from preparing for extreme heat, including people who:

- are aged 65+
- lived alone
- have pre-existing health conditions (e.g., diabetes, heart disease)
- struggle with mental health or substance use
- are marginally housed
- work in hot conditions
- are pregnant
- infants and young children
- with limited mobility

HEALTH RISKS

Hot air, sun rays, physical activity, and hot surfaces can heat your body. This heat is lost by contact with cool air and by sweat production, which cools your body as it evaporates.

Your body typically functions best when its core temperature is in the 36.5-37.5°C range. Weather conditions play a big role in how your body regulates its temperature. For example, if it's windy, sweat evaporates faster, which helps to cool you. But high humidity slows down this process, contributing to increased body temperature.

Heat can threaten your health and well-being, by either exacerbating existing problems or through heat-related illnesses. Heat-related illness can rapidly occur and lead to long-term health problems or even death. Heat-related illnesses include:

- Heat rash
- Heat cramps (muscle cramps)
- Heat edema (swelling of hands, feet, and ankles)
- Heat syncope (fainting)
- Heat exhaustion
- Heat stroke

Heat stroke

Heatstroke occurs when the body fails to regulate its own temperature and body temperature continues to rise, often to 40 °C (104 °F) or higher. Signs of rapidly progressing heatstroke include:

- Losing consciousness
- Convulsions (seizures)
- Difficulty breathing
- Core body temperature over 40° C (104°F) after exposure to heat
- Fast or slow heart rate
- Confusion, severe restlessness, aggressiveness, or anxiety
- Excessive sweating
- Skin that may be red, hot, and dry, even in the armpits
- Severe vomiting and diarrhea

Heat stroke is a life-threatening medical emergency. Call 9-1-1 or other emergency medical services as soon as you suspect or see the signs of heat stroke.

Heat exhaustion

Caused by excessive loss of water and salt. Symptoms may include heavy sweating, weakness, dizziness, nausea, headache, diarrhea and muscle cramps.

Heat fainting (parade syncope)

Caused by the loss of body fluids through sweating and by lowered blood pressure due to pooling of blood in the legs. Symptoms include temporary dizziness and fainting resulting from an insufficient flow of blood to the brain while a person is standing.

Sunburns

This injury is characterized by red, painful and unusually warm skin after overexposure to UV radiation. More severe cases can be accompanied by swelling of the skin, blisters and fever.

Heat cramps

Caused by a salt imbalance resulting from a failure to replace salt lost through excessive sweating. Symptoms are sharp muscle pains.

Heat rash (miliaria rubra)

Caused by a salt imbalance resulting from a failure to replace salt lost through excessive sweating. Symptoms are sharp muscle pains

Heat edema

Heat-induced swelling frequently noticeable in the ankles, feet and hands, and most often seen in people who are not regularly exposed to heat.

Read more about heat health risks (click on the links!):

- Check Your Symptoms
- Extreme Heat Preparedness Guide
- Health checks during extreme heat events
- Heat advice: Vulnerable populations

STAY COOL

As temperatures soar, staying cool isn't just about comfort—it’s essential for health and well-being. From smart hydration tips to cooling techniques that actually work, this guide explores practical strategies to help you stay safe and beat the heat, no matter how high the mercury rises!

PREPARE FOR HEAT

1. **Prepare your emergency kit:**

   Having a contingency plan in case of local climate-related events can help set your mind at ease. When you are feeling calm and ready, talk to your household about safety plans and build a safety kit.

   - [ ] Water — two litres of water per person per day (include small bottles)
   - [ ] Food that won't spoil, such as canned food, energy bars and dried foods (replace once a year)
   - [ ] Manual can opener
   - [ ] Wind-up or battery-powered flashlight (and extra batteries)
   - [ ] Wind-up or battery-powered radio (and extra batteries)
   - [ ] First aid kit
   - [ ] Extra keys for your car and house
   - [ ] Cash, travellers' cheques and change
   - [ ] Important family documents such as identification, insurance and bank records
   - [ ] Emergency plan — include a copy in your kit as well as contact information

2. Tune in to local weather forecasts and alerts so you know when to take extra care.

3. Find ways to keep cool before the hot weather starts.

- If you have an air conditioner, make sure it works properly.
- Find an air-conditioned spot close by where you can cool off for a few hours on very hot days.

4. Keep your gas tank filled or car charged in case you need to get somewhere cool quickly.

5. Arrange for regular visits by family members, neighbours or friends during very hot days in case you need help. Visitors can help identify signs of heat illness that could be missed over the phone.

6. Stay hydrated

Drink plenty of water before you feel thirsty to decrease your risk of dehydration (not having enough fluids in your body). You may be dehydrated even if you are not thirsty.

7. Dress for the weather

- Wear loose-fitting, light-coloured clothing and a wide-brimmed hat made of breathable fabric.
- When you buy sunglasses, make sure they provide protection against both UVA and UVB rays.

8. Take a break from the heat

- If you must do physical activity in extreme heat:
  - Take extra breaks
  - Drink lots of water
  - Remove the gear to let your body cool off
- Don't expect your usual performance in hot weather. Give your body time to recover after being in the heat.

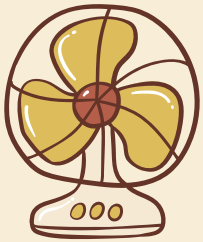
9. Keep your home cool

- Make meals that don't need to be cooked in an oven. Try Canada food guide's no-cook recipes or order meals using food delivery services (DoorDash, Uber Eats).
- Block the sun by closing awnings, curtains, or inexpensive blackout shades and blinds during the day.
- Open your windows at night to let cooler air into your home.
- If you have AC, be sure to turn it on before it gets hot. If you are using a window air conditioner, cool only 1 room where you can go for heat relief.

Sustainable and accessible ways to keep cool

Mitigating climate change is vital, but inevitable rising temperatures means that identifying sustainable cooling strategies is also important. Strategies at the individual scale that focus on cooling the person instead of the surrounding air can be effectively adopted, even in low-resource settings.

Electric fans



Pro:

- Can provide effective cooling for young healthy adults up to 42°C (108°F) in 50% humidity

Cons:

- Effectiveness is reduced with low humidity, and in older adults (>65 years), unless accompanied by self-dousing
- Increases dehydration, but can be offset by drinking an extra glass of water per hour

Self-dousing

Pros:

- Can reduce heat strain and dehydration up to 47°C (117°F) if dousing is sufficient to keep the skin wet
- Can be used during power outages

Con:

- Low compatibility with high clothing coverage

Foot immersion

Pros:

- Can reduce dehydration and thermal discomfort in hot and humid conditions
- Can be used during power outages

Con:

- Risk of slips and falls

Sustainable and accessible ways to keep cool

Wet clothing

Pros:

- Provides high evaporative heat loss without needing to sweat
- Can be used during power outages

Con:

- Clothing must be re-soaked roughly every 60 minutes

Evaporative coolers

Pros:

- Can cool air temperatures in dry conditions
- Can be used during power outages

Cons:

- Minimal effect in high humidity
- Risks creating mosquito breeding sites without proper maintainence

Misting fans

Pro:

- Lowers air temperatures in hot and dry conditionsCan be used during power outages.

Con:

- Must be used in well ventilated or outdoor areas otherwise humidity increases offset any benefit
- Risk of slips and falls

Ice towels/cool wraps/ cooling vest

Pro:

- Can reduce core temperature and cardiovascular strain in conditions up to 45°C (113°F)

Cons:

- Requires access to ice
- Labour-intensive to prepare

Get creative in the heat

Ice Ice Fan-y

Turn your fan into a snow machine (almost):
Plop a frozen water bottle or a bowl of ice in front of your fan and let the frosty air blast begin. Budget-friendly, science-approved, and oh-so-refreshing.

Wet Towel Superpower

It's not just spa day—it's survival!
Drape a damp towel over your shoulders, or wrap one around your neck like a superhero cape. Bonus points if it's fresh from the freezer (but not frozen stiff).

Freeze Your Fashion

Chill your outfit before you chill in it.
Toss a t-shirt or even your pillowcase in the freezer for a few minutes. It's like giving your clothes a built-in AC system.

Fancy Hydration

Upgrade your water game.
Add mint, lemon, cucumber, or berries to your water and drink it like royalty. Hydration is cool (literally).

Get creative in the heat

Sleep Like a (Cool) Baby

Forget the top bunk—heat rises.
Camp out on the floor, use breezy cotton sheets, and skip the heavy blankets. Sleeping low keeps you cool and collected until sunrise.

Night Fan Ninja Moves

Position your fan like it's on a stealth mission.
At night, point a box fan out the window to suck out warm air. Meanwhile, draw in cooler outside air from another window. It's like your home is breathing.

Chill Zone Creation Kit

Your home deserves a summer makeover.
Pick the coolest corner of your space, block out the sun, add a fan, and hang a damp sheet like a fort. You now live in a DIY arctic hideaway.

Protect yourself from the Sun

Cover up

When the UV Index is 3 or higher, protect your skin as much as possible. Wear light-coloured, long-sleeved shirts, pants, and a wide-brimmed hat made from breathable fabric. When you buy sunglasses, make sure they provide protection against both UVA and UVB rays.

Limit your time in the sun

Keep out of the sun and heat between 11 a.m. and 3 p.m. The UV index in Canada can be 3 or higher during those times. When your shadow is shorter than you, the sun is very strong. Look for places with lots of shade, like a park with big trees, partial roofs, awnings, umbrellas or gazebo tents. Always take an umbrella to the beach.

Use the UV Index forecast

- Tune in to local radio and TV stations or check online for the UV index forecast in your area. When the UV index is 3 or higher, wear protective clothing, sunglasses, and sunscreen, even when it's cloudy.
- Use sunscreen. Put sunscreen on when the UV index is 3 or higher. Use sunscreen labelled "broad spectrum" and "water resistant" with an SPF of at least 30.

Read more about strategies to stay cool (click on the links!):

- Free portable air conditioners
- Keep Cool Map; where to go when it's hot
- Energy-saving tips and technologies
- Hot Car Warning

SUMMER RECIPES

- Okroshka (cold summer soup)

- Nutrition for Healthy Aging

- Watermelon Gazpacho

- 30 No-Cook Summer Meals

RESOURCES

Are you interested in staying informed with up-to-date resources?

We collect, update, and share helpful materials through the COPE project, focusing on climate change, extreme heat, and older adults. Our curated collection includes evidence-based strategies, practical guides, and research insights to support awareness, preparedness, and resilience. Whether you're looking for expert recommendations, community initiatives, or policy discussions, our resources provide valuable information for coping with extreme heat. Explore more on our website!

COPE

Daily | Engage | Co-Create