

Heat Warnings - Population-Specific Information and Resources



The following information has been compiled to share directly with community partners who receive emails about extreme temperatures (e.g. heat warnings) from Lakelands Public Health. References are listed at the bottom of the document.

Potential uses of this document include:

1) Sharing the whole document with your colleagues/staff team

- This may be if the majority of content is deemed relevant/potentially useful.
- Please do not share the whole document outside of your organization.

2) Sharing parts of the document with staff team or a broader network

- During a heat warning, if you plan to forward the “PUBLIC NOTICE” provided by Lakelands Public Health to an email distribution list, you can copy and paste population-specific content into the NOTICE.
- You may also use select population-specific content by forwarding the content to your staff team, creating social media posts, or posting resources on-site.
- Please reference the original source(s) appropriately.

Sections are listed below. If using the electronic version of this document (recommended), you can click the section heading to navigate directly to that section.

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Note - Some of the resources come from other geographic regions/jurisdictions (the source will be marked with an *). The main content has been deemed general enough and useful to share with local partners. However, some content or resources will not be applicable to our region. Consider including a relevant disclaimer if these resources are shared.

Older Adults (i.e., aged 65 years or older)

- Experts claim that “heat-vulnerability is influenced by advanced age more than any other individual risk factor”. [1]
- As people age, their ability to sense and respond to heat can be impaired, as well as their ability to dissipate heat through sweating and skin blood flow. This leads to storing more heat and more pronounced elevations in core body temperature than experienced by younger people. [1] [2]
- Older adults may be faced with compounding factors that could put them at increased risk during extreme heat events. These factors may include chronic health conditions, use of medications that interfere with the body's cooling mechanisms, social isolation, mobility limitations, and low income/poverty. [2] [3]
- Social isolation or living alone is a major risk factor for dying during a heat wave. [4] Data from extreme heat events in BC (2021) and Quebec (2018) showed that the majority of deaths during these events were older people who lived alone. It is important for all people to be aware that hot temperatures can pose a serious health risk, and that people’s perceptions of how heat is impacting their wellbeing can vary. [1] [4] [5] Checking in with people should be done regularly (twice daily), in person if possible, and following guidance for questions to ask (see Health Checks (NCCEH) linked below).
- Brochure resource: **It's much too hot! Protect yourself from extreme heat** - [webpage link](#), [PDF link](#) (Health Canada)
- Fact sheet for health care workers: **Community Care During Extreme Heat - Heat Illness: Prevention and Preliminary Care** - [webpage link](#), [PDF link](#) (Health Canada)
- Guide for doing health checks during extreme heat events: [Health Checks During Extreme Heat Events](#) (NCCEH) (Note - **this tool can be used with other vulnerable populations** but use with older adults, especially those who live alone, is common).
- Fact Sheet: [Summer Heat Safety for Seniors and People with Medical Conditions](#) (Fraser Health BC*).

Infants and Children

- Given the unique physiological characteristics of children's bodies and their high dependency on caregivers, they are likely to be at risk during extreme heat events. [3] For infants and young children especially, their bodies heat up more quickly, they sweat less, and their thermoregulation is less developed. They generally rely on adults for getting to cooler environments and for maintaining their hydration (i.e. drinking water, milk, breastmilk or formula). [2] [6]
- Children and adolescents most at risk include those with breathing difficulties (asthma), heart conditions, kidney problems, mental and physical disabilities, developmental disorders, diarrhea, and those who take certain medications. [6] [7] For more information, refer to the section on using medications below.
- Brochure resource: **Keep children cool! Protect your child from extreme heat** - [webpage link](#) , [PDF link](#) (Health Canada)

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- Fact Sheet: [Safety for infants and young children during extreme heat](#) (HealthLinkBC*, multiple languages)
- Fact Sheet: [Heat-related illness in infants and young children](#) (HealthLinkBC*, multiple languages)

Pregnant people

- Pregnant people can be more vulnerable to heat exhaustion or heat stroke than the general public, particularly if they have other health concerns (such as obesity, kidney disease, or heart issues). They have to work harder to cool down themselves and their baby. [8]
- Extreme heat may lead to pregnancy and labour complications, and impact prenatal development. Depending on timing of the exposure to extreme heat events, exposure has been associated with outcomes such as miscarriage and congenital complications (e.g., heart or neural tube defects), premature birth and stillbirth, and severe labour complications. [9]
- Fact Sheet: [Safety for the perinatal population during extreme heat](#) (HealthLinkBC*, multiple languages)

People with chronic health conditions and/or using medications

- Individuals with cardiovascular, cerebrovascular, renal, respiratory and neurologic diseases, and diabetes are at a higher risk of heat-related health effects. [1] [2] [3]
- Some medications interfere with the body's ability to maintain normal body temperature. Sensitivity can vary widely, so people should be encouraged to seek advice from their primary care provider and pharmacist(s). [2]
 - Some examples of drug classes that can impact thermoregulation include: [10]
 - Antipsychotics/Neuroleptics
 - Antidepressants
 - Lithium
 - Anti-epileptics
 - Anti-Alzheimer's agents (Cholinesterase inhibitors)
 - Anti-Parkinson's agents
 - Diuretics
 - Nitrate vasodilators
 - ACE inhibitors
 - Calcium channel blockers & beta blockers
- Brochure resource: **It's much too hot! Protect yourself from extreme heat** - [webpage link](#), [PDF link](#) (Health Canada)
- Fact sheet: **Extreme heat and human health: For pharmacists and pharmacist technicians** - [webpage link](#), [PDF link](#) (Health Canada)
- Fact Sheet: [Summer Heat Safety for Seniors and People with Medical Conditions](#) (Fraser Health BC*).
- Fact Sheet: [Medications and Heat](#) (HealthLinkBC*)
- Fact Sheet: [Tips for People Who Take Medication: Coping with Hot Weather](#) (US SAMHSA*)

People with physical disability(ies) or cognitive impairment

- Mobility limitations can lead to exacerbated effects of extreme heat. Being confined to a bed is strongly associated with heat related illness. [2] [11]

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- Cognitive impairment (from neurological conditions, intellectual disability, psychiatric illness, etc.) can increase risk as it may interfere with a person's ability to be aware of risk and take actions to reduce their risk. [1]
- Persons with schizophrenia are at particular risk, due to various factors (physiological, behavioural and social). [12]
- Individuals who require assistance for daily living may be at higher risk of health impacts. The risk would escalate if the heat event disrupted the ability of care providers to provide care. [11] [13]
- Persons with mobility limitations or cognitive impairment may face additional barriers in accessing cooling spaces such as public spaces or municipal cooling centres. [14] [15]
- Fact sheet for health care workers: **Community Care During Extreme Heat - Heat Illness: Prevention and Preliminary Care** - [webpage link](#), [PDF link](#) (Health Canada)
- Fact Sheet: [Schizophrenia and Extreme Heat](#) (BCCDC*)
- Fact Sheet: [Supporting people living with Schizophrenia during Extreme Heat](#) (Toward the Heart BC*)
- Guide: [Supporting persons with Schizophrenia during extreme heat events: A guide for persons with schizophrenia and support persons](#) (University of Ottawa)

The added impact of power outages

Heatwaves may lead to brownouts or blackouts. For people who rely on equipment that requires electricity, this can present a serious threat to their health and safety. This may include people with disabilities and people with serious health conditions. [12] [15]

People living with low income

- Inadequate income can directly limit one's ability to take protective actions for extreme heat (i.e., purchasing and running an air conditioner, fan, or doing home repairs or retrofits). [2] [17] There can also be connections between income and exposure to heat: Lower-income neighbourhoods may have more paved surfaces and less vegetation and green space, leading to hotter temperatures (i.e. "urban heat island"). [18] [19] [20] Renting an apartment is often a more affordable option for those with low income. The upper floors of apartment buildings can be particularly at risk of reaching dangerous temperatures during hot weather. [2] [9] [17]
- Low income is connected to low socio-economic status, which can relate to other factors that increase the risk of developing a heat-related illness (e.g., higher rates of chronic health conditions). [9] [11]
- Fact sheets: [Three Steps to Cost-Effective Apartment and Condo Heat Protection](#), [Three Steps to Cost-Effective Home Heat Protection](#) (Intact Centre on Climate Adaptation)
- Guide: [Preparing for Extreme Heat Events - Low-Cost Solutions for Renters](#) (Community Social Planning Council [BC]*)
- Fact Sheet: [Extreme heat and using fans](#) (Fraser Health BC*, multiple languages)

People experiencing homelessness

- This population is directly exposed to outdoor heat and humidity. They may also have greater exposure to urban centres and the urban heat island effect, [21] though access to green spaces, shade and “blue spaces” (e.g. rivers and creeks) can be helpful.
- People experiencing homelessness often report health conditions relating to substance use, mental health concerns, and medical conditions/illness, which can also increase vulnerability to heat. [9] [11] [21]
- Guidance Website: [Extreme heat and smoke guidance for those supporting unhoused community members](#) (Fraser Health BC*)

People who use substances (legal and illicit substances)

- Alcohol or drug use can make people more susceptible to the effects of heat since substances can interfere with thermoregulation. [9] [11]
- Guide: [Supporting people who use substances during extreme heat events](#) (The Ontario Harm Reduction Distribution Program)
- Fact Sheet: [Using substances during extreme heat](#) (Toward the Heart BC*)
- Fact Sheet: [Prepare for extreme heat: A guide for people who use substances](#) (Toward the Heart BC*)
- Fact Sheet: [Heat and Substance Use Fact Sheet](#) (Interior Health BC*)

People who work or are active outdoors (or in hot indoor environments)

- People who work outdoors (e.g. construction, road repair, farming) and physically active individuals who exercise in the heat could face greater environmental heat exposure and physical strain. [3] Hot indoor work environments (e.g. restaurant kitchens, bakeries, foundries, etc.) can also contribute to health risks. [2]
- Brochure resource: **You're active in the heat. You're at risk! Protect yourself from extreme heat** - [webpage link](#) , [PDF link](#) (Health Canada)
- Fact Sheet (8-page): [Hot Environments - Health Effects and First Aid](#) (Canadian Centre for Occupational Health and Safety)
- [Heat Stress Toolkit](#) with guidebooks, posters, infographics and other resources available in multiple languages (Occupational Health Clinics for Ontario Workers Inc)
- Poster: [Keep Your Cool - Safety tips for working outdoors in the sun and extreme heat](#) (Canadian Centre for Occupational Health and Safety)

Newcomers to Canada

- Being a newcomer to Canada can increase one's risk of health impacts due to extreme heat, but risk factors will differ for each individual.
- Newcomers are more likely to live in a rented dwelling [22] and, locally, experience a lower median income than that of non-immigrants. [9] With affordability challenges and low vacancy rates in Peterborough, [23] newcomers may have limited options. This could lead to living in housing that is poorly adapted to extreme heat.
- During an extreme heat event, newcomers may face language and literacy barriers when heat-health information is communicated. [2] Locally, English is used for most health and media communications. Though various translator programs/apps can support translation, language barriers may still be a challenge. Newcomers may also

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have a limited knowledge of local alert systems and health and social services programs, which could limit their ability to make use of available community services and supports. [2]

- Fact sheet: [Tips For Beating the Heat](#), available in 13 languages (City of Hamilton*)
- Fact sheet: [Heat-related illness and prevention](#), available in 15 languages (HealthLinkBC*)
- Fact Sheet: [Extreme heat and using fans](#), available in 11 languages (Fraser Health BC*)

Supplemental resources and graphics showing risk/vulnerability factors

1. Personal Vulnerability Assessment



Understanding Who is Vulnerable to Overheating in your Home

In addition, to understanding those factors that can cause your home to overheat, you should also consider those personal factors that can limit a person's ability to cool, resulting in reduced tolerance to heat. **If you or your family member(s) have identified one or more factors below, you may be at greater risk of developing a heat-related injury at a lower indoor temperature.**

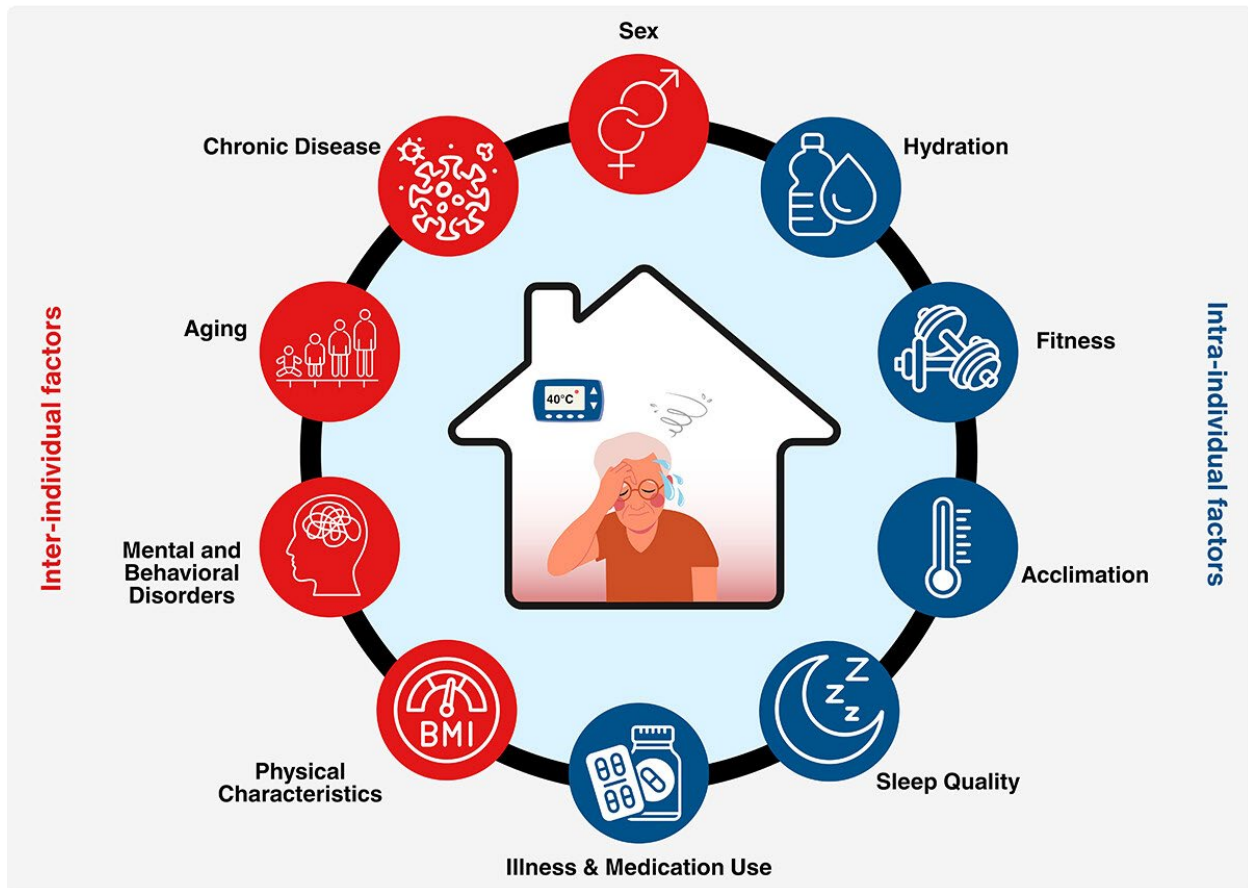
Personal Vulnerability Assessment

☐	Older Adult (60 years+)	The body's natural cooling processes are impaired with age.
☐	Presence of Chronic Disease	Individuals with chronic diseases such as diabetes, heart disease, respiratory disease, cancer and others can limit the body's ability to cool, causing dangerous increases in body temperature.
☐	Mental Illness or Cognitive Disorders	Conditions such as anxiety disorders, depression, schizophrenia, and dementia, among others, can reduce awareness of heat-related risks.
☐	Substance Dependency or Use	The ability to sense and respond to heat and remain hydrated may be altered due to the use of alcohol or drugs, especially in those with a substance dependency disorder.
☐	Medication Use	Medications such as anti-adrenergic, beta-blockers, diuretics, NSAIDs, anticholinergics, antidepressants, antipsychotics and others can affect your body's ability to lose and dehydrate you.
☐	Impaired or Decreased Mobility	People with impaired or reduced mobility might be less able to take protective measures during extreme events.
☐	Living Alone or Socially Isolated	People who live alone or do not have strong social connections or support are at higher risk of a heat-related injury.
☐	Poor Physical Fitness	People who are not engaged in regular physical activity have a reduced ability to lose heat when exposed to hot environments.
☐	Previous Heat Injury	People who have previously experienced a heat illness or injury may be less tolerant of the heat.
☐	Lack of Acclimatization	People who are not regularly exposed to heat have a reduced capacity to lose heat and may be less tolerance to heat.
☐	Chronic Insomnia and Poor Sleep	Sleep deprivation can reduce heat tolerance.
☐	Current or Acute Illness	People who are usually healthy but are temporarily unwell may be more susceptible to heat.

Source: Kenny et al., 2024. [1] , Available under "Supplemental Materials"

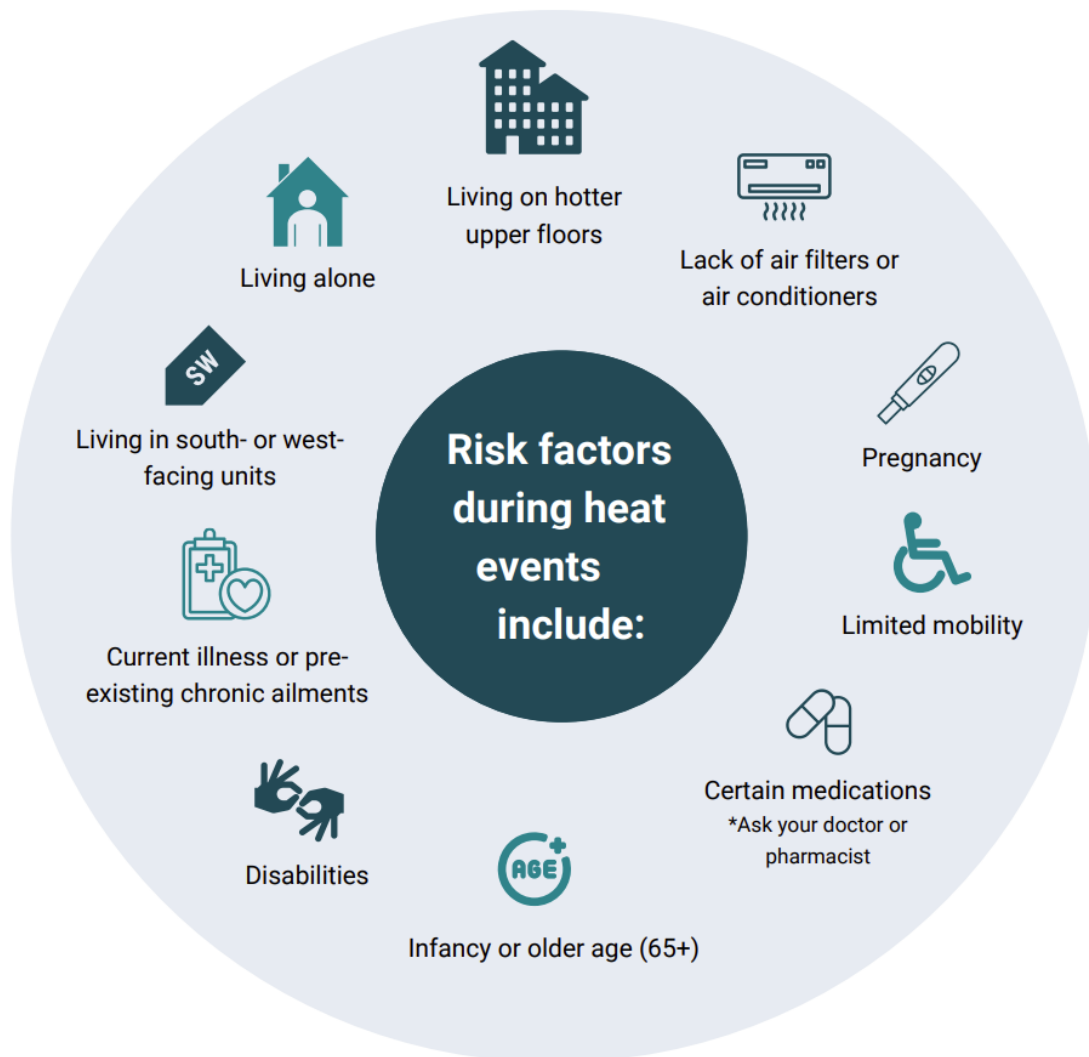
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2. Overview of intra- and inter-individual factors that can modulate the body's physiological capacity to dissipate during a heat stress such as during a daylong exposure to an overheated home in an extreme heat event.



Source: Kenny et al., 2024. [1]

3. Risk Factors During Heat Events



Source: Building Resilient Neighbourhoods, 2023 [24]

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