

Climate Change Is Increasing Risks to Canadians from Extreme Heat

HEALTH OF CANADIANS IN A CHANGING CLIMATE: SCIENCE ASSESSMENT 2022

Extreme heat events (commonly called heat waves) are a serious threat to the health of Canadians and can result in hundreds of deaths when individuals and communities are not prepared.

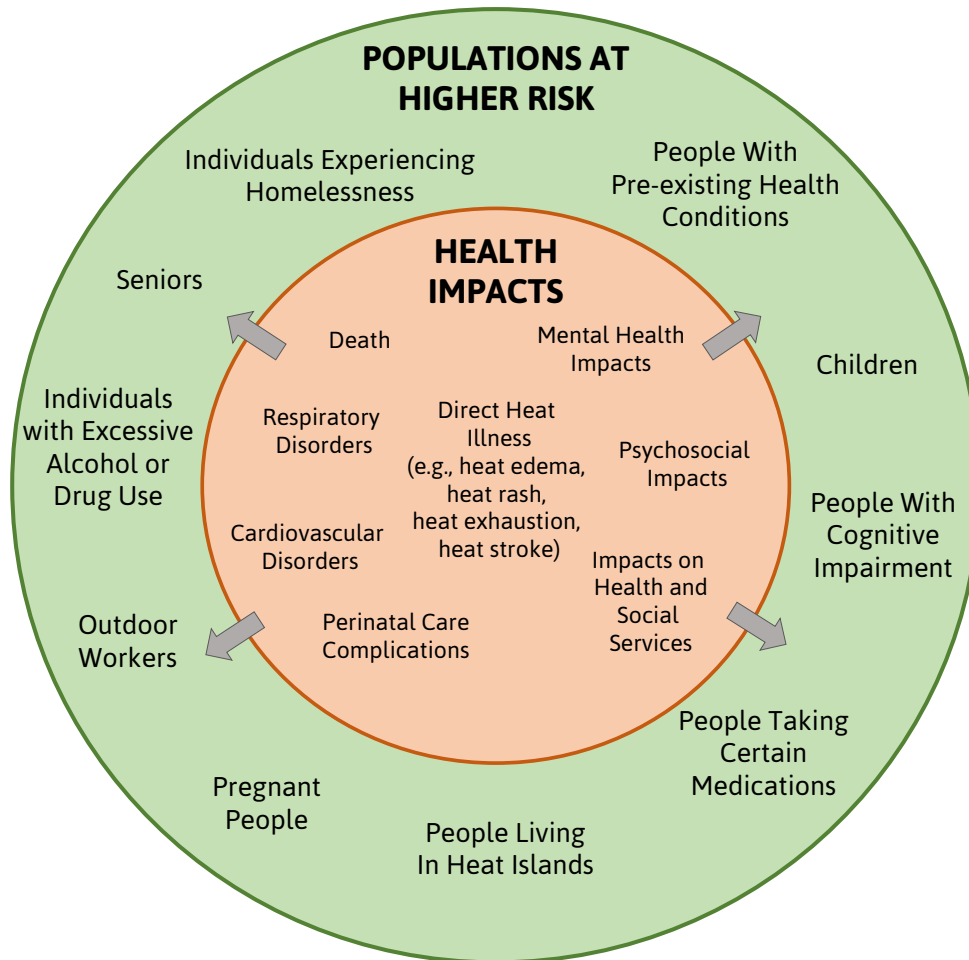
Extreme heat affects the body's ability to regulate its core temperature which can result in a number of direct (e.g., heat exhaustion and heat stroke) and indirect (e.g., psychosocial impacts such as mood and behavioural distress; exacerbated mental illness; and increased risk of aggression, violence, and suicide) effects on health. Some individuals are at greater risk from extreme heat because of higher physiological sensitivity to the

impacts (e.g., reduced ability to sweat with age), increased exposure (e.g., construction workers) or less capacity to take protective actions (low income individuals and people experiencing homelessness). An extreme heat event in Quebec in 2010 led to an estimated 291 excess deaths while an event in British Columbia in 2021 was linked to an estimated 740 deaths¹.

¹ Henderson, S.B., McLean, K.E., Lee, M., Kosatsky, T. (2021). [Extreme heat events are public health emergencies. BC Medical Journal, 63\(9\), 366-367.](#)



Health Risks to Canadians from Extreme Heat



Without further adaptation, climate change is expected to increase the number of heat related deaths in Canada over the next few decades by 155% to 455% depending on population growth and level of future GHG emissions

Many extreme weather events, and their health impacts on Canadians, are expected to increase in the coming decades, driven by widespread

warming associated with climate change. Extreme heat events will become more frequent and more intense and contribute to increased drought and wildfire risks.

Extreme heat puts increased pressures on health systems as people seek treatment when feeling ill from hot temperatures. Toronto, Ontario, experienced a 12.3% increase in the number of heat-related ambulance calls during extreme heat events in 2005, 2006 and 2010 compared to the week before and after.

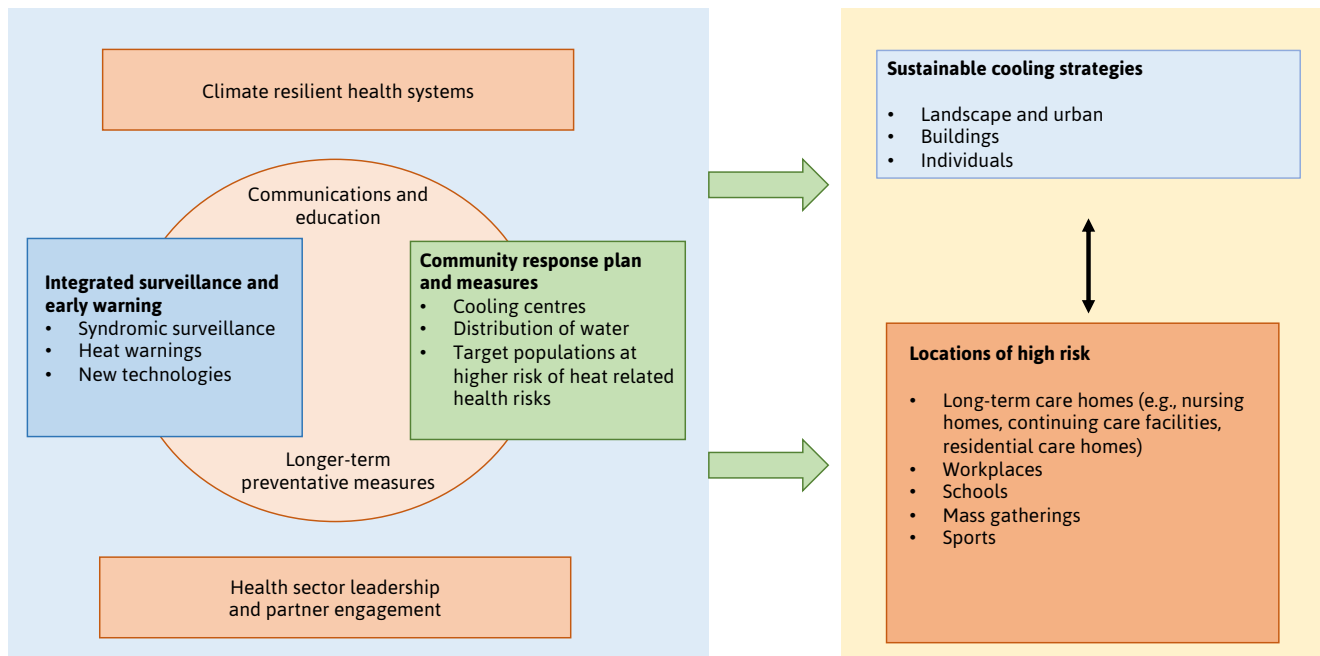


Heat illness and deaths are preventable and adaptation measures can be effective in protecting Canadians

Community heat action plans that include integrated surveillance, public warning systems and action plans with effective community response activities, along with sustainable cooling

measures at the landscape/urban, building and individual levels, help to protect health. Measures should be tailored to heat vulnerable settings such as aged care homes, workplaces, schools, mass gatherings and sports events. Tailoring measures can help to address any challenges faced by people in taking protective measures.

Elements of Community Heat Action Plans and Preventive Actions to Reduce Heat-Related Health Risks²



² Adapted from Jay, O., Capon, A., Berry, P., Broderick, C., de Dear, R., Havenith, G., Honda, Y., Kovats, R. S., Ma, W., Malik, A., Morris, N. B., Nybo, L., Seneviratne, S. I., Vanos, J., & Ebi, K. L. (2021). [Reducing the health effects of hot weather and heat extremes: from personal cooling strategies to green cities](#). *Lancet (London, England)*, 398(10301), 709–724.



Helpful resources

- [3 ways to protect you and your loved ones during an extreme heat event](#)
- [It's much too hot! Protect yourself from extreme heat](#)
- [Keep children cool! Protect your child from extreme heat](#)
- [You're active in the heat. You're at risk! Protect yourself from extreme heat](#)
- [Staying healthy in the heat \(infographic\)](#)
- [Staying healthy in the heat \(factsheet\)](#)

Source

Gosselin, P., Campagna, C., Demers-Bouffard, D., Qutob, S., & Flannigan, M. (2022). Natural Hazards. In Berry, P., & Schnitter, R. (Eds.). (2022). [Health of Canadians in a Changing Climate: Advancing our Knowledge for Action](#). Ottawa, ON: Government of Canada.

