Canada's Changing Climate: Implications for Health and Well-being

HEALTH OF CANADIANS IN A CHANGING CLIMATE: SCIENCE ASSESSMENT 2022

Climate change is already negatively impacting the health of Canadians and their health systems. Health risks will increase as warming continues - the greater the warming the greater the threats to health.

Climate change has been a driver of recent health effects related to rising temperatures and extreme heat, wildfires, and the expansion of zoonotic diseases into Canada, such as Lyme disease. Adaptation and greenhouse gas mitigation measures planned and implemented with broad community participation can help to protect Canadians from future impacts.

Climate Change Risks to Health

Weather-related natural hazards

Extreme heat events, severe storms, floods, wildfires, coastal erosion, and droughts are examples of natural hazards whose frequency and intensity are influenced by climate change. These hazards can cause loss of life, injury and various health problems. Between June 25 and July 2, 2021, an extreme heat event in B.C. resulted in approximately 740 excess deaths.[1] Severe events can often damage property and cause disruptions to communities and the economy.

[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.

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Water quality, quantity and security

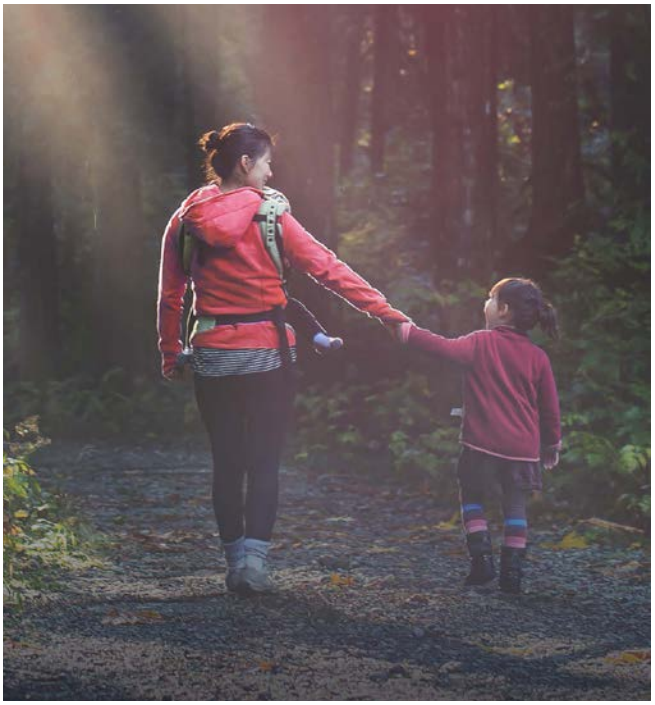
Climate change is expected to result in changes in water quantity, reduced water quality, and increased flood and drought risks. This can result in more risks to Canadians from waterborne diseases. Changes in precipitation and temperature due to climate change will result in impacts on water quality and quantity in Canada. This will put pressures on natural water systems (rivers, lakes, oceans), for example through algal blooms, and human drinking water and wastewater systems, thereby increasing risks to the health of Canadians.

Air quality

A warmer climate is expected to worsen air pollution in Canada by increasing ozone levels, increasing the frequency of wildfires, extending pollen seasons, and affecting indoor air quality. Unless offset by air pollution emission reductions, air pollution health impacts in Canada, including premature death and disease, are expected to worsen in the future due to the influence of climate change, with hundreds of excess deaths annually estimated by mid-century. Wildfire smoke is estimated to have contributed to 620-2700 air pollution related deaths per year between 2013 and 2018.

Food safety and security

Changes in climate are affecting food safety and security in Canada. Climate change increases risks of food insecurity by disruptions to food systems, rises in food prices, and negative nutritional effects. Changes in precipitation patterns, increasing temperatures, and more frequent extreme weather events may increase the introduction of pathogens to food that can cause illness, such as viruses, bacteria, and parasites. Chemical contaminants that have harmful health effects may also be introduced into Canada's food systems through climate-sensitive environmental exposure pathways like floods or droughts.



Infectious diseases

Climate change is affecting the risk of infectious diseases in Canada. Many infectious diseases that are vector-borne, directly transmitted from human-to-human, zoonotic and acquired from the environment by inhalation are sensitive to weather and climate. The recent rapid emergence of Lyme disease has been driven by climate warming, making more of Canada suitable for the species of ticks that carry the disease. Other insect-borne diseases, such as eastern equine encephalitis, and epidemics of West Nile virus infection have likely been driven by variability in weather and climate, and risks will increase with climate change.

Mental health

The current burden of mental ill-health in Canada is likely to rise as a result of climate change. Mental health such as depression, anxiety, and PTSD can be impacted by hazards that occur in the short-term such as floods, extreme heat events, wildfires, and hurricanes. It can also be affected by longer-term events like drought, sea-level rise, and melting permafrost. Knowledge and awareness of climate change threats can also affect mental health, resulting in emotional and behavioural responses such as worry, grief, anxiety, anger, hopelessness, and fear.

Climate change will affect some Canadians more than others

Climate change can make existing health inequities among Canadians worse, which in turn increases vulnerability to the risks from climate change and other health threats for some individuals and populations. These include marginalized individuals and communities that already experience a disproportionate burden of illness and health inequities, such as racialized populations and low-income populations. Some populations may come into contact with climate-related health hazards more frequently based on their geographical location or their physical environment. For example, exposure to climate-related health risks, such as injury during an extreme weather event, is higher for individuals who live in substandard housing. Others are susceptible to the health effects of climate change because of their age (children and the elderly) or because of pre-existing conditions such as heart disease, allergies or asthma.

First Nations, Inuit and Metis peoples and communities face unique challenges from climate change

The health impacts of climate change on First Nations, Inuit, and Métis peoples are interconnected and far-reaching. They result from direct and indirect impacts of climate change that exacerbate existing inequities, and affect food and water security, air quality, infrastructure, personal safety, mental well-being, livelihoods, and identity, as well as increase exposure to organisms causing disease.

Source

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