

# Climate Change and Our Health



## Climate change has the potential to have serious effects on your health.

Regional differences in warming patterns, precipitation and extreme weather events mean that the health effects of climate change will vary according to where you live. Young children, the elderly, those in poor health, or those living in poor quality housing will be most vulnerable to stresses related to weather extremes.

Researchers in Canada are working together to learn more about the effects of climate change on our health. They will help us in finding ways to adapt to the impacts of climate change on communities, vulnerable individuals, and on public health and emergency services.

Visit the Health Canada [Climate Change and Health Office](#) site.

## Extreme Temperature

Climate change will mean that we will experience shorter and milder winters. However, climate change scientists tell us that over the coming century we can expect heat waves during summer months to:

- occur more frequently;
- be hotter;
- last longer; and
- have higher levels of humidity.

More intense heat waves may cause an increase in heat-related illnesses (heat stroke and dehydration); respiratory and cardiovascular illness, physical and mental stress; and the spread of infections.

During the next 50 years, heat-related deaths may increase, particularly in large cities in southern Canada, unless adequate measures are taken to protect vulnerable individuals and to reduce the urban heat island effect. This effect occurs when natural vegetation is replaced by surfaces that absorb heat, such as building roofs and walls, and pavements. For example, the City of Toronto has already begun to protect vulnerable people during heat waves, and to take measures to reduce heat buildups within the city.

## Air Quality

Warmer temperatures and prolonged heat waves will bring an increase in air pollution, particularly in urban and industrialized areas. Ground-level ozone, a primary ingredient of smog, results when sunlight and heat interact with pollutants such as nitrogen oxides and volatile organic compounds. These pollutants are released by the burning of fossil fuels. As temperatures go up, we will have more smoggy days.

Asthma and other respiratory problems are already on the rise; warmer temperatures with increased humidity and air pollution may cause them to increase further.



Children are especially vulnerable to air pollution because of their smaller size, the fact that their lungs are still developing, and because they spend more time being active outdoors than adults. Hotter, more humid weather could pose special health risks for children who already suffer from asthma. Changes in wind and weather

patterns can also change the amount of fungi and moulds in the air, affecting people with allergies. Changes in wind and weather patterns can also change the amount of fungi and moulds in the air, affecting people with allergies.

*"Throughout Canada, children are more likely to be hospitalized for respiratory problems resulting from exposure to air pollution than any other cause."*

Changing Habits, Changing Climate: A Foundation Analysis, Canadian Institute of Child Health. Report available at [www.cich.ca](http://www.cich.ca).



## Extreme Weather Events

A warmer climate is likely to cause more frequent and more intense severe weather events, such as hurricanes, tornadoes, thunderstorms, floods and droughts. These events have many potential health impacts, including direct physical injury or death, as well as psychological distress due to the loss or injury of loved ones and property, mass evacuations, and moving into shelters.

Although it is not possible to link recent severe weather events directly to climate change, examples in the past suggest the types of risks to health and well-being that Canadians may face in the future. The Red River flood in May 1997 caused the evacuation of more than 29,000 people in Southern Manitoba, and resulted in \$815 million in damages. The eastern Ontario, southern Quebec and New Brunswick ice storm in January 1998 resulted in massive power outages affecting 4.7 million people. More than 600,000 people had to be evacuated and there were 28 deaths and reported 945 injuries. Total damages were estimated to be \$5.4 billion.



## Infectious Diseases

Warmer temperatures could increase the range of some parasites and disease transmitted by insects and ticks, bringing new infectious diseases to communities they would not otherwise reach. The recent extremely rapid and unexpected spread of West Nile virus across the US and Canada can in part be attributed to a warmer climate in which mosquitoes can over winter. Climate change might also favour the northward spread of mosquitoes capable of transmitting dengue fever, yellow fever, and malaria.

A warmer climate may bring about changes to habitats that will allow rodents to move into new areas. Some rodents can transmit illnesses, such as hantavirus, to humans through their feces or urine. However, scientists have started developing vaccines against several viruses responsible for infectious diseases which will help to limit their spread in Canada.

## Water and Food Quantity and Quality

Extreme climate events will affect the quality and quantity of our water. Lower flows of water in lakes and rivers caused by heat waves and droughts can lead to poor water quality and to an increase in waterborne diseases. Surface water is also often contaminated during heavy storms and floods by storm sewer overflows, and agricultural & urban runoffs.

Hot weather can cause microorganisms to grow and cause outbreaks at recreational beaches and in shellfish. It also increases the chances of food poisoning outbreaks.



## Canada's Northern Peoples

*"The livelihood of many Aboriginal and northern residents comes from the land, water and natural resources, and will be compromised as ecosystems and wildlife are affected by climate change over time. In the north, melting permafrost could put buildings, pipelines, roads and other infrastructure at risk. Winter roads to remote Aboriginal communities may no longer be available or available only for shorter periods, thereby increasing the cost of supplying these communities."<sup>1</sup>*

Canada's three Territories are already observing impacts from climate change on their communities. There have been changes in sea ice cover affecting their hunting and fishing seasons, changes in temperature causing dehydration and heat stress, and changes in wildlife causing food-borne contamination and altering their traditional ways of life.

### What needs to be done?

Given the reality of climate change and the profound effect it will have on the lives of Canadians, we must be prepared and willing to address the impact that climate change will have on our health and well-being. We have to reduce our emissions of greenhouse gases in order to meet our global obligations and maintain the quality of life for all Canadians. To find out more about how you can participate in the national effort to address climate change consult the [Climate Change Plan for Canada: Climate Change, Achieving Our Commitments Together](#).

We are committed to pursuing our work to better understand the impacts of climate change and to plan and promote effective public health strategies to reduce the risks to the health of Canadians from climate change.

1. Climate Change: Achieving Our Commitments Together, Climate Change Plan for Canada, Government of Canada, page 48.