Airborne Allergens & Climate Change

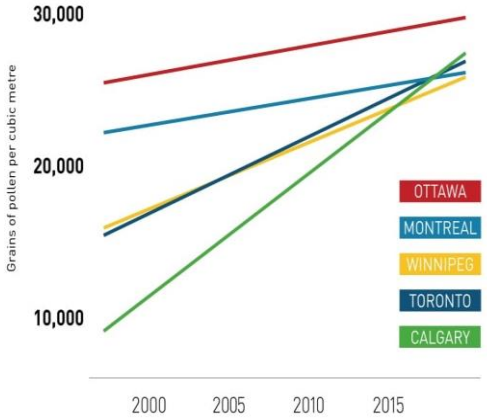
Climate change is expected to have substantial effects on airborne allergens, such as pollen and mould spores, and will impact those with asthma, hay fever and other respiratory diseases.

Pollen on the rise

Pollen is a yellow powder produced by the male part of a flower that serves to fertilize the female part of the same species to produce seeds that germinate into new plants. Pollen is transported by the wind, insects, or other animals. When pollen is transported through the air in large quantities, it can cause irritation to the nose, eyes, and lungs of people especially those who are allergic to pollen and those with asthma or other respiratory diseases.

Male White Pine flowers

The changes in temperature and precipitation that are predicted to occur due to climate change will increase the growing season of plants. With a longer growing season, plants may produce more pollen and for longer periods each year. Warmer temperatures have already resulted in an earlier onset of the pollen season in many locations in Ontario. Warmer temperatures could also mean a longer pollen season, new plants entering the area, and an increase in plant pollen production overall.



*Change in number of grains of pollen per cubic metre over time in 5 Canadian cities from:*https://www.cbc.ca/news/canada/toronto/cities-seasonal-allergies-symptoms-worsening-climate-change-1.5256496

Air quality

Elevated temperatures can also negatively impact air quality with higher levels of smog and increases in ground level ozone (which irritates the eyes and lungs). A potential increase in wildfire would also impact air quality through high levels of smoke and particulate matter. Poor air quality further irritates the lungs and can increase the risks of respiratory events like asthma attacks in vulnerable people.

Mould is a threat

Mould is a microscopic fungus that grows in moist environments. As it spreads and becomes larger it can have a fuzzy appearance like on rotting bread or a dark stain like black mold on drywall in a damp house. Increased precipitation and humidity can raise moisture content in the forest and increase the growth of mould affecting air quality. Heavy rainfall or rain in winter may lead to flooded homes, which can also increase the risk of mould growth. When mature, moulds release spore into the air to reproduce. It is these spores that irritate the nose and lungs of people. Some moulds also produce toxins that can be dangerous and even fatal.

Mould on an orange and in a on walls. Photos from https://en.wikipedia.org/wiki/Mold

More intense and longer exposure to airborne allergens like pollen and mould can lead to more cases of reactions to allergens and/or respiratory diseases and cause existing conditions to become more severe and ultimately lead to higher death from asthma and other respiratory diseases

How can we prepare?

Limit contact with allergens

Avoiding or limiting contact with allergens like pollen and mould can help prevent asthma attacks and allergy symptoms. Raise community awareness of the importance of allergen avoidance, especially for those with asthma or other respiratory conditions.

Pollen avoidance measures can include:

- Closing windows during pollen season
- Removing shoes and leaving them in the entrance to buildings
- Washing clothing to remove pollen from fabric
- Avoid drying clothes outside during pollen season
- Avoid being outdoors in the morning or on windy days
- Use medication before exposure

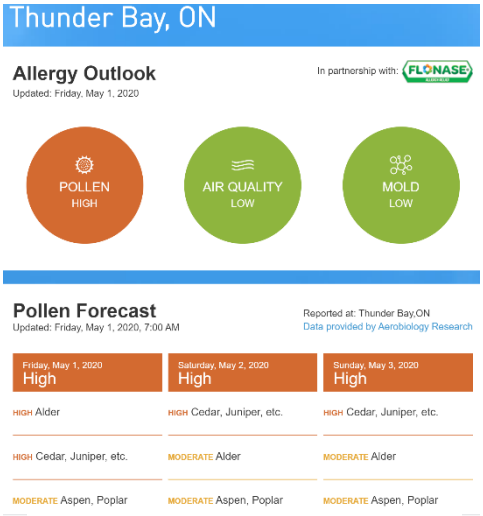
To prevent mould growth in your home:

- If things get wet, remove water and dry immediately
- Ventilate your home (especially damp areas like bathrooms)
- Keep your home warm with good air circulation (cool areas increase condensation and mould growth)
- Remove items that can grow mould (wet or musty smelling items, firewood, carpet in basements, etc.)
- Repair leaky roofs, windows and plumbing
- Prevent water from entering your home (slope ground so rainwater/snow melt runs away)

The Government of Canada offers a First Nation-based report that can be used to inform your community about the health risks of mould, identifying mould and how to prevent and/or remove mould from the home (https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fniah-spnia/alt_formats/pdf/promotion/public-publique/home-maison/mould-moisissure-eng.pdf)

Monitoring

Communities can monitor when the pollen season begins in their area by noting when plants and trees begin to bloom or when pollen starts to collect in lakes and on vehicles. Pollen reports are often available alongside weather forecasts in more southern areas of the province. They provide a measurement of the number of grains of pollen per cubic meter of air and can even identify the types of pollen present. More remote communities may want to investigate the possibility of creating a pollen count program for their area. Regardless of the source of information, it should be shared with community members.



Allergy report from Weather Network

Adequate Healthcare

Access to appropriate healthcare and medication is extremely important for managing asthma and other allergic respiratory diseases. Accessing healthcare in remote communities can be challenging. Communities should continue to push for their healthcare needs to be met.

Hospital in Attawapiskat

Airborne allergens are predicted to increase because of climate change. People should prepare by limiting their contact to allergens, monitor pollen in the community and advocate for good healthcare.

UP NORTH ON CLIMATE
Climate Change Impact and Adaptation Study for the North of Ontario