
be air aware
Know the facts about air quality
airhealth.ca
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Canada's natural environment offers many opportunities to enjoy healthy outdoor activities. Most Canadians don't need to change their plans to enjoy the great outdoors because of air pollution, but some people may need to reduce their risk by taking appropriate precautions.

Every year thousands of Canadians are admitted to hospital suffering from the effects of air pollution.

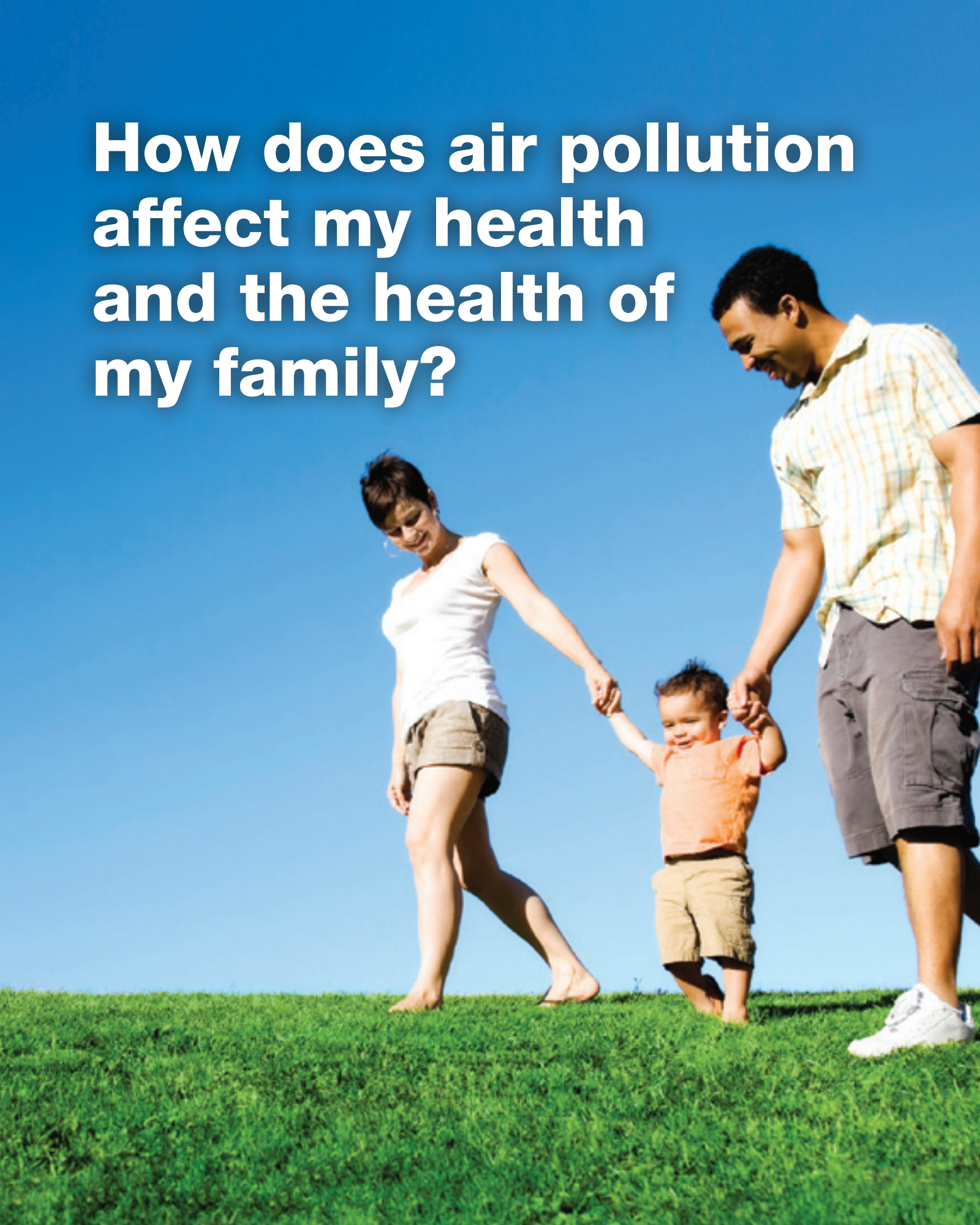
Individuals react differently to air pollution. Children, the elderly and those with heart or lung disease are most sensitive to the adverse health effects of air pollution. People with diabetes are also at greater risk because they are more prone to heart disease.

Even Canadians who are relatively fit and healthy can experience symptoms when exercising or working outdoors, if pollution levels are higher than usual.

There are many different types of air pollutants from a wide range of sources. The pollutants of greatest risk to health are the gases and particles that have been found to contribute to cardiovascular and respiratory disease. These pollutants are often lumped together under the term *smog*.

What is air pollution?

How does air pollution affect my health and the health of my family?



Depending on the length of time you are exposed, your health status, and the concentration of pollutants, air pollution can have a negative effect on your heart and lungs. It can:

- Make it harder to breathe
- Irritate your lungs and airways
- Worsen chronic diseases such as heart disease, Chronic Obstructive Pulmonary Disease (COPD) and asthma
- Children, the elderly and those with diabetes, heart or lung disease are most sensitive to the adverse health effects of air pollution

Negative health effects increase as air pollution worsens. Studies have shown that even modest increases in air pollution can contribute to more emergency room visits, hospital admissions and sometimes result in death. Small increases in air pollution over a short period of time can increase symptoms of pre-existing illness among those at risk.

How does air pollution affect my health and the health of my family?

How do I know if I am at risk?

People with diabetes, lung disease (COPD, asthma, lung cancer) **or heart disease** (such as angina, and a history of heart attacks) are more sensitive to air pollution.

Seniors are at higher risk because of weakening of the heart and lungs and an increased likelihood of health problems such as heart and lung disease.

Children are also more vulnerable to air pollution because they have a less-developed respiratory system. Because of their size, children inhale more air per kilogram of body weight than adults.

People participating in strenuous sports or work outdoors breathe more deeply and rapidly, allowing more air pollution to enter their lungs. They may experience symptoms like eye, nose or throat irritation, coughing or difficulty breathing when air pollution levels are high.

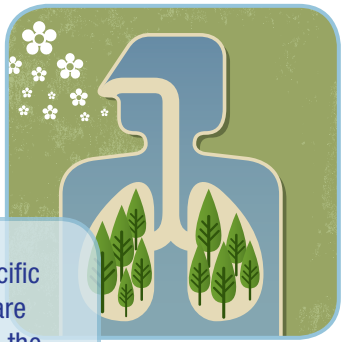
How do I know if I am at risk?

What is the Air Quality Health Index (AQHI)?

The *Air Quality Health Index* is a tool designed to help you understand what the quality of the air around you means to your health. It is a tool developed by health and environmental professionals to communicate the health risk posed by air pollution.

It is designed to help you make decisions to protect your health and the environment by:

- Limiting short-term exposure to air pollution
- Adjusting your activity during episodes of increased air pollution and encouraging physical activity on days when the index is lower
- Reducing your personal contribution to air pollution



The index provides specific advice for people who are especially vulnerable to the effects of air pollution as well as for the general public.

What is the Air Quality Health Index (AQHI)?

How does it work?

Air Quality Health Index

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The *Air Quality Health Index* (www.airhealth.ca) provides a number from 1 to 10+ to indicate the level of health risk associated with local air pollution. Occasionally, when the amount of air pollution is abnormally high, the number may exceed 10.

When the number is low, it's the ideal time for most people to enjoy their favourite outdoor activities.

The higher the number, the greater the health risk and your need to take precautions.

The index describes the level of health risk associated with this number as 'low', 'moderate', 'high' or 'very high', and suggests steps you can take to reduce your exposure.

It also forecasts local air quality for today and tomorrow and provides associated health advice.

The index does not measure the effects of odour, pollen, dust, heat or humidity on your health.

How does it work?

How is the AQHI calculated?

The AQHI is designed as a guide to the risk presented by a mixture of common air pollutants which are known to harm human health. Three specific pollutants have been chosen as indicators of the overall mixture:

1. **Ground-level Ozone (O_3)** is formed by photo-chemical reactions in the atmosphere. Ozone can be transported long distances within a polluted air mass and can be responsible for large regional air pollution episodes.
2. **Particulate Matter** is a mixture of tiny airborne particles that can be inhaled deep into the lungs. These particles can either be emitted directly by vehicles, industrial facilities or natural sources like forest fires, or formed indirectly as a result of chemical reactions among other pollutants.
3. **Nitrogen Dioxide (NO_2)** is released by motor vehicle emissions and power plants that rely on fossil fuels. It contributes to the formation of the other two pollutants. Nitrogen dioxide is often elevated in the vicinity of high traffic roadways and other local sources.

All three can have serious, combined effects on human health—from illness to hospitalization to premature death—even as a result of short-term exposure. Significantly, all of these pollutants can pose health risks, even at low levels of exposure, especially among those with pre-existing health problems.

How is the AQHI calculated?

How to use the AQHI index

First, **determine which group** you are in:

- **At-risk Populations:** people with existing heart or lung conditions, seniors, children or people participating in sports or strenuous work outdoors

OR:

- **General Population:** otherwise healthy people, and those not exerting themselves outdoors.

1. Check **www.airhealth.ca** or the Weather Network for your local AQHI information
2. **Read and follow actions recommended** for your group
3. **Use the forecast to plan** outdoor activities

How to use the AQHI index

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