

Questions and Answers: The New Air Quality Health Index

What is the Air Quality Health Index?

The Air Quality Health Index (AQHI) is a scale designed to help you understand how the quality of the air around you affects your health.

By providing information about the level of risk and recommended actions associated with pollution levels in urban areas, the AQHI is designed to help individuals make decisions that may protect their health.

How do air quality conditions affect my health?

Recent Health Canada studies examining the health effects of different air pollutants on urban populations found that air pollution may contribute to the death of about 5900 people every year in Canada. Air pollution contributes to the hospitalization of many more Canadians each year.

How air quality conditions may affect your health is determined by the length of time you are exposed, how much air you are breathing in, your health status, and the concentration of pollutants in the air.

Individuals react differently to air pollutants. Children, the elderly, and people with heart or lung conditions or diabetes are more sensitive to the adverse effects of air pollution.

People participating in sports or strenuous work outdoors may also be more susceptible to the negative impacts of air pollution because they are breathing air deeply and rapidly.

Negative health effects may increase as air pollution worsens. This can include difficulty breathing, irritation of the eyes, nose and throat, worsening of chronic conditions such as heart disease, bronchitis, emphysema, or asthma, and in some cases premature death.

To help determine if you are sensitive to the affects of air pollution, please visit: <http://www.ec.gc.ca/cas-aqhi/default.asp?lang=En&n=8727DF6F-1> .

How does the AQHI work?

The AQHI is measured on a colour-coded scale from 1 to 10+ (shown below). The higher the number, the greater the health risk associated with local air quality.

The AQHI numeric ratings (from 1 to 10+) are also grouped into risk categories (low, moderate, high, very high) that are designed to help you easily and quickly identify your level of risk.



Each risk category is associated with specific health advice for those at risk (children, seniors, people with heart or lung conditions and diabetics) and the general population.

Health Risk	Air Quality Health Index	Health Messages	
		At Risk Population	General Population
Low	1 - 3	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.
Moderate	4 - 6	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
High	7 - 10	Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
Very High	Above 10	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

How will the AQHI help to protect my health and the health of my family?

Since the AQHI is designed to help you understand the potential health risks associated with different air quality levels, it is a useful tool to help you plan and enjoy outdoor physical activities.

It is particularly helpful for seniors, parents of young children, and people suffering from heart or lung conditions, as they can use the AQHI to assess the immediate risk air pollution poses and take the recommended steps to lessen that risk.

However, the index does not measure the effects of everything in the air on your health. Pollen, dust, heat or humidity, odours and localized conditions can affect your health and your sense of well being. It is always important to pay attention to what your body is telling you and follow your doctor's advice.

What is the average AQHI for Brandon and Winnipeg?

Recent monitoring has shown that the health risks associated with air quality for the cities of Brandon and Winnipeg are generally low, with an average AQHI rating of around three or lower in both locations.

How is a community's AQHI calculated?

The Air Quality Health Index (AQHI) is based on the relative risk posed by a combination of common air pollutants that are known to harm human health. These pollutants include **Ground-level Ozone (O₃)**, **Particulate Matter (PM_{2.5})**, and **Nitrogen Dioxide (NO₂)**. For more information on these pollutants, please visit: <http://www.ec.gc.ca/cas-aqhi/default.asp?lang=En&n=0929D3A1-1>

The AQHI does not measure the health effects of odour, pollen, dust, heat or humidity. Other air pollutants such as sulphur dioxide and carbon monoxide, are not included in the index because their health effects are largely predicted by measures of ground-level ozone, nitrogen dioxide and particulate matter.

Can weather conditions affect the AQHI?

Weather conditions can affect air quality and elevate the reading on the AQHI. Some conditions that may affect the AQHI reading and increase potential health risks posed by reduced air quality include:

- **Wind-** Wind speed plays a role in diluting pollutants. Generally, strong winds disperse pollutants. However, light winds can result in stagnant conditions that allow pollutants to build up over an area.
- **Inversion conditions-** Under normal circumstances warm air moves upward and mixes with cold air. However, there are times when warm air may move over cold air, creating an inversion or “stagnant” layer of air at ground level. Under such conditions, pollutants released from everyday activity may be trapped near the ground and will not be dispersed until wind speed increases.
- **Clear, cloudless skies-** Clear skies allow more sunlight or UV radiation to penetrate the Earth’s surface. Higher intensity of sunlight, especially on hot sunny days may result in higher levels of ground-level ozone, which is one of the pollutants measured in the AQHI.

What other conditions affect the AQHI?

- **Forest fires-** Smoke from forest fires can spread over a wide area. This may increase levels of particulate matter, one of the pollutants that is measured on the Air Quality Health Index (AQHI). Depending on how far away the fire is, this may affect the reading on the AQHI. If smoke is widespread and reduces visibility, Environment Canada will issue a Special Weather Statement. This statement will talk about the smoke and its impact

on people and will include a statement on the possibility of reduced air quality.

- **Grass fires-** In most instances, smoke from grass fires is highly localized and the impact on air quality remains within the immediate area of the fires. Although wind can increase the size of a grass fire, it will also help to disperse smoke. Unless the fire is very close to the air quality sensor, it is unlikely to have a major effect on the AQHI reading.
- **Stubble burning-** Stubble burning can increase levels of particulate matter in the air. This may result in higher local AQHI values down-wind from the fires. However, unless the fire is very close to the air quality sensor, it is unlikely to have a major effect on the AQHI reading.
- **Local building fires-** In most instances, smoke from building fires is localized and the impact on air quality remains within the immediate area of the fires. Unless the fire is very close to the air quality sensor, it is unlikely to have a major effect on the AQHI reading.

Don't we already have an Air Quality Index?

Air quality and the risks associated with certain pollutants have been reported for several years using the Air Quality Index (AQI). However, the new **Air Quality Health Index** (AQHI) reflects current knowledge of the health effects associated with air pollution by reporting on the short term **health risks** posed by a combination of pollutants that are known to harm human health (O₃, PM_{2.5}, NO₂).

For more information on the differences between the old Air Quality Index and the new AQHI, please visit:

<http://www.ec.gc.ca/cas-aqhi/default.asp?lang=En&n=22BA50A8-1>

What communities in Manitoba have the AQHI?

The AQHI is currently being implemented in Brandon and Winnipeg. The initiative may be extended to other communities in the future.

How can I access the AQHI?

If you live in or around Brandon or Winnipeg, you can find your AQHI rating by visiting: <http://www.ec.gc.ca/cas-aqhi/default.asp?lang=En&n=450C1129-1>

Where can I find more information?

For more information on the Air Quality Health Index, please visit:

<http://www.ec.gc.ca/cas-aqhi/default.asp?lang=En&n=CB0ADB16-1>

or call Health Links-Info Santé at 788-8200 or toll-free 1-888-315-9257.