

## The Air Quality Health Index in Manitoba

### ***What is the Air Quality Health Index?***

The Air Quality Health Index (AQHI) is a scale to help you understand the potential health risks associated with different air quality levels in urban areas, it is a useful tool to help you plan and enjoy outdoor physical activities.

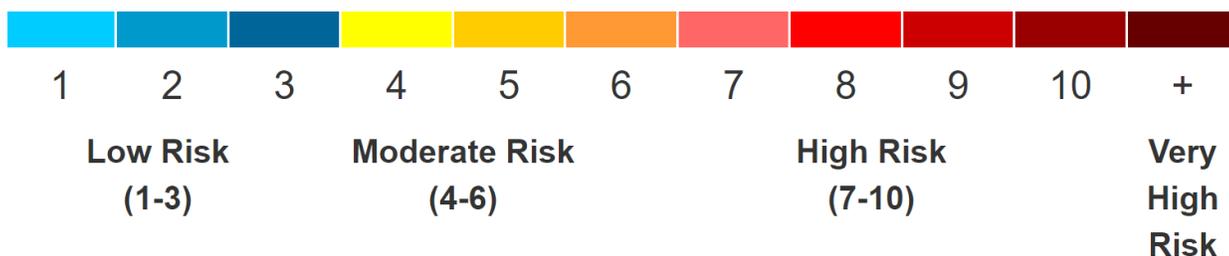
It is particularly helpful for seniors, parents of young children, and people suffering from heart or lung conditions or diabetes, as they can use the AQHI to assess the immediate risk air pollution poses and take the recommended steps to lessen that risk.

The AQHI is based on the population-based risk posed by increasing levels of a combination of air pollutants known to harm human health. These pollutants ground level ozone (O<sub>3</sub>), particulate matter (2.5 µm and smaller) and nitrogen dioxide (NO<sub>2</sub>) are measured by air quality monitoring stations and translated into a single number or index which represents the measured quality of the air. This number can be found on the AQHI. For more information on these pollutants, please visit: <http://airquality-qualitedelair.ccme.ca/en/>

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.

### ***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 population groups who may be at greater risk of health effects (children, seniors, people with heart or lung conditions and diabetics) and the general population. 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 health care provider's advice.

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

***What communities in Manitoba have the AQHI?***

The AQHI is currently available for Brandon, Flin Flon and Winnipeg.

***How can I access the AQHI?***

If you live in or around Brandon, Flin Flon or Winnipeg, you can find your AQHI rating by visiting: [https://weather.gc.ca/airquality/pages/provincial\\_summary/mb\\_e.html](https://weather.gc.ca/airquality/pages/provincial_summary/mb_e.html)

***How do air quality conditions affect my health?***

Health Canada estimates there are 14,000 to 15,000 deaths in Canada per year due to air pollution from human activity. Air pollution contributes to the hospitalization of many more Canadians each year. Even at low levels, air pollution has been linked to an increased risk of heart and breathing problems as well as other health effects.

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, seniors, 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 effects of air pollution, please visit:

<https://www.canada.ca/en/environment-climate-change/services/air-quality-health-index/health-risks.html>

### ***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 increase levels of particulate matter, one of the pollutants measured in the AQHI. If smoke is widespread and reduces visibility, Environment Canada will issue a Special Weather Statement.

**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 an air monitoring station, 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 monitoring station, 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 monitoring station.

**Other local sources**– Other point sources of emissions may have an effect on local air quality. Municipalities often have by-laws and zoning laws to limit emissions in residential areas.

***Where can I find more information?***

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

<https://www.canada.ca/en/environment-climate-change/services/air-quality-health-index.html>

For further information on air quality monitoring in Manitoba please

visit:[https://gov.mb.ca/sd/environment\\_and\\_biodiversity/air\\_quality/index.html](https://gov.mb.ca/sd/environment_and_biodiversity/air_quality/index.html)

If you have health concerns related to air quality, contact Health Links - Info Santé at (204) 788-8200 or toll-free 1-888-315-9257 or contact your health care provider.