

AIR QUALITY – What is it?

Air quality is a standard for how pure or dirty the air is. Monitoring air is crucial because unclean air is not good for our health as well as the health of the atmosphere. Each nation measures the air quality in many ways. However, sometimes we use our cellphone to know the weather. Our weather app shows the UV index from 0 to 10, for example. The first stage is low and the second stage is moderately followed by high risk, very high risk. Similarly, the air quality health index is specifically utilized for Canada to know the impact of air characteristics on health.

What is the Air Quality Health Index (AQHI)?

The Air Quality Health Index or "AQHI" is a scale designed to help you understand what the air quality around you means to your health.

It is a health protection tool that is designed to help you make decisions to protect your health by limiting short-term exposure to air pollution and adjusting your activity levels during increased levels of air pollution. It also provides advice on how you can improve the quality of the air you breathe.

The AQHI;

- Measures the air quality in relation to your health on a scale from 1 to 10. The higher the number, the greater the health risk associated with the air quality. When the amount of air pollution is very high, the number will be reported as 10+.
- Provides a category that describes the level of health risk associated with the index reading (e.g., Low, Moderate, High, or Very High Health Risk).
- Relays health messages customized to each category for both the general population and the 'at risk' population.
- Shows current hourly AQHI readings and maximum forecast values for today, tonight, tomorrow and the next day.



What does the AQHI mean to me?

Current AQHI in Canada can be found on the government of Canada website below, as well as information on directed activities that can occur for the AQHI reading.

https://weather.gc.ca/airquality/pages/index_e.html

How is the AQHI calculated? Current AQHI:

The AQHI is calculated based on the relative risks of a combination of common air pollutants that is known to harm human health. These pollutants are:

- Ozone (O₃) at ground level,
- Particulate Matter (PM_{2.5}/PM₁₀) and
- Nitrogen Dioxide (NO₂).

Levels of these pollutants are obtained by using continuous monitoring stations in Canada. GPAZ has 3 stations that gather this information and help predict the AQHI locally. More information can be found here: <https://gpaz.org/home/index.php>

Glossary of Terms

HEPA (high-efficiency particulate air) filter - A type of pleated mechanical air filter. It is an acronym for "high-efficiency particulate air [filter]". This type of air filter can theoretically remove at least 99.97% of dust, pollen, mold, bacteria, and any airborne particles with a size of 0.3 microns (µm).

Ozone - Ground level ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NO_x) and volatile organic compounds (VOC). This happens when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight. Ozone at ground level is a harmful air pollutant, because of its effects on people and the environment, and it is the main ingredient in "smog."

Particle pollution (also known as particulate matter or PM) - General term for a mixture of solids and liquid droplets suspended in the air.