AIR POLLUTION:
WHAT IS SULPHUR DIOXIDE?

Sulphur dioxide (SO_2) is one of a group of gases known as sulphur oxides (SO_x). SO_2 has some direct health effects but is also an important chemical leading to the formation of particulate matter (PM), a component of smog. SO_2 also contributes to the formation of acid rain.

WHO IS MOST AT RISK FROM AIR POLLUTION?

Even healthy young adults can experience health issues on days when the air is heavily polluted but some groups are more at risk:

- Children
- Seniors
- People with asthma, chronic obstructive pulmonary disease (COPD), cardiovascular diseases, diabetes
- Active people of all ages who exercise or work hard outdoors

Children / Seniors

HEALTH EFFECTS OF SULPHUR DIOXIDE

Health effects of SO_2, especially for people with respiratory problems, include:

Increased lung problems

Increased hospital admissions

Increased medical visits

WHERE DO SULPHUR OXIDES COME FROM?

SO_x comes mainly from man-made sources, but can also come from natural sources. Main sources of SO_x are (but not limited to):

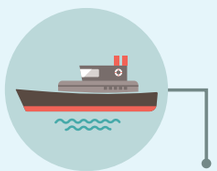
Mining, smelting and refining of metal ores

Volcanoes

Electricity generation from coal

Airplanes

Oil and gas industry



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HOW CAN I PROTECT MYSELF FROM AIR POLLUTION?

Know the best times to be active outdoors:

- Check the **Air Quality Health Index** in your community (airhealth.ca)
- If you have a heart or lung condition, talk to your health care professional about additional ways to protect your health when air pollution levels are higher

Ways to reduce exposure:

- Avoid or reduce strenuous outdoor activities when air pollution levels are higher

WHAT ACTION IS THE GOVERNMENT OF CANADA TAKING ON SULPHUR DIOXIDE?

- Federal regulations have reduced SO_2 emissions in Canada from key sources.
- Canada has agreed to international treaties to reduce SO_2 emissions.
- Canada has established the **Canadian Ambient Air Quality Standards** (**CAAQS**). These are health- and environment-based numerical values of outdoor air concentrations of pollutants intended to drive continuous air quality improvement in Canada. The CAAQS, a key element of the Air Quality Management System, were developed through a process steered by the Canadian Council of Ministers of the Environment (CCME).

		CAAQS Numerical Values			
Pollutant	**Averaging Time**	**Effective in 2020**	**Effective in 2025**	**Units**	**Metric**
SO_2	1 hour	70	65	Parts per billion (ppb)	The 3-year average of the annual 99th percentile of the daily-maximum 1-hour average concentrations
	Annual (1 year)	5.0	4.0		The average over a single calendar year of all the 1-hour average concentrations

LEVELS OF SULPHUR DIOXIDE IN OUTDOOR AIR

Levels of SO_2 in outdoor air are higher in certain areas of Canada, such as communities close to some types of industrial facilities and in areas of oil and gas extraction.

More information can be found on the **STATE OF THE AIR** website

http://airquality-qualitedelair.ccme.ca/en

For more information on air pollution, please visit www.canada.ca/en/health-canada/services/air-quality.html or **contact us** at: HC.air.SC@canada.ca

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