

How to deal with air pollution



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Outdoor air pollution (a toxic soup of chemicals, particulate matter, and biological materials that react with each other) is a major public health issue, contributing to chronic diseases, increased hospitalization, and premature mortality. In fact, the World Health Organization estimates that outdoor air pollution causes 3.7 million premature deaths worldwide every year.

What are the symptoms of air pollution? The short-term symptoms of exposure to air pollution include itchy eyes, nose and throat, wheezing, coughing, shortness of breath, chest pain, headaches, nausea, and upper respiratory infections (bronchitis and pneumonia). It also exacerbates asthma and emphysema. Long-term effects include lung cancer, cardiovascular disease, chronic respiratory illness, and developing allergies. Air pollution is also associated with heart attacks and strokes. Some of the culprits causing air pollution include:

- Carbon monoxide (CO) - reduces oxygen from reaching organs and tissues. Exposure to high levels also affect mental alertness and vision. Ozone (O₃) - is not the protective layer in the Earth's upper atmosphere, but the 'bad' one near ground level which forms as a result of toxic chemicals reacting with sunlight. This type of ozone irritates the respiratory system and can inflame and damage the lungs' lining. Long-term exposure results in diminished pulmonary function due to scarred tissue and an increase in respiratory infections.
- Sulfur dioxide (SO₂) - constricts your airways and in the long-term can diminish the lungs' defence mechanisms.
- Nitrogen oxide (NO₂) - causes inflammation of the respiratory system, reduces immunity to respiratory infections, and aggravates asthma and bronchitis.

Particulate Matter (PM) - causes significant damage especially to people suffering from chronic heart and lung disease who are at higher risk of premature death. Depending on the size of the inhaled particles, they deposit in the lungs and cardiovascular system migrating to other organs including the brain, ultimately affecting body functions.

Planning your trip

We often hear about large cities having the worst air pollution records; Hong Kong, Delhi, Manila, Cairo, Mexico City, and Santiago come to mind. However, smog also affects rural areas depending on weather patterns, geographic landscape, and whether polluting industries such as smelting, refineries, mining, and heavy manufacturing are nearby.

No matter your destination, you will not be able to escape air pollution. However, the length of exposure and concentration of pollutants will have an impact on your health during travel.

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Photo by Sophia Valkova, Unsplash.com

When planning your trip, consider these five factors to help you mitigate the effects of air pollution.

1. **Health Status:** What is your current health status? Do you have asthma, allergies, chronic bronchitis, heart or lung disease?
2. **Age:** Are you an elderly person or travelling with young children. The elderly are more susceptible to air pollution due to pre-existing conditions and newborns and children take in more air (higher level of pollutants) than adults for their body weight.
3. **Destination:** Are you going to an urban area, a city in a valley, or where rain is uncommon?
4. **Length of Trip:** Are you going for a short or long-term trip?
5. **Season:** What time of year are you going? Depending on seasonal weather patterns, smog tends to occur during hot and humid days. If you suffer from asthma or allergies, also consider the occurrence of pollen season at your destination.

Quick tips for travellers


Studies from around the world on the health impacts of low air quality are done on long-term residents. However, according to Dr. Chris Sanford, an expert on urban travel medicine, we still don't know the full extent of air pollution risks on travellers.

- While it may not be convenient, heed warnings to stay indoors during high smog alert days. Ask around and observe what locals are doing. Before you leave for your trip, find out where you can access local air quality alerts (ie. Newspapers, television, radio, or online).
- Avoid strenuous or extreme physical activity. Even if you are very healthy, low air quality can impact your health and may have long-term consequences. Seek immediate medical attention if you have trouble breathing or chest pain.
- If you have asthma: Minimize exposure and travel with an inhaler or an oral steroid (consult your doctor to see what is best for you).
- If you suffer from Chronic Obstructive Pulmonary Disease (COPD), including chronic bronchitis and emphysema: In addition to your usual medications, carry an inhaler, antibiotic, and oral steroid (consult your doctor to see what is best for you).
- If you have a history of cardiac or pulmonary disease: Ensure that your condition is under control before departure. You may want to reduce the duration of your stay in an area with high air pollution.

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- For older travellers, get a physical exam that includes a stress and lung capacity test prior to departure.
- If you are travelling with newborns or young children, minimize exposure or consider not travelling to areas with low air quality.
- Depending on your destination, find out from your doctor if a breathing mask is a good option for you.

How to find out about air quality at your destination?

Countries and regional blocs (ie. European Union) have different measurement standards and indexes to communicate air pollution levels. Generally however, indexes show scales from good to hazardous air quality along with advice for sensitive population groups. 

Click on the links below for local and global air pollution levels:

[AIRNow](#)

[WHO Exposure to Outdoor Air Pollution](#)