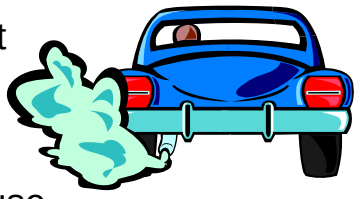
AIR QUALITY

The quality of the air we breathe, both indoors and outdoors, has a great impact on lung health. Fragile lung tissue is easily damaged by pollutants in the air, resulting in increased risk of asthma and allergies, chronic bronchitis, lung cancer and other respiratory diseases. Although the US has made great strides in cleaning up smog and soot in the nation's cities, outdoor air pollution still threatens the health of millions of Americans. Lung disease claims close to 335,000 lives in America every year and is the third-leading cause of death in the United States. Over the last decade, the death rate for lung disease has risen faster than that of any of the top five causes of death. Some of the deadly components of outdoor air pollution include:

Ozone (O3) is a highly reactive gas that is a form of oxygen, which results primarily from the action of sunlight on hydrocarbons and nitrogen oxides emitted in fuel combustion. Exposure to unhealthful levels of ozone can produce significant decreases in lung function, inflammation of the lung lining and respiratory discomfort, and is associated with hospital admissions and emergency room visits for respiratory problems.

Particulate matter air pollution (PM), a complex and varying mixture of substances that includes carbon-based particles, dust, and acid aerosols, is associated with increased premature deaths.
Particulate matter air pollution is especially harmful to people with lung disease such as asthma and chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema, as well as people with heart disease. Exposure to particulate air pollution can trigger asthma attacks and cause wheezing, coughing, and respiratory irritation in individuals with sensitive airways.

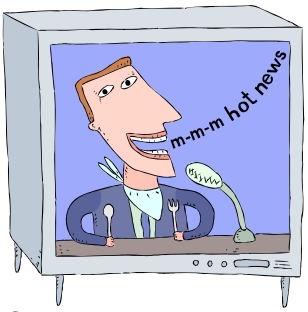


Nitrogen dioxide (NOx), which forms when fuel is burned at high temperatures, can irritate the lungs and lower resistance to respiratory infections such as influenza. Frequent or continued exposure to concentrations that are typically much higher than those formally found in the ambient air may cause increased incidence of acute respiratory illness in children. Principal sources of NOx are on-road vehicles (30%) and fuel combustion/ electric utilities (28%).

Sulfur dioxide (SO2) is formed when fuel containing sulfur (mainly coal and oil) is burned, and during metal smelting and other industrial processes. Major health concerns associated with exposure to high concentrations of SO2 include effects on breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Major sources of SO2 are electric utilities (67%) and industrial fuel combustion (17%).

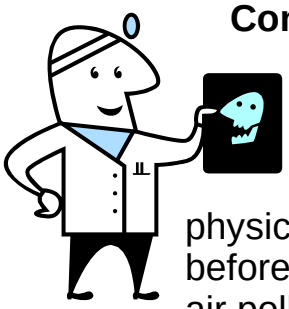
Minimizing the Effects of Outdoor Air Pollution
Everyone is adversely affected by poor air quality; however, individuals who suffer from pulmonary problems are much more sensitive to irritants in the atmosphere. Here are some tips for helping you avoid exposure to and complications from poor outdoor air quality.

Avoid exposure to noxious fumes
If you work on your car in the garage, make sure your garage door is completely open. Make sure exhaust fumes from the garage do not enter your house. Also, minimize your use of strong chemicals, replace the lids on solvent containers securely, and dispose of saturated rags in a sealed container. Don't mix any chemical solutions.



Stay updated on pollution reports
Before going outside, check the news reports for a mold and pollen count. If it is going to affect you, wear a mask outside. You may especially want to wear a mask when mowing, raking leaves, or working in your garden. Going out in the early morning hours will limit your exposure to the irritants in the atmosphere, compared to going out in the afternoon. Depending on the pollutants and the concentration of pollutants, various warnings are broadcast in accordance with guidelines from the Environmental Protection Agency:

- During a Stage I alert, conditions could worsen and become a hazard to your health.
- If it is a Stage II alert, stay indoors. Depending on your condition, you may be able to go outside for limited periods of time, but you should limit your activities.
- During a Stage III alert, it is not safe for you to go outside at all. Stay indoors and limit your activities while inside. If you are using your air conditioner during these times, don't forget to clean the filters frequently because atmospheric pollutants get on the filters and can harm you even while you are inside.



Consult your physician
No matter how careful you are while you're outside, atmospheric pollutants and irritants may cause respiratory problems. If you experience shortness of breath, do not turn up your oxygen or take increasing doses of your medication. Instead, consult your physician. Doctors assess your particular condition and level of tolerance before giving you medical advice on what to do about the harmful effects of air pollution.