STATE OF GLOBAL AIR

Air Pollution and Your Health: Understanding Your Health Risks from Air Pollution Exposure

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www.stateofglobalair.org

Air pollution isn't always easy to spot. When wildfire smoke or a truck's tailpipe soot clogs the air, it seems obvious. But even air that looks and smells clean can still be polluted. Most people around the world are exposed to unhealthy levels of pollution — and it is taking a toll on our health.

Globally, Air Pollution Contributes to Millions of Deaths Each Year

When you breathe polluted air, the pollution can pass through your lungs into your bloodstream. From there, it can reach your heart, brain, and other organs. Pollution can even pass through the placenta to affect a developing fetus. Pollution causes inflammation in your lungs and other body parts. Inflammation and other effects of pollution can permanently damage your tissues and cause disease. *Sometimes pollution causes health problems that are noticeable right away, but most problems build up gradually.*

Air pollution can affect your health within a few hours or days of exposure and...

- Cause ear, nose, and throat irritation
- Aggravate symptoms of
  - Allergies
  - Asthma
  - Bronchitis
  - Chronic obstructive pulmonary disease (COPD)
- Trigger fast or irregular heartbeats

Many of these issues may resolve when pollution levels decline but some can be chronic or even lead to death.

Breathing polluted air for a long period of time (months or years) can cause many severe health problems including...

- Heart diseases — arrhythmia, high blood pressure, heart attack, ischemic heart disease
- Lung diseases — Lung cancer, infections, COPD, and asthma
- Premature birth or low birth weight
- Increased risk of other health problems [video]
- Stroke
- Reduced life expectancy

Exposure to air pollution, especially household air pollution, has also been linked to infectious diseases including tuberculosis and pneumonia, as well as cataracts.

Recent research shows that air pollution worsens COVID-19 outcomes, including higher disease severity and higher risk of mortality linked to COVID-19.

Increasing evidence is also linking air pollution to brain disorders, including impact on neurodevelopment in children and neurodegenerative diseases such as Parkinson's disease and Alzheimer's disease in older adults.

The Toll of Air Pollution

When people get sick or die early from air pollution exposure, it is devastating for individuals and families. At the population level, the disease burdens of air pollution strain health care systems and have rippling effects on communities and economies.

Air pollution accounts for more than

1 in 9 deaths globally.

In 2019, global air pollution accounted for

40% of deaths from chronic obstructive pulmonary disorder (COPD)

26% of deaths from stroke

20% of deaths from ischemic heart disease

19% of deaths from diabetes

19% of deaths from lung cancer

31% of deaths in babies less than 28 days old

30% of deaths from lower respiratory infections

Some People Suffer a Heavier Burden

The toll of air pollution is not borne equally by everyone. Some people face worse pollution exposure or more severe health impacts, most often through no fault of their own.

Where you live and work

People who spend more time breathing polluted air are more likely to become sick from it. Those working outdoors and living in more polluted countries, cities, and neighborhoods face a higher risk of health problems.

Your stage of life

Children, older adults, and pregnant people face higher health risks from air pollution. At these stages of life, people can suffer worse health problems from the same amount of pollution.

Your health status

People with existing chronic diseases can be more vulnerable to health effects of air pollution.

Socioeconomic factors

People who face disadvantages related to socioeconomic status or race/ethnicity often have higher pollution exposures, more underlying health problems, and less access to health care — which makes them more likely to become seriously ill.

How do we know?

What we know about the health effects of air pollution comes from hundreds of scientific studies conducted in many countries over many decades. Scientists look at patterns of disease and death at the population level and also perform laboratory studies to understand how pollutants move through the body and affect health.

Source Matters

Different places have different combinations of sources and types of pollution. The type of pollution influences the health impacts seen in different groups of people. Major sources of $PM_{2.5}$ vary substantially by country, but key contributors include energy generation, industry, transportation, residential fuel use, windblown dust, and agriculture.

Fine particle outdoor air pollution ($PM_{2.5}$) is the largest driver of air pollution's overall burden of disease worldwide.

Particle emissions from cookstoves used in homes across many low- and middle-income countries account for most pollution-linked deaths among newborns.

The impacts of ground-level ozone pollution from traffic emissions and other sources on COPD are most acutely felt in older populations.

Nitrogen dioxide (NO_2), a component of traffic-related pollution, can aggravate respiratory problems such as asthma and is most common in urban areas.

Learn More

Air pollution trends and the associated disease burden: www.stateofglobalair.org

Information about the air quality where you live or around the world: www.aqicn.org and www.openaq.org

Learn how individuals can reduce exposure to air pollution: https://www.who.int/publications/i/item/9789240000278

Additional Resources

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