

OZONE POLLUTION 101

What is ozone?

Ground-level ozone pollution, also commonly known as smog, is formed in the atmosphere when certain chemicals combine with heat and sunlight. Power plants, vehicle exhaust, and chemical solvents can all be sources of smog-forming chemicals, including nitrogen oxides (NOx) and volatile organic compounds (VOCs).

Ozone sometimes appears as yellow haze above polluted areas like major cities but can occur anywhere—both in urban and rural environments and everywhere in between. Air pollution can travel hundreds of miles from its source. Regardless of location, ozone levels are highest on hot, sunny days, which means extreme heat caused by climate change has resulted in more high-ozone days. Worse, then ozone, a heat-trapping gas, in turn contributes to global warming. It's an unfortunate cycle. Breathing smog is harmful to health, which is why many families check the air quality index to protect their children before deciding whether to play outdoors on hot days.

How does ozone affect our health?

Smog is associated with a number of health concerns. Mostly it's highly irritating to the lungs: it can trigger asthma attacks, increase the risk of lung infections, and interfere with normal lung development. The American Lung Association says breathing elevated levels of smog is like getting sunburn on the lungs.

Ozone has also been linked to coughing, shortness of breath, chest pain, heart failure, preterm birth, and low birth weight. It can even be deadly. Long-term exposure to smog may lead to permanent lung damage and can cause central nervous system and reproductive harm. Ground-level ozone is a substantial burden on our health care system and has been associated with increased emergency visits.



Children are hit hardest by smog because they take more breaths per minute than adults, receiving proportionately higher doses of pollution. Children exercise more and spend more time outside than adults, which means they are more exposed to outdoor air pollution. Outdoor workers and people over 65 are also at higher risk from ozone pollution.

How
ground-level
ozone impacts
our health

Don't confuse your ozones

Ground-level ozone is different from the stratospheric ozone miles above the Earth.

Stratospheric ozone is good; it is even sometimes referred to as Earth's sunscreen because it filters the sun's ultraviolet radiation, reducing its harmful effects at the surface of the Earth. By protecting us from too much sunlight, stratospheric ozone can help prevent skin cancer and cataracts.

This is why action has been taken to reduce and control substances that damage the protective ozone layer.



Who regulates and monitors ground-level ozone?

The Environmental Protection Agency (EPA) regulates ground-level ozone under the National Ambient Air Quality Standards, or NAAQS (this rhymes with “snacks”). These standards are supposed to be updated every five years.

Ozone reduction can also occur as a result of pollution regulations imposed on cars, trucks, and power plants.

There are various agencies that monitor and analyze real-time ozone concentrations in the air. You can find air quality data, including ozone levels, on your favorite weather app.



Environmental justice and ozone

While ozone is a threat to everyone, the impacts are not felt equally. Communities of color and low-income communities face the greatest risk.

Systemic racism has created practices that force Black, Latino, Indigenous, and other families of color to live in places that are disproportionately harmed by ozone, such as urban heat islands or housing located near pollution sources, like heavily trafficked roads, factories, or ports. These families not only feel the health impacts of increased exposure to ozone pollution, but also may experience the financial burden of missed work days and medical costs from frequent doctor or hospital visits.

Black communities with greater exposure to air pollution already have higher than average childhood asthma rates. Ozone is especially harmful for these children.

Take action

More than 100 million individuals in the US are regularly exposed to unhealthy levels of ozone pollution—including nearly 24 million children.

These families and communities living with ozone pollution every day deserve the strongest possible ozone standards. Ozone’s health burdens are preventable and avoidable.

Parents and caregivers can get involved by joining Moms Clean Air Force to demand EPA’s timely updates of national air quality standards for ozone as required by law. All children deserve to breathe clean air.

Learn more and take action: www.momscleanairforce.org



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Full list of sources:
momscleanairforce.org/sources-ozone-101