



Center for
Urban Responses
to Environmental
Stressors



Air Quality

FACT
SHEET

Air Quality is a Neighborhood Thing

Dr. John J. Reiners, Jr. was a part of the Geospatial Determinants of Health Outcomes Consortium (GeoDHOC) research team that worked to connect the air we breathe with our health. They set up 100 air monitors in Detroit and Windsor and matched the information with health data. They found that air quality is different depending on your location, and discovered relationships between the amount of pollution in a neighborhood and how many people went to the hospital or emergency room for asthma. Dr. Reiners shared the results of his study to better inform people about the air they breathe. You can view his "Air 101" presentations by visiting our website at <https://cures.wayne.edu/community-engagement>.



Common Types of Air Pollution

There are a mix of chemicals that pollute the air. Here are some of the most common types of outdoor air pollution and where they come from:

Nitrogen Oxides (NO, NO₂, NO_x)

Nitrogen oxides are pollutants that contain oxygen and nitrogen. They are created from burning fossil fuels, so most NO_x pollution comes from cars, trucks, and incinerators.

Sulfur Dioxide (SO₂)

Sulfur dioxide comes from burning fuels like coal, oil, and gasoline. It has a strong odor, sometimes similar to rotten eggs. Large amounts of SO₂ can come from refineries and coal-fired power plants.

Particulate Matter (PM_{2.5}, PM₁₀)

Particulate matter (PM) is a term for the mix of small particles and dust in our air. PM comes from all kinds of sources, like burning, power plants, construction sites, and cigarette smoke. It's measured in micrometers, so small that the eye can't see it!

Ozone (O₃)

The ozone layer in the atmosphere is great for protecting us from the sun's harmful rays, but close to the ground it can cause difficulty breathing and affect asthma. Ozone is created when other forms of pollution mix together with sunlight and high heat.

Air Pollution 101

What's in our Air?

Air is mostly nitrogen and oxygen, along with a few other elements. We're not supposed to see, taste, or smell the air. When we do, that means something from the environment, or pollution, is added.

What Pollutes the Air?

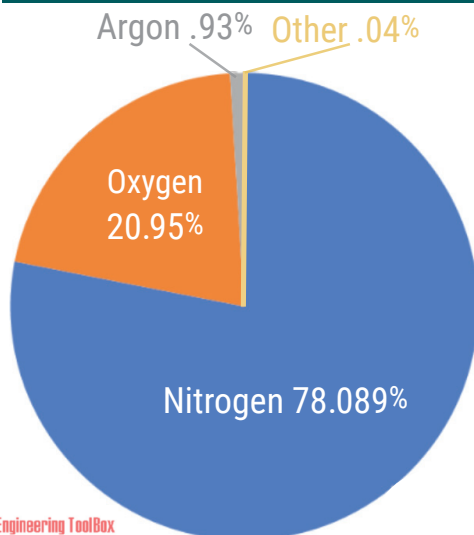
Pollution can be both natural and man-made. Natural sources of pollution include smoke from fires and pollen. Most of the time when we think about pollution, we think of man-made sources:

- **MOBILE SOURCES:** mobile sources of pollution come from cars, trucks, and other motor vehicles.
- **STATIONARY SOURCES:** pollution sources are stationary when they do not move. This includes factories, oil refineries, and other industrial facilities.
- **HOME SOURCES:** sometimes pollution can be in our home. Cigarette smoke, incense, and some cleaning chemicals are common indoor air pollutants.

What are the Effects of Poor Air?

Air pollution can trigger asthma and increase risk for cardiovascular illness, like heart disease and stroke. Newborns, young children, older adults, and expecting mothers are most vulnerable to getting sick from air pollution.

DRY AIR CONTENT



The Engineering ToolBox
www.EngineeringToolBox.com

- SEE BACK -





COMMUNITY SPOTLIGHT: Southwest Detroit Environmental Vision



Southwest Detroit Environmental Vision (SDEV) is a local nonprofit whose mission is to improve the environment and strengthen the economy of Southwest Detroit. One of the ways they are living this mission is through their advocacy and engagement on reducing diesel emissions.

Diesel trucks produce pollutants that can trigger asthma, COPD, and other health issues. With over 10,000 diesel trucks crossing the Ambassador Bridge daily, their community faces pollution on a regular basis. Through their Clean Diesel program, SDEV works with truck companies to find funding for replacing old engines and equipment. They also have a campaign against idling in which they coordinate with city council and the Detroit Police Department to enforce the city's anti-idling ordinance to penalize trucking companies who let their trucks idle for too long.

How to Protect Yourself from Poor Air Quality

The American Lung Association provides recommendations for protecting yourself from the impacts of air pollution. Here is a short list of their recommendations, all of which can be read at www.lung.org.

1. Check daily air pollution forecasts in your area.
2. Avoid exercising outdoors when pollution levels are high.
3. Always avoid exercising near high-traffic areas.
4. Don't burn wood or trash.
5. Send cigarette smokers outdoors.



To learn more
about CURES, contact
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Community Questions

Q: Who do I call if I want to report odor or air violations?

A: The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has a hotline to call if you think there is an air violation: 313-456-4712. You can also call their Detroit/Wayne County office at 313-456-4700.

Q: Who do we call if we see a diesel vehicle violating?

A: If you see a truck kicking black soot or idling, take down the plate number, location, truck owner (if their name is on the side) and call the Detroit Police Department. Call Southwest Detroit Environmental Vision at 313-842-1961 for more information.

Q: Is it true that plants help clean indoor air?

A: Yes! House plants are natural air filters and can help reduce toxins in your home. NASA found many household plants remove volatile organic compounds like benzene and formaldehyde and other toxins in their Clean Air Study. Plants tested included the spider plant, snake plant (mother's tongue) and peace lily.



Q: How can I check the air quality around me?

A: If there's a "bad air day" where ozone or other pollutants are going to be high, it may be reported with the local weather. The State of Michigan also has an Air Quality Index (AQI) that tells how much air pollution is in your city. Visit the AQI at www.deqmiar.org

