

Ozone: What Is It, Why It Matters, & Actions to Take

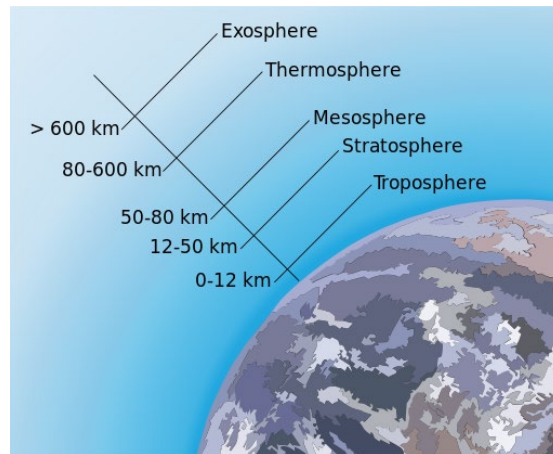
This information can be used by the media during poor air quality days to educate residents about the simple steps they can take to protect their health and improve air quality.

Overview

Broward County is located within the United States Environmental Protection Agency's designated Southeast Florida Airshed, which consists of Miami-Dade, Broward, and Palm Beach counties. The main air pollutant of concern within this shared airshed is ozone.

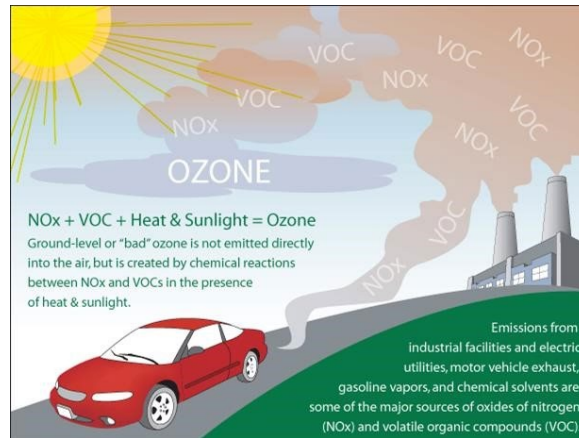
Good Up High, Bad Down Low

Although ozone occurs naturally in the stratosphere, where it forms a protective layer that shields us from harmful ultraviolet (UV) rays, it is harmful to our respiratory system and the environment in the lowest level of our atmosphere where we live and breathe (the troposphere). Therefore, stratospheric ozone is referred to as good ozone, while ground-level ozone is referred to as bad ozone.



Source: [Wikipedia](#)

Ground-level ozone is the main ingredient in smog: air pollution that reduces visibility. When emissions from motor vehicles—as well as sources such as gas stations power plants, and lawn maintenance equipment—interact with sunlight and warm temperatures, ozone is formed. The reactions that create ozone are hindered by water vapor (humidity) and high winds. In most of the United States, ozone formation is most prominent during the summer months. Due to our tropical temperatures in South Florida, ozone can form at any time of the year. However, it is most likely to form in the spring.



Source: Environmental Protection Agency (EPA)

Broward County's Air Quality

As it related to ozone, the air quality in Broward County is normally classified in the good range of the Air Quality Index (AQI) during the majority of the year. The AQI is an index for reporting daily air quality. It tells you how clean or polluted your air is, and what associated health effects might be a concern for you. Think of the AQI as a yardstick that runs from 0 to 500; the higher the AQI value, the greater the health concern. When the AQI level reaches above 100, air quality is considered to be unhealthy.

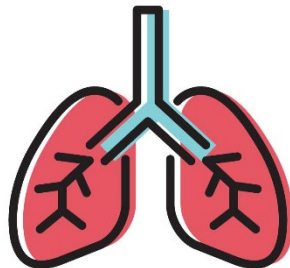
From 2020 to 2023, Broward County has experienced an average of 76% good air quality days per year. Our main source of air pollution is transportation, specifically from motor vehicle emissions. Currently, there are approximately 1.9 million passenger vehicles registered in Broward County. This equates to about one per resident.

| Air Quality Index | Who Needs to be Concerned? | What Should I Do? |
|---|---|--|
| Good 0-50 | It's a great day to be active outside. | |
| Moderate 51-100 | Some people who may be unusually sensitive to particle pollution. | <p>Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.</p> <p>Everyone else: It's a good day to be active outside.</p> |
| Unhealthy for Sensitive Groups 101-150 | Sensitive groups include people with heart or lung disease, older adults, children and teenagers. | <p>Sensitive groups: Reduce prolonged or heavy exertion. It's OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath.</p> <p>People with asthma should follow their asthma action plans and keep quick relief medicine handy.</p> <p>If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.</p> |
| Unhealthy 151 to 200 | Everyone | <p>Sensitive groups: Avoid prolonged or heavy exertion. Move activities indoors or reschedule to a time when the air quality is better.</p> <p>Everyone else: Reduce prolonged or heavy exertion. Take more breaks during all outdoor activities.</p> |
| Very Unhealthy 201-300 | Everyone | <p>Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better.</p> <p>Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.</p> |
| Hazardous 301-500 | Everyone | <p>Everyone: Avoid all physical activity outdoors.</p> <p>Sensitive groups: Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.</p> |

Source: Environmental Protection Agency (EPA)

Ozone and Your Health

Besides the unsightly effects of ozone (smog), it can also be very bad for your health. Ozone can trigger a variety of health problems including chest pains, coughing, nausea, throat as well as nose irritation, and congestion. Ozone pollution reduces the capacity of the lungs and can increase the effects of respiratory illness, heart disease, and asthma. If inhaled in greater quantities and/or if there is repeated exposure over time, it can cause permanent lung damage. Young children, older adults, and those with preexisting respiratory conditions—such as asthma or bronchitis—and heart disease are most at risk.



Things You Can Do During Poor Air Quality Days:

To reduce the potential for ozone exposure, here are a few things individuals, business, and other organizations—especially those who care for sensitive groups, such as schools, nursing homes, and hospitals—can do during air quality days that fall outside of the good (green) range:

- Avoid unnecessary use of your cars and other vehicles.
 - Combine trips whenever possible. This is known as trip chaining. For example, if you know your local pharmacy is on the way to your usual grocery store, try stopping at both places in the same trip instead of making two separate trips.
- Carpool or use [mass transit](#).
 - Whether to work or to dinner, try coordinating with a coworker or friend to carpool. This is not only better for the environment, but it will also save you money!
- Keep your vehicles properly tuned
 - View [tips](#) on how to stay on top of car maintenance to improve mileage and reduce air pollution.
- Report smoking vehicles
 - If you see a vehicle generating visible smoke continuously from its exhaust pipe/s for more than five seconds, that's a smoking vehicle! Since these generate more air pollution than a typical vehicle and are in violation of the Broward County Code, we encourage residents to [report smoking vehicles](#).
- Refuel your car around sunset when it is possible and safe to do so, and don't top off the tank.
 - This minimizes the chance of emissions that escape from pumping gas reacting with sunlight to form ground-level ozone.
- Ride your bike or walk whenever it is possible and safe to do so.
 - This is not only a great way to get exercise, but also helps our air stay cleaner!

