

How to Survive and Thrive When the Air Becomes Toxic



Dr. Judge guides a patient through a comprehensive lung function test.

“It’s better, but still difficult.” That’s the summary view of Dr. Gurdev (Dave) Judge, a Cary-based allergist/immunologist who is also a board-certified pediatrician.

His reference is principally to the quality and temperature of the air we breathe—especially through the summer months. “When it is hot and humid, with the temperature at 90 and above, it creates a stressful condition, for small children to the elderly, and especially for people who have asthma, bronchitis, and COPD—a chronic lung disease that includes chronic bronchitis, emphysema, or both. COPD affects the lungs and causes reduced airflow, which makes it hard to breathe. It is also progressive, which means it worsens over time, but with treatment, symptoms may improve.”

But, Dr. Judge points out, “even people without these afflictions have trouble breathing when there are 95-degree-plus temperatures for a week or more,”

CODE RED, PARTICULATE MATTER, OZONE

“And now we are at the time of year where we have an increasing number of *Code Red* days,” notes Dr. Judge, “which basically means that breathing can be hazardous to your health. Only *Code Purple* days are worse. Anyone, predisposed or not, can have respiratory problems when the air gets this polluted. *Code Red* and *Code Purple* days are far more common when the weather is hot, hazy, and humid, and the air is stagnant with no cleansing relief from rain.”

For more information about diagnostic and treatment options for allergies, asthma, and sinus conditions, contact:

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“THE PRINCIPAL SOURCE FOR BOTH GROUND-LEVEL OZONE AND PARTICULATE MATTER . . . ARE EMISSIONS FROM CARS, DIESEL FUELED TRUCKS, AND OTHER VEHICLES.”

Dr. Judge points out that, as the Triangle continues to grow and put more vehicles on our highways, there is an increasingly serious pollution problem from particulate matter. This includes road dust, diesel soot, fly ash, wood smoke, and sulfate aerosols that are suspended as particles in the air—an unhealthy mixture of visible and microscopic solid particles and minute liquid droplets known as aerosols.

“This is troublesome to people with perfectly normal respiratory abilities,” he says, “and even more so, of course, for people with asthma and a predisposition to allergies. In fact, I find in this practice that an increasing number of people are becoming allergic to these forms of particulate matter. As we all know, the combustion of fossil fuels is the principal source of fine particle emissions—including the burning of coal, oil, diesel fuel, gasoline, and wood in transportation, power generation, and space heating.

“Ground-level ozone is an equally serious problem,” he notes. “Ozone is a reactive chemical. It has three oxygen atoms and that third oxygen atom is always ready to ‘react’ with something—such as your airways, lungs, or eyes. Ground-level ozone often irritates the respiratory system, impairing a person’s ability to breathe. It specifically can aggravate asthma.”

Ozone is difficult to detect, he explains. “You can’t see it and, in low concentrations, you can’t smell it. It is found in both the upper atmosphere and at ground level.

“Ground-level ozone makes my asthma patients more sensitive to allergens that lead

to asthma attacks. Ozone can also inflame and damage the linings of the lungs, as well as the cells that line the lungs—and, over time, can lead to permanent problems. There is also concern that the developing lungs of children repeatedly exposed to high levels of ozone may be damaged.”

The principal source for both ground-level ozone and particulate matter, says Dr. Judge, are emissions from cars, diesel-fueled trucks, and other vehicles.

TOXIC STRESS

Increased temperatures—especially over longer periods of time—and increasing air pollutants present a growing health concern, notes Dr. Judge, but they are just one of the “toxic” issues affecting our health.

“Asthma, COPD, and allergy conditions are worsened, in my view, by increasing levels of stress in our society. While there are amazing achievements resulting from more sophisticated technology, there is also a price to pay. The advent and amazing global proliferation of digital technology is, for many people, a source of stress. Many of us—perhaps most of us—cradle our smart phones and make ourselves available around the clock to participate in this amazing new technology—whether we are on a holiday or in the middle of the night. In short, we are available to others any time, day or night.”

And, in fact, he says, “this is high stress behavior. The simple truth is that stress makes any health condition worse—asthma, blood pressure, diabetes, any medical condition.”

TAKING PRECAUTIONS

While there is a continuing need to address the problems of air pollution, Dr. Judge says, “More immediately people need to understand their options to protect their own health.

“First, I advise my patients with allergies and asthma to be alert to pollution advisories issued daily by the Division of Air Quality. This information is available by radio, television, newspapers, and on the Internet at www.epa.gov/airnow.

“On **Code Red** days, it is important for all of us to limit or avoid prolonged outdoor exertion. Plan outdoor activities when ozone levels are lower, usually in the early morning or evening. On the **Code Purple** days, when the air is considered very unhealthy, we all need to use caution with outdoor activity. The best advice is to stay inside and use air conditioning both in our homes and our cars.”

CURBING AIR POLLUTION

Dr. Judge points out that each of us can contribute to improving the quality of the air we breathe. “Three of the state’s categories describing the level of air pollution place demands on all of us that are actually not difficult and quite reasonable,” he says. “The categories are **Orange**, when air pollution levels are unhealthy for sensitive groups, such as people with asthma; **Red**, when the air is unhealthy for all of us; and **Purple**, when air pollution is considered ‘very unhealthy’ for everyone, regardless of their state of health. In each of these three categories, the state Division of Air Quality asks us to do the following:

- Limit daytime driving
- Limit vehicle idling
- Refuel vehicles after dark
- Don’t “top off” gas tank
- Avoid periods of congested traffic
- Use water-based paints
- Use transit or carpool
- Bike or walk for short trips
- Use newest or best maintained car
- Combine trips and share rides
- Postpone using gasoline mowers
- Barbecue without starter fluid

When air conditions are in the red and purple zones, says Dr. Judge, “people with respiratory problems, and perhaps others, should consider wearing protective face masks if they need to be outside, which will decrease their exposure to allergens.”