[IMAGE]

All About Air Quality: How Safe Are You?

By Claudia Anrig, DC

In the past decade, recorded cases of asthma have increased exponentially. While studies are being done to connect this prevalence increase to diet and allergies, among other things, it's safe to assume that the culprit, at least in part, could be our increasingly poor air quality.

NASA's World Map

A new NASA world map released in September 2013 compares data from the past 150 years to show an increasingly "browning" world, with dark patches of toxic air concentrated mostly over the United States, Europe, China and India, the centers of the industrialized world.

NASA's Earth Observatory website states: "In most cases, the most toxic pollution lingers for a few days or even weeks, bringing increases in respiratory and cardiac health problems at hospitals. Eventually the weather breaks, the air clears, and memories of foul air begin to fade. But that's not to say that the health risks disappear as well. Even slightly elevated levels of air pollution can have a significant effect on human health. Over long periods and on a global scale, such impacts can add up."

smog - Copyright â Stock Photo / Register Mark According to the U.S. Environmental Protection Agency (EPA), approximately 2.1 million deaths per year are attributable to one form of atmospheric pollution: *fine particulate matter* or PM2.5. Car exhaust, smokestack effluent and other industrial sources emit PM2.5.

Additional NASA Research

In addition to measuring increasing outdoor air quality with satellite imagery, NASA has researched methods of cleansing the atmosphere in future space stations to keep them fit for human habitation. In its research, NASA found that many common houseplants fight pollution indoors. These common household plants remove significant amounts of harmful gases out of the air via the everyday process of photosynthesis. Some pollutants are neutralized in the plants' soil.

Top 15 Houseplants Recommended by NASA for Indoor Air Purification

- *Hedera helix*: English ivy
- *Chlorophytum comosum*: spider plant
- *Epipiremnum aureum*: golden pothos
- *Spathiphyllum*: "Mauna Loa" peace lily
- *Aglaonema modestum*: Chinese evergreen
- *Chamaedorea sefritzii:* bamboo or reed palm
- *Sansevieria trifasciata:* snake plant
- *Philodendron scandens* "oxycardium" heart leaf philodendron
- *Philodendron selloum* / selloum philodendron
- *Philodendron domesticum*: elephant ear philodendron
- *Dracaena marginata*: red-edged dracaena
- *Dracaena fragrans:* "Massangeana" cornstalk dracaena
- *Dracaena deremensis*: "Janet Craig" dracaena
- *Dracaena deremensis:* Warneck dracaena
- *Ficus benjamina*: weeping fig

Note: Prior to introducing any house plants into the home, review this informative article regarding plant safety from the University of

Indoor Air Quality: Even Worse?

The Environmental Protection Agency estimates that people spend 90 percent of their time indoors – but that indoor air quality can be two to five times more polluted than outdoor air, and in some studies, more than 100 times more polluted. According to a study by the California EPA, adults and children breathe between 10,000 and 70,000 liters of air every 24 hours. As stated by WebMD, indoor air pollution is one of the most serious environmental threats to your health, yet no agency can regulate it and few studies have been done about its effects on your health.

What are some of these indoor pollutants? In a 2009 study published in *Environmental Health Sciences*, scientists identified 586 chemicals, including the pesticides diazinon, chlorpyrifos and DDT. Phthalates were found in very high levels. Even more disturbing, they detected 120 chemicals they couldn’t even identify.

The deadliest three indoor air pollutants are 1) carbon monoxide: approximately 400 deaths and thousands sickened annually; secondhand smoke: 7,500-15,000 children hospitalized or sickened with respiratory tract infections, and older adults with cardiovascular or lung illness are at higher risk of health problems; and radon gas: silent, odorless, and found in many American homes, it is the second biggest cause of lung cancer after cigarette smoke.

Tips for Improving Air Quality

In its publication *The Daily Green*, the American Lung Association offers 25 tips on how to keep the air in your home healthy. Here's a small sampling:

- *Don't allow smoking indoors:* Each year, secondhand smoke sends up to 15,000 children to the hospital.
- There is no safe level of secondhand smoke; never let anyone smoke inside your home.
- *Don't idle the car in the garage:* Carbon monoxide exposure can lead to weakness, nausea, disorientation, unconsciousness and even death. Fumes from cars or lawnmowers left running in enclosed spaces can endanger your health.
- *Use low-VOC paints:* Paints release VOCs, or volatile organic compounds, for months after application. VOCs can include highly toxic chemicals such as formaldehyde and acetaldehyde. Use low-VOC or no-VOC paints, varnishes and waxes.
- *Clean your air conditioner and dehumidifier:* Standing water and high humidity encourage the growth of dust mites, mold and mildew. All of these can worsen asthma. Use a dehumidifier or air conditioner when needed, and clean both regularly.
- *Beware of dry-cleaning chemicals:* Dry-cleaning solvents can be toxic to breathe. Let dry-cleaned items "air out" outdoors before bringing them inside.
- *Avoid toxic household products:* Hair and nail products, cleaning products, and art and hobby supplies can increase levels of VOCs in your home. Some of the VOCs in these products have been linked to cancer, headaches, eye and throat irritation, and worsened asthma.

Resources

- "The Global Toll of Fine Particulate Matter: Image of the Day." NASA Earth Observatory website, Sept. 19, 2013.

- Wolverton BC, et al. A study of interior landscape plants for indoor air pollution abatement: The NASA Clean Air Study. July 1, 1989.
- "How Much Air Do We Breathe?" California Environmental Protection Agency, Research Note 94-11, August 1994.
- Gavigan C. "3 Shocking Facts About the Air in Your Home." WebMD.com, July 29, 2009.
- "How to Purify the Air in Your Home." American Lung Association; posted on Goodhousekeeping.com.
- "Safe and Poisonous Houseplants." University of Connecticut, College of Agriculture and Natural Resources: home and garden education center.

Claudia Anrig, DC, practices in Fresno, Calif., and is on the board of directors of the International Chiropractic Pediatric Association, an organization that can answer your questions regarding the value of chiropractic care during and after pregnancy.