

## RISING CARBON

# Ahdoot: How rising carbon is changing seasonal allergies



Samantha Ahdoot, M.D. Posted: Wednesday, June 3, 2015 10:30 pm

[Ahdoot: How rising carbon is changing seasonal allergies](#) By Samantha Ahdoot

Nasal sprays, eye drops, pills, melts and inhalers fill the pharmacy shelves. Kids are kept inside with windows shut, parents struggle through work with bright red, itchy eyes, soccer practices are skipped and allergy shots begun. This is the face of allergies, circa 2015.

If you think allergies are worse than they used to be, you are right. As our air is changing, plants are changing along with it. We'd better get used to it.

The concentration of some gases in our atmosphere has changed dramatically in the past century. The concentration of carbon dioxide (CO<sub>2</sub>) has increased from about 280 parts per million (ppm) to 400 ppm over the past 100 years, through the combustion of fuels like coal, oil and gas. This is causing a myriad of changes in growing plants, which “breathe” CO<sub>2</sub> and convert it to energy and oxygen through the process of photosynthesis.

Rising CO<sub>2</sub> makes many plants grow better and faster. Some crops like wheat, along with vines like poison ivy, grow better with some extra carbon. However, rising CO<sub>2</sub> does not affect just the *quantity* of plants. It also affects the *quality*.

Studies done on ragweed plants have found that plants grown in today’s CO<sub>2</sub> concentrations produce much more pollen than they did in concentrations of the last century. Plants grown at 370 ppm produced about twice as much pollen as plants grown at 280 ppm. This was borne out by a study this year of pollen-monitoring data from the past 20 years in the United States. Pollen counts have increased by more than 40 percent since the 1990s.

Warmer temperatures are also changing the face of seasonal allergies. The first frost comes later and the spring thaw comes earlier in many regions of the U.S. This lengthening of the growing season is closely correlated to the lengthening of the pollen allergy season. Northern latitudes of the country have experienced about a 19-day increase in the pollen allergy season, while mid latitudes have had an increase of about 10 days. Southern states that never had much frost to begin with, have had little change.

More than 16 percent of American children today experience hay fever or respiratory allergies. In Virginia alone, more than 1.1 million people now live with asthma or chronic respiratory disease. According to a new report from the Natural Resources Defense Council, “Sneezing and Wheezing: How Climate Change Could Increase Ragweed Allergies, Air Pollution, and Asthma,” Richmond is the asthma capital of the country.

Over the past month, my pediatric office has been flooded with children and their parents experiencing intractable allergies. Many of these children are requiring multiple medications to control their symptoms, but sometimes even this is not enough. My practice has had two

children, both under the age of 2, admitted to the hospital in the past month due to severe wheezing caused by intractable allergies.

You can't mess with the composition of the atmosphere and not expect to see some changes in our own health. Children — who spend more time outside, are more physically active and have faster rates of breathing — are uniquely vulnerable to changes in air quality. They need to be protected against further increases in CO<sub>2</sub> concentration and the myriad health risks that come along with it.

The federal Clean Power Plan will be called many things over the next year. As a pediatrician and a mother, I view it as essential to protect our children's health, their safety and their future.

Children deserve to live and raise their own families in an atmosphere that is as clean and safe as the one we have enjoyed. Children deserve protection against harmful carbon pollution. Children deserve healthier air. They will breathe easier.

Samantha Ahdoot, M.D., FAAP, is a pediatrician in Alexandria and an assistant professor of pediatrics at the Virginia Commonwealth University School of Medicine's Inova campus. Contact her at [atkinssam@yahoo.com](mailto:atkinssam@yahoo.com).