Allergies Getting Worse? Blame Global Warming?

One of the few potentially positive effects of climate change, at least in the short term, is that increased concentrations of carbon dioxide in the atmosphere may enhance the growth of plants. That could be good for agriculture — though warming temperatures and changing rain patterns in a warmer world might wipe out that advantage. But there are no unalloyed gifts from climate change. Recent research suggests that global warming will also exacerbate respiratory allergies, as higher CO_2 concentrations lead to vast increases in ragweed pollen production. "There's no denying there's a change," says Paul Ratner, an immunologist with the American College of Allergies. "It's definitely bad news for people who have allergies."

Asthma and other respiratory ailments are already on the rise in much of the world. The World Health Organization estimates that 300 million people globally have asthma, with 250,000 dying from the disease each year. That rate is up considerably over the past few decades, and scientists say a number of factors could be at work. One clear reason is rising levels of ragweed pollen — which can be connected directly to rising levels of CO_2. Researchers have shown repeatedly that elevated levels of CO_2 stimulate weeds to produce pollen out of proportion with their growth rates — meaning you get more pollen per plant, which means more allergies. Even worse, it seems that the weediest species seem to thrive disproportionately in high CO_2 environments. The wave of urbanization in America and much of the world doesn't help — the urban environment, often hotter and with more CO_2than rural areas, is ragweed heaven. "Urban places, because of the baking effect of that increased concrete, definitely pollinate more," says Ratner. It doesn't help that warming will also increase the production of ground-level ozone, a respiratory irritant that worsens asthma.

Longer growing seasons in a warmer world may further worsen allergies. A study in September's *Journal of Allergy and Clinical Immunology* reported data from 1982 to 2001 showing that, for example, increasingly early pollination of the European olive in Spain led to higher overall pollen counts, similar to what is found in warmer parts of the Mediterranean; comparable outcomes can be expected in other temperate parts of the world as climate change kicks in. A similar effect will also be felt in the northward shift of what is known as the hardiness zones — meaning that northern countries where allergies were once rare may no longer be as safe. "Those borderline northern regions will definitely feel changes," says Ratner.

The causes of allergies and respiratory disorders are complex, and scientists cannot predict exactly how much impact climate change will have on their global rates. But the recent data — records on pollen counts rarely go back more than 20 years — certainly would indicate that warming will only make things worse. So, what can be done to help millions of sneezing, watery-eyed patients? As allergy sufferers already know, not a whole lot. But any action taken to control rising CO_2 levels might at least help stem the increase in global allergy rates. So far, the global asthma epidemic shows no signs of abating, and in a warmer world, effective treatments for allergies will likely become even more important. One option for allergy suffers might be to start agitating for action to reduce CO_2 emissions — after all, the only thing you have to lose is your breath.

Source: Time Magazine, Bryan Walsh, September 15, 2008.
http://www.time.com/time/health/article/0,8599,1841125,00.html

Allergies and Climate Change

1. How many people currently have asthma?

2. How many people die from asthma each year?

3. What is one reason for the recent increase of people with asthma?

4. What are two causes mentioned in the article for the rise in ragweed pollen?

5. What is a second reason that asthma will be worse if average temperatures continue to increase?

6. What will warmer temperatures do to growing seasons? How will this affect allergies?

7. What solution is offered to combat this issue? How will this help?