Is the Pollen in the Air Related to Emergency Department Visits for Asthma?

Adapted from: Ambient pollen concentrations and emergency department visits for asthma and wheeze
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Introduction and Purpose

People with asthma often have a hard time breathing when there is pollen in the air. This is expected to worsen as **climate change** increases temperatures and CO_2, which causes many plants to have increased pollen production and longer pollen seasons.

This study examined if the amount and type of pollen in the air was related to emergency department visits for asthma and wheeze in the Atlanta area between 1993 and 2004.

How the Study Was Done (Methods)

The Atlanta Allergy and Asthma Clinic measured the amount and types of pollen (including pollen from trees, grasses, and ragweed) in the air five days per week between 1993 and 2004. Emergency department records were reviewed from 41 hospitals in 20 metro-Atlanta counties during the same time period.

The pollen data was compared with the number of emergency department visits for asthma and wheeze each day.

- The amount of daily air pollution (like smog) was also considered, since air pollution can also cause **asthma exacerbations.**

Results of Study

Tree pollen levels were highest in spring, grass pollen levels were highest in late spring-early summer, and ragweed pollen levels were highest in the fall.

More than 400,000 emergency department visits for asthma and wheeze were identified. These visits were made by patients with **asthma exacerbations** requiring emergency care.

Overall, there were **statistically significantly** more emergency department visits for asthma and wheeze on days with high amounts of oak tree and grass pollen; this was seen for both children and adults.

Limitations (Why we can't draw stronger conclusions)

Pollen was measured from one monitor in Atlanta, GA. Pollen measurements from this location may not be representative of all Atlanta areas since the number of plants that create pollen vary from place to place.

The impact of ragweed pollen on emergency department visits for asthma and wheeze was difficult to determine because the ragweed pollen season occurs in the fall along with other environmental conditions that cause **asthma exacerbations** (such as the common cold).

Key Words

Climate change: the change in weather patterns on earth.

Asthma exacerbations: shortness of breath, coughing, wheezing, chest tightness or any combination of these.

Statistically significantly: a statistical term that means there is enough evidence that the results obtained were not only due to chance.

Tips

To keep yourself or those you love breathing well **on high pollen days**:

- Check pollen levels here: http://www.atlantaallergy.com/pollen_counts
- Limit outdoor activities during times of high pollen (early morning, dry, or windy days).
- Keep windows closed during pollen seasons and use air conditioning if possible.
- Minimize walks in wooded areas or gardens. Wear a mask (such as painter's mask) when mowing the lawn if you are allergic to grass pollen. Avoid mowing and being around freshly cut grass if possible.
- Take a shower and change your clothes after being outdoors.
- Avoid hanging clothes or linens out to dry, so they don't collect pollen.
- Note these tips only apply when pollen is high – at other times, enjoy the outdoors!

What does this mean?

While it is hard to draw strong conclusions from one study, this study suggests that people with asthma living in the southeastern United States are likely to experience **asthma exacerbation** during oak tree and grass pollen seasons. **Asthma exacerbations** may become more frequent among asthma sufferers in the years to come because **climate change** is expected to increase the amount of these pollens in the air.

Read the full article here: https://www.ncbi.nlm.nih.gov/pubmed/22840851

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