

# Climate Changes Allergies and Asthma



The burning of fossil fuels causes the release of carbon dioxide, which builds up in the atmosphere and causes Earth's temperature to rise—this is climate change. Upstream burning of fossil fuels produces heat-trapping toxins that are released into the air, harming our health downstream. The Earth's average temperature has increased by nearly 1.5°F in the last century, with recent years being the warmest on record. However, climate change refers to the lasting disruption of our weather patterns, not just temperature increases. Some of these weather-related changes include increased floods and droughts, wildfires, intense storms, heat waves, and rising sea levels. These conditions have far-reaching environmental, social, agricultural, and economic effects and are ultimately harmful to our health and well-being. Two health conditions that are particularly affected by climate change are allergies and asthma.

## FAST FACTS

- Allergy season has become **longer and more intense**
- Allergies cause **3.8 million missed work and school days each year.**
- Asthma is responsible for nearly **2 million emergency department visits each year.**
- Asthma costs **\$56 billion per year (both direct and indirect costs).**
- In the United States **17.7 million adults (7% of adults) and 6.3 million children (9% of children) have asthma.**
- About **30% of adults and 40% of children suffer from nasal allergies.**

## BACKGROUND ON ALLERGIES AND ASTHMA?

### ALLERGIES:

- Allergies are a common chronic condition that happen when the immune system is introduced to an unknown irritant as foreign and overreacts to it by producing antibodies—even if it is not harmful. Seasonal allergies can be quite uncomfortable. Symptoms include skin and eye irritation, sneezing, nasal congestion, difficulty breathing, and wheezing.

### ASTHMA:

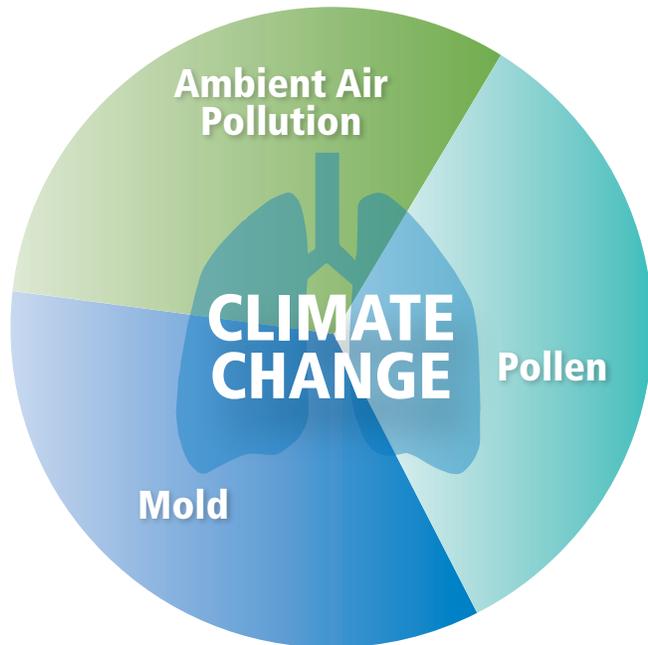
- Asthma is a chronic lung disease that causes inflammation and closing/tightening of the airways. It leads to coughing and trouble breathing as airflow to the lungs is reduced. While asthma affects all population groups, some groups are at higher risk. African Americans are three times more likely than Caucasians to be hospitalized and to die of asthma. Puerto Ricans have the highest rates of asthma attacks and related deaths.

### RELATIONSHIP BETWEEN ALLERGIES AND ASTHMA:

- While allergies and asthma are two separate health conditions, there is a relationship between them known as “allergy-induced asthma.” Allergic reactions can affect the lungs and airways, leading to asthma symptoms. Climate change makes our air less healthy to breathe, and poor air quality can affect allergies and asthma. Both conditions can decrease school attendance and workplace productivity.

# Climate Change Impacts on Asthma and Allergies

Three main exposures affect asthma and allergies: pollution, pollen, and mold.



## Ambient Air Pollution

Climate change increases the amount of airborne pollutants in the environment. Ambient pollutants include particulate matter, carbon monoxide, oxides of nitrogen, and volatile organic compounds. When sunlight combines with oxides of nitrogen and volatile organic compounds, increased ozone levels result. People with asthma are more susceptible to the effects of ozone and also have increased responses to allergens after ozone exposure. In addition to asthma, it is important to note that these exposures are associated with adverse cardiovascular effects.

## Pollen

Longer warm seasons result in longer pollen seasons and, therefore, longer allergy seasons. Higher temperatures, changes in precipitation, increased carbon dioxide levels, and changes in plant growth patterns all contribute to a longer and more intense allergy season. For example, higher carbon dioxide levels increase pollen levels and pollen potency. Longer and more intense pollen seasons have negative effects on the respiratory system, especially among those with allergies or asthma. This is particularly true of ragweed season.

## Mold

Mold growth is related to increased storms, precipitation, flooding, temperatures, and humidity. Mold is a hazard that can harm our health by decreasing the air quality in home, school, and work environments. Mold can cause respiratory irritation and is a common trigger for asthma and allergies. Reactions to mold exposures are an especially troublesome problem for people with asthma or weakened immune systems.

## WHAT CAN BE DONE?

### *Reduce exposures to air pollution and pollen:*

- Reduce exposures to allergens and air pollutants by staying indoors in air-conditioned environments during air quality alerts and high pollen days.
- If using an air conditioner, be sure to change the filter regularly.
- Wash exposed skin and clothes when returning from outdoors, as pollen can travel on skin and clothes.

### *Reduce mold exposures:*

- Prevent mold by avoiding damp indoor environments. After a flood or leak, thoroughly dry the affected area to reduce the potential for mold formation. Fans, air conditioners, and dehumidifiers can help the drying process. If mold is present in a work or school environment, contact the office or building manager.
- Visual inspections are the most reliable way to confirm the presence of mold. If you see or smell mold, use disinfectants to remove it. Dehumidifiers are useful to reduce the potential for mold. Contact a professional, your landlord, or NIOSH (the National Institute for Occupational Safety and Health) if extensive attention is needed.

### *Seek treatment:*

- Follow up with a physician if you have allergy or asthma symptoms. Ask a physician if allergy medication could help prevent future problems.
- If you have asthma, be sure to keep your inhaler nearby. (Children must follow school policies on self-administered inhaler use.) Learn more on how children can use asthma inhalers at [www.cdc.gov/asthma/inhaler\\_video/default.htm](http://www.cdc.gov/asthma/inhaler_video/default.htm).

### *Resources:*

- If at all possible, avoid outdoor activity on “unhealthy” air quality days. Stay updated on air quality alerts using the AirNow webpage at [www.airnow.gov](http://www.airnow.gov).
- Learn more about mold control at [www.cdc.gov/mold/control\\_mold.htm](http://www.cdc.gov/mold/control_mold.htm).
- For more information on climate solutions and what you can do to reduce your carbon footprint, visit [www.apha.org/climate](http://www.apha.org/climate) and [www.climateforhealth.org](http://www.climateforhealth.org).