



Climate Change & Children's Health

Seasonal Allergies

Climate change is making allergy season more dangerous for millions of children who suffer from seasonal allergies.

Science Summary

[Around 19% of children in the U.S.](#) (age 0-17 years) suffer from seasonal [allergic rhinitis](#) — or “hay fever” — with symptoms that include sneezing, coughing, itchy or watery eyes, and runny noses. Seasonal allergies are even more widespread among adolescents and teens (age 12-17), with 24% affected in the U.S. Aeroallergens are a common trigger for asthma, which affects [about 6.5% of children](#) (4.7 million) in the U.S. Seasonal allergies and asthma can also affect [quality of life](#), including school performance, mood, and sleep, especially in older children.

Heat-trapping carbon pollution (primarily from burning coal, oil, and natural gas) boosts aeroallergen production and extends the [growing season](#) — bringing an earlier, longer, and overall [worse allergy season](#) for millions of American children. [Higher levels of CO₂](#) in the air can increase pollen production in plants and support mold growth. As a result of CO₂ buildup and warming, allergy season arrives [sooner in the spring](#) and [lasts longer into the fall](#). The freeze-free season in the U.S. lengthened by more than two weeks (15 days) on average from 1970-2023.

Key Concepts

- [Nearly one-fifth of U.S. children](#) (around 14 million) suffer from seasonal allergies.
- Carbon dioxide (CO₂) from burning fossil fuels makes plants produce more pollen, boosting allergy risks for kids. Carbon pollution warms the planet and extends the growing season — meaning children will experience longer, more intense exposure to seasonal allergens like pollen.
- As the planet warms, children with allergies will experience worse health impacts, including an increase in emergency room visits for asthma attacks from pollen exposure.
- Parents and caregivers can protect children's health, now and in the future, by minimizing the harmful effects of seasonal allergies in a changing climate.

Key Terms

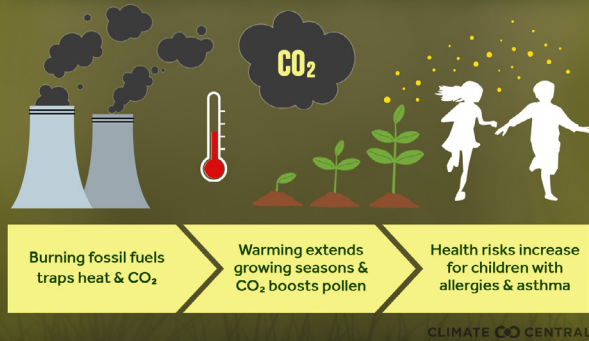
- **Aeroallergens** – airborne particles that cause allergic reactions, including pollen and mold spores.
- **Allergic asthma** – asthma triggered by an allergic reaction, often to aeroallergens.
- **Allergic rhinitis** – also called “hay fever,” allergic reactions with symptoms including nasal congestion, irritated eyes, and sneezing.

Children & Climate Change

Children are especially sensitive to climate change impacts, in part because they are still growing and developing and they spend more time outdoors. The effects of climate change experienced in childhood can have lifelong consequences on physical and mental health.

Children also have less control over their surrounding environments and less understanding of health risks. They rely on their adult caregivers — from parents and older family members, to coaches and teachers — to help protect their health at home, in school, and when recreating outdoors.

CLIMATE CHANGE WORSENS SEASONAL ALLERGIES FOR CHILDREN



Carbon pollution warms the planet and extends the growing season, and more CO₂ in the air boosts pollen production. Longer, worse allergy seasons put more kids at risk from symptoms of allergies and asthma.

Who's Most at Risk?

Symptoms of seasonal allergies and allergic asthma can be more than just inconvenient. [Research](#) estimates that 2 degrees Celsius (3.6 degrees Fahrenheit) of warming could result in a 17% annual increase in asthma-related emergency room visits among children from oak, birch, and grass pollen exposure, relative to baseline conditions (1986–2005). Parts of the Northeast and Ohio Valley (notably Indiana, Kentucky, Ohio, Vermont, and West Virginia) will likely see the highest rates of affected children (per 100,000 children). The study also suggests that oak pollen exposure in particular could disproportionately affect children of color, limited-English-speaking children, and children without health insurance.

Protecting Children's Health

Respond to symptoms, not the season. Understand that children with allergies may experience symptoms earlier or later than usual as growing seasons expand and shift. Recognize symptoms and seek guidance from doctors about medication and other interventions.

Minimize exposure. Check local air quality reports and allergen forecasts before heading outside. When pollen concentrations are high, consider limiting time outdoors for children with allergies or asthma.

Make the indoors safer and more comfortable. Close windows and doors to minimize aeroallergens inside. Use high-efficiency particulate air (HEPA) filters in living spaces and bedrooms to clean the air. [Do-it-yourself air filters](#) can be inexpensive and relatively easy to build. During hot weather, when exterior ventilation may be key to keeping cool, filters can be especially valuable for breathing easier.

Commit to rapid, sustained cuts to carbon pollution from burning fossil fuels — now. With continued warming, [future generations](#) are likely to face accelerating change and intensifying risks. Because higher levels of CO₂ increase pollen production, reducing carbon pollution will bring more and sooner benefits to allergy sufferers of all ages. Ultimately, cutting carbon pollution is the most meaningful action to slow the rate of warming and set younger generations on a different path, toward a safer future.

Additional Resources

- Climate Central's report, [Seasonal allergies: pollen and mold](#)
- [Warming Climate, More Pollen, Worse Allergies](#)
- Environmental Protection Agency's report, [Climate Change and Children's Health and Well-Being in the United States](#)

Endnotes & Acknowledgements

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Climate Central is an independent group of scientists and communicators who research and report the facts about climate change science, impacts, and solutions and how they affect people's lives. We are a policy-neutral 501(c)(3) nonprofit. For more information, visit climatecentral.org

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