

## Address causes of climate change to help alleviate effects on children: AAP

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An 8-year-old girl with severe allergic rhinitis is admitted for an asthma attack in May. A 17-year-old football player practicing on a 95-degree August afternoon is treated in the emergency department for heat exhaustion. A 6-year-old has aggressive behavior in a new school and city after her home and community were destroyed by a hurricane. A 9-year-old boy with a swollen knee is diagnosed with Lyme disease in Maine.

These children's conditions seemingly are unrelated. Yet they share an underlying association with the rising public health threat presented by climate change.



Image title

The AAP Council on Environmental Health has released a policy statement and technical report on *Global Climate Change and Children's Health* (See resources.). These documents, updated from 2007, describe the current understanding of climate change and how changing conditions affect the health of U.S. children. Available online, they appear in the November issue of *Pediatrics*.

It is clear from a range of indicators that our climate is changing. The planet is, unequivocally, warming. This warming is associated with a worldwide shrinkage of glaciers and decreased snow cover, sea level rise, more frequent and prolonged heat waves, increased heavy precipitation events, and more frequent and severe wildfires. There is wide consensus among scientific organizations and 97% of climate scientists that recent changes in our climate can only be explained by increases in the concentration of heat-trapping gases in our atmosphere over the past century, and not by the natural drivers that altered earth's climate in the past.

### Diverse health effects

Climate change poses significant threats to human health to which children are uniquely susceptible. The World Health Organization estimates that more than 88% of the existing burden of disease attributable to

climate change occurs in children younger than 5 years. The diverse health effects of climate change can be classified as primary, secondary and tertiary.

Primary effects are those most directly attributable to climate. Extreme weather events are increasing in frequency and severity. Children's unique needs place them at risk of injury, death, separation from caregivers and a high risk of mental health consequences following these events. Worsening heat waves threaten children, particularly high school athletes and young infants, with increasing heat illness.

Secondary effects are those that affect children indirectly through shifts in natural systems. Increased plant pollen concentrations and allergy season duration, wildfire smoke and temperature-associated increases in ground-level ozone all can reduce air quality and precipitate asthma attacks and/or allergic disease.

The hosts, vectors and organisms that cause some pediatric infections are influenced by climate conditions. Climate warming has been linked to the northern range expansion of Lyme disease and is projected to increase the burden of child diarrheal illness in vulnerable regions. Child nutrition is threatened by altered agricultural conditions affecting food availability and cost, as well as rising atmospheric carbon dioxide concentrations, which may alter the protein, iron and zinc content of some major crops.

Tertiary effects are those that could result from broad societal impacts of unchecked climate change. Sea level rise, decreased biologic diversity, water scarcity and famine, mass migrations, and decreased global stability threaten the social foundations of children's mental and physical health and well-being. Communities already at socioeconomic disadvantage are most vulnerable to these effects.

### **What can be done?**

Because of past and present emissions, some continued changes to our climate are inevitable. However, the most severe effects still may be prevented if greenhouse gas emissions are significantly reduced in the upcoming decades.

Addressing the causes of climate change also presents an opportunity for pediatricians to improve child health through immediate, associated health benefits. For example, encouraging active modes of transport like walking and biking helps reduce carbon emissions and promotes child health. What is good for the climate also is good for children.

Informed by an understanding of the health threats posed to children by climate change, the following recommendations can allow pediatricians to play a valuable role in the societal response to this challenge:

- Work to promote medical educational opportunities regarding the effects of climate change on the environment and child health.
- Seek ways to reduce the carbon and environmental footprint of health facilities, including hospitals, medical offices and transport services.
- Discuss climate change with families, using existing anticipatory guidance as a framework.
- Educate children, families and communities on emergency and disaster readiness using the AAP Children and Disasters site (<http://bit.ly/1JmG9hE>) as a guide.
- Advocate for policies that reduce greenhouse gas emissions and that improve preparedness for anticipated climate-associated effects. Climate policy is health policy.

The policy also offers recommendations to government, including the need to fund research on climate-associated health effects; to promote energy efficiency and renewable energy production while decreasing incentives for continued production and consumption of carbon-intensive fuels; and to support education of the threats from climate change for public and children's health.

Climate change is not just a daunting problem. It is a golden opportunity for pediatricians to protect the health and welfare of all current and future children.

*Dr. Ahdoot is a lead author of the policy statement and technical report. She is a member of the AAP Council on Environmental Health Executive Committee.*

**Resources**

- ["Global Climate Change and Children's Health" policy](#)
- ["Global Climate Change and Children's Health" technical report](#)

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