

# Climate Changes Children's Health



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. Children's health, wellness, and safety are affected by climate change.

## FAST FACTS

- Around **88%** of the global disease burden of climate change falls on children under 5 years.
- Ozone is a known trigger for asthma attacks. Over **2 million children** who suffer from asthma live in areas of the U.S. with unhealthy ozone levels by the American Lung Association.
- Rates of heat-related death for infants under 1 year are **4 times** as high as for persons 1-44 years old.
- After Superstorm Sandy, children living in homes with damage were over **5 times** as likely to show signs of depression. They were over **8 times** as likely to have difficulty sleeping and **5 times** as likely to show signs of anxiety.

## BACKGROUND ON CHILDREN'S HEALTH

Children are especially vulnerable to climate change because of their physical and cognitive immaturity:

- Compared to adults, children breathe more air and drink more fluid for their body weight. Also, because they are shorter and spend more time on the ground, they are closer to ground-level pollutants. These factors cause children to have higher exposure levels than adults.
- Children engage in different behaviors from adults, including what they eat and activities such as crawling on the ground and hand-to-mouth activities. These behaviors make them more vulnerable to air, water, and soil exposures.
- Children have immature immune and organ systems. Thus, they are more sensitive to exposures that can cause permanent disabilities.
- Children are dependent on caregivers and may not be able to respond appropriately to threats. As a result, they are at risk of injury or even death in extreme weather emergencies.
- Children and adolescents engage in more outdoor activities than adults, leaving them more exposed to heat and outdoor air pollutants like ozone.

## CASE STUDY: HEAT STROKE HITS YOUTH

It was early August, and Logan attended his junior high school basketball practice. The intensity of the drills was matched only by the temperature of over 100°F inside the unairconditioned gym. As practice progressed, Logan became dizzy and eventually collapsed. He suffered heat stroke and developed life-threatening complications. After a week in the hospital, Logan returned home. Unfortunately, heat stroke is becoming more common among young athletes. Heat illness is now the top cause of death and disability in high school athletes.

(Logan's story: <http://ksi.uconn.edu/personal-stories/logan-johnsons-story/>)

# Climate Change Impacts on Children's Health

**EXTREME WEATHER:** Climate change increases the amount and severity of storms. Extreme weather can impact sanitation and sewer systems. This increases the risk of water-related and gastrointestinal illnesses. Children are especially susceptible to such conditions due to their developing immune systems. Injury and mental health impacts are also common among children exposed to extreme weather.

**EXTREME HEAT:** Climate change is increasing the frequency and intensity of extreme heat events. Children are less able than adults to regulate their body temperature. Thus, they are more vulnerable to changes in temperature. Compared to adults, extreme temperatures have led to more heat-related illnesses and deaths among children, especially infants.

**VECTOR-BORNE DISEASE:** Insects and rodents that carry viruses respond quickly to changes in temperature and moisture, which can increase their growth and duration. Children are at risk for vector-borne illnesses due to their increased outdoor activity. They are also susceptible due to their developing immune systems. Lyme disease, hantavirus, dengue fever, and Zika virus are among the climate-related vector-borne diseases that pose a heavy health burden on children.

**POOR AIR QUALITY:** Climate change extends the warm season and lengthens pollen season. It also increases the amount of airborne pollutants in the environment. Pollutants and pollen can have chronic impacts on children's respiratory health, triggering allergies and asthma.

**FOOD INSECURITY:** Given changes in the weather due to climate change, crops will be affected by droughts and flooding. Climate change also alters the nutrient quality of food. Together, these impacts could reduce access to food and nutrients. Poor nutrition can result in developmental delays and adverse health outcomes for infants and children.

Stunted Growth  
Malnutrition  
Dehydration  
Lyme Disease  
Hantavirus  
Zika Virus  
Gastrointestinal Disorders  
Starvation  
Asthma  
Allergies

## WHAT CAN BE DONE?

### *Reduce the risk of heat stroke:*

- To prevent heat stress, heat exhaustion, and heat stroke, prevent children from engaging in strenuous outdoor activities during high temperature days or during the hottest times of the day. If children must be outdoors during these times, be sure they wear lightweight clothing, take breaks often, and stay hydrated. Seek medical help immediately if you think someone is having heat stroke.
- Seek out cooling centers if you do not have air conditioning, your air conditioner does not work properly, or you are outside on high heat days. Staying in an air-conditioned environment is the best way to prevent heat-related illness.
- Never leave a child alone in a vehicle, especially on a hot day.

### *Protect against insects and rodents that carry disease:*

- To prevent vector-borne disease, use insect repellent or clothing that covers your extremities. Thoroughly inspect children, pets, and gear for ticks if they have been in high grass, wooded, or leafy areas. Remove ticks promptly if any are found.
- You can reduce your risk of mosquito exposure by making sure there is no standing water in your yard.

### *Prepare for emergencies:*

- Develop an emergency plan and kit for situations where children might be affected by extreme weather. Practice emergency response plans with children.
- Be aware of children's trauma reactions to natural disasters. Children may develop nightmares, bed wetting, or fear of sirens, storms, or loud noises after the incident. Follow up with a professional if the reaction is prolonged.

### *Resources:*

- Stay updated on air quality alerts using the AirNow webpage at <https://www.airnow.gov>. If at all possible, children should avoid outdoor activity on days that are labeled "unhealthy for sensitive groups."
- 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).