

Children's Environmental Health Center of the Hudson Valley

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CHILDREN'S ENVIRONMENTAL HEALTH CENTER OF THE HUDSON VALLEY

PROTECTING CHILDREN AGAINST ENVIRONMENTAL THREATS

www.ChildrensEnvironment.org

February 3, 2014 – CHILDREN'S HEALTH ADVISORY

Climate Change and Children's Health

February 3, 2014: Climate change describes any significant changes in climate measures that last for extended periods of time and is a serious issue that has been brought to the attention of political and health advisors in recent years. Climate change is already affecting glacier melting, sea level rise, the range and distribution of plants and animals, tree blooming times, the length of growing seasons, freezing and thawing of rivers and lakes, and the extent of the permafrost. Human activities are thought to be likely the main cause. Looking at several climate-related phenomena – extreme weather, air pollution, and infectious diseases provides a starting point for exploring how the changing climate may affect health. Children are more particularly vulnerable and are likely to experience the adverse effects of climate change more than their adult counterpart.

Why are children more vulnerable to environmental changes?

- Children are still developing, therefore lifelong structural or functional changes in their bodies are more likely than in adults.
- Their immune systems, are less able to fight and control the effects of biological and chemical assault on their bodies.
- Their risks from cumulative exposures are greater because they have many more years ahead of them. Diseases and conditions that are slow to develop are more likely to result from childhood exposures.
- Children are often more sensitive to food issues including availability, costs, nutritional quality and increased chemical exposures.
- They have faster breathing rate compared to adults, they spend more time on the ground, thereby increasing their exposures to elements in the air and on yards and playgrounds.
- Children often spend more time outdoors making them more exposed to insect-borne diseases and outdoor pollutants.

- They are more sensitive to chemicals such as pesticides, water pollutants, air pollutants, medications and food preservatives.
- Because they are dependent on adults, children are less likely to take corrective action when faced by stressors such as fumes, insects, or contaminated products.
- Children, especially infants cannot regulate body temperatures as well as adults. They respond to changes in temperature more slowly, making them more likely to suffer heat exhaustion and other ill effects during heat waves, as well as cold weather-related injuries such as hypothermia and frost bite.

How do changes in the climate affect health, particularly children?

Extreme weather, air pollution, infectious diseases, and heat can directly affect children on account of climate changes. As children's bodies are still developing, they react differently to environmental changes. Children eat, drink, and breathe more than adults do and are exposed to several environmental contaminants by playing outdoors. The Environmental Protection Agency (EPA) notes that there has been an increase in wildfires in North America, and these fires emit fine particulate matter that can cause or exacerbate respiratory illnesses in children, such as asthma and bronchitis. Additionally, there has been a decline in air quality in cities and more children are being exposed to ozone. Ozone exposure can cause children to have shortness of breath, chest pain when inhaling deeply, wheezing, coughing, temporary decreases in lung function, and infections in the lower respiratory tract. Water, food, and vector-borne infectious diseases can also arise on account of climate change. Water and food can become contaminated due to heavy rains, floods, and hurricanes. As such, infectious diarrhea is of serious concern in children who are exposed to contaminated water. Some vector-borne infectious diseases, like Lyme disease, are seasonal, meaning they arise and have a higher prevalence during certain temperatures and conditions. During the summer, more children play on the ground outside and increase their chances of being bitten by a tick. Malaria accounts for a great number of deaths globally, and as warmer temperatures occur in the United States, more children can become infected because they lack immunity, and they play outside where mosquitoes thrive. More recently, Dengue and other tropical infectious diseases are now reported in the US, which wasn't the case just a few years back. The Centers for Disease Control and Prevention (CDC) mention that there will be an increase in frequent and severe heat waves. Children are at an increased risk for heat-related morbidity and mortality because they are more vulnerable, and furthermore, infants have a higher risk of death. Pollen also increases in extreme heat conditions, which can trigger asthma and allergies. Climate change is also being blamed for the present severe winter condition in some parts of the US including areas that didn't use to experience, and are not ready to face the challenges of severe winter. This is indirectly leading to economic decline, displacement of people and increased conflict. Through increases in severe weather events and the resulting destruction and disruption of services, climate change may also contribute to increased mental health burdens.

What can we do to promote health and help prevent effects of climate change?

1. **Protect children:** From extreme temperature - from too much sun by having them wear hats, sunglasses, protective clothing, sunscreen, and from severe cold weather by dressing them appropriately with layers, and limiting their time outside. Help children breathe easier by not smoking and keeping your house clean to limit asthma and allergy attacks. Find information on your local ozone alerts, water pollution, and food contaminations, severe weather and wind chill alerts.
2. **Eat healthy:** Choose organically-grown food when possible. Wash children's hands before they eat and be sure to wash bottles, pacifiers, and toys, as well as fruits and vegetables.
3. **Save energy:** Eliminate greenhouse gases by using ENERGY STAR products, such as light bulbs, electronics, and heating and cooling equipment. Reduce fuel use wherever you can by driving less, using public transit, and turning off your engine if you'll be idling for more than a few seconds.
4. **Conserve water:** Especially from water heaters that produced greenhouse gases. Take shorter showers, use low-flow shower heads. Efficient washing machines and smart lawn watering can save both gallons and dollars.
5. **Be involved in your community:** Examples like planting new trees in your community remains one of the cheapest, most effective means of drawing excess carbon dioxide from the atmosphere. Implement as many of the above ideas in your school and office as you can. Ask your elected officials what actions they are taking regarding climate change and health.

References/Additional Resources:**1. World Health Organization**

- [Protecting Health from Climate Change: Connecting Science, Policy and People](#)
- [Climate Change and Human Health](#)
- [Climate and Health Fact Sheet](#)
- [The Impact of Climate Change on Human Health: Statement by WHO Director-General Dr. Margaret Chan](#)
- [Protecting Health from Climate Change: Global Research Priorities](#)

2. American Academy of Pediatrics

- Katherine M. Shea, MD, MPH, and the Committee on Environmental Health. [Global Climate Change and Children's Health, 2007.](#)

3. US Centers for Disease Control and Prevention

- [Climate Change and Public Health – Health Effects](#)

4. National Institute of Environmental Health Sciences

- [A Human Health Perspective on Climate Change](#)

5. US Environmental Protection Agency

- [Climate Change – Health and Environmental Effects](#)
- [Climate Change and the Health of Children](#)
- [State and Local Climate and Energy Program](#)
- [Change the World, Take the Energy Star Pledge](#)
- [Tips to Save Energy and Fight Climate Change this Summer](#)
- [What You Can Do](#)
- [A Student's Guide to Global Climate Change](#)