



Healthy Environments for Children Alliance

A world-wide alliance to reduce environmental risks to children's health that arise from the settings where they live, learn, play, and sometimes work by providing knowledge, increasing political will, mobilizing resources, and catalyzing intense and urgent action.

Issue Brief Series: Air Pollution

Because of the strong link between air pollution and respiratory illnesses and ill-health effects, air quality is an important priority for the protection of children's health.

Outdoor Air Pollution

Vehicle and industrial emissions are major contributors to air pollution in urban settings. In some cities, air pollution can reach such high levels that people may be advised to stay indoors and schools might close. Rural areas are affected by outdoor air pollution primarily from burning agricultural land and forest fires. In addition, with growing desertification, dust storms may become major contributors to contaminants in the air.

Lead is a noteworthy air contaminant in countries where it is added to gasoline. It has been shown that when lead is removed from gasoline, lead levels in children's blood decrease.

Indoor Air Pollution

Using firewood and other low quality fuels indoors for cooking and heating creates a toxic mix of pollutants for children to breathe. Acute respiratory infections cause more than two million deaths in children every year, mainly in developing countries, with indoor smoke from cooking and heating a significant contributor.

While indoor air represents a substantial threat to children's health, more than two billion people in the world rely on biomass fuel and coal to meet their household energy needs. Those who cook indoors over open fires are typically women, accompanied by their young children, who are placed at special risk. It is estimated that one million child deaths from acute respiratory infections are related to indoor solid fuel use.

Environmental tobacco smoke (ETS) is also extremely dangerous to children's health. An estimated 700 million children worldwide breathe air polluted by tobacco smoke. Exposure to environmental tobacco smoke is associated with a range of harmful effects in children, such as respiratory tract infections, coughing and wheezing, worsening of asthma, and middle ear disease. Other suspected links include cardiovascular disease later in life, and possibly neuro-behavioral harm. Exposure of pregnant women to environmental tobacco smoke is associated with low birth weight. ETS is associated also with Sudden Infant Death Syndrome.



... a Global Concern

- In Asia, more than 75% of the population in India and China cooks with solid fuels.
- 50-75% of the population cooks with solid fuels in Africa.
- In Latin America and the Caribbean, acute respiratory infections were the reason for 29% of hospitalizations and 49% of doctor visits for children under five in a 2001 study conducted by the Pan American Health Organization.
- In the Western Pacific, acute respiratory infections are the greatest single cause of child death, leading to 14% of deaths of children under five years old.
- In Europe, studies have found that more than 10% of children ages 13-14 suffer from asthma, with a significant burden of disease attributable to outdoor air pollution.

Acting to safeguard children's environments can save millions of lives, reduce disease and provide a safer, healthier world for our children's future.

See the *Healthy Environments for Children Alliance Framework for Action*

Children's Vulnerability to Air Pollution

Behavioral: Younger children are often unaware of health risks around them and are typically unable to make choices to reduce their risk. Hand to mouth behavior, typical of very young children, exposes them to lead dust and other harmful substances deposited from the air. Children of smokers are more likely to become smokers themselves.

Physiological: Children breathe more air than adults do in proportion to their body weight. Children also react to certain toxicants more severely than adults because of their narrower air passages and their smaller size. Given their small stature, children's breathing zones are closer to the ground which can expose children to high concentrations of air pollutants.

Developmental: Children's lungs are growing rapidly during the first year of life and they continue to develop air sacs through their first four years. Exposure to air pollutants during these formative years could hinder normal lung development.

Actions at Every Level Make a Difference

Air pollution reaches around the globe yet local actions can make a difference. National and local governments, community organizations, educators, media, health professionals, parents, family members and children themselves need to work together to improve the quality of air both indoors and outside. While international organizations, such as WHO, UNEP, and the World Bank can facilitate country actions to strengthen air quality management, national governments have the responsibility to set needed policies and laws and take responsibility to implement them. Air pollution control regulations should be enforced in cities, especially phasing out leaded gasoline, controlling pollution from industrial processes, and promoting the use of cleaner or renewable energy. National governments can help coordinate efforts across sectors and sign regional and international commitments, such as the Framework Convention on Tobacco Control.

Settings-based Interventions

Keep children away from indoor fires and out of rooms or areas in shelters that are contaminated with smoke. Explore ways to use improved cooking stoves and better ventilate homes, for example, through a chimney. If possible use more efficient and less polluting fuels. Avoid child exposure to tobacco smoke. Family members who smoke should do so outside or, preferably, give up smoking. .

Teach children about indoor and outdoor air quality. Respect public air quality announcements, keeping children indoors for recess and breaks if the air quality is poor. Keep children away from cooking and heating stoves. Teachers should never smoke on school premises.

Seek quality air for children. Request that there be no smoking in public places, especially schools, hospitals and other places where children frequent. Encourage use of mass transport systems in place of private vehicles. Promote purchase of unleaded gasoline and good vehicle maintenance. Local governments can help ensure that laws and regulations are implemented and non-governmental organizations or community leaders can help raise awareness, encourage community action and advocate for laws to protect children's health from pollution.

At Home

At School

In the Community

www.who.int/heca/