

## Creating a Healthier Future for Children: Precaution Is Prevention

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With chronic childhood diseases and an array of learning and developmental disabilities on the rise, a burgeoning body of science is illuminating links between environmental exposures and children's health. Health funders interested in childhood development and lifelong health are increasingly moving upstream to support precautionary action as a critical prevention strategy.

All of us live in the same chemical neighborhood, being regularly exposed to a wide variety of household and environmental chemicals. They are in the food we eat, the water we drink, the air we breathe, and the products we use. Policy gaps continue to allow most of the 80,000 chemicals on the market today to be used without being tested for their effects on human health. Surprisingly, among the chemicals that have been tested, few have been tested for their effects on children. At the same time, environmental health research is steadily lowering the thresholds of what may be considered safe exposures for the developing fetus and young child.

Children are particularly vulnerable to environmental factors in utero, during infancy, and in childhood. Pound for pound, children breathe more air, drink more water, and eat more food than adults. Children spend more time close to the ground, readily breathing in toxic chemicals trapped in dust, soil, lawns, and carpets. Children spend more time outdoors than do most adults, and are more likely to suffer adverse effects from air pollution. Their frequent hand-to-mouth activity and higher intake per body pound of food and liquids increase their exposure to toxicants, such as lead and pesticides. Child development is a delicate and precise process, with windows of acute vulnerability to environmental toxicants. In these moments, key developmental steps may be altered by a one-time environmental exposure, even at a very small dose. Finally, with a lifetime of exposures ahead of them, children have more time to develop diseases with long latency periods that have environmental triggers, such as cancers and Parkinson's disease.

Children living in low-income neighborhoods and communities of color are disproportionately exposed to health-harming toxicants – an important root cause of health disparities. Between 2.75 million and 3.85 million children (one in four) live within one mile of a National Priorities List hazardous waste site; people of color are 47 percent more likely than whites to live near these

hazardous facilities. Children of color are three times more likely than white children to live in neighborhoods with high-density traffic, often breathing in toxic diesel emissions at home and at school. In 2003, the Centers for Disease Control and Prevention reported that African Americans face higher rates of exposure to environmental chemicals than any other ethnic group, and Mexican Americans are the most highly exposed population to pesticides. The effects of these exposures are not limited to health. Recent research found that such exposures are also associated with lower academic performance (even after controlling for teacher quality, English learners, and income markers).

### HEALTH AND ECONOMIC COSTS

Chronic childhood illness is rising dramatically. Since 1980, the percentage of U.S. children with asthma has more than doubled to 8.7 percent in 2001 – 6.3 million children. Between 1975 and 1998, the incidence of childhood cancer increased 26 percent and incidence of testicular cancer in young men by 60 percent. Cancer has become the most common cause of disease-related mortality for children ages 1-19. Autism rates doubled from 1968 to 1997. Today, approximately 1 million preschoolers carry enough lead in their blood to cause brain damage, learning disabilities, reduced intelligence, and attention deficiencies. And nearly 12 million U.S. children under the age of 18 suffer from one or more learning, developmental, or behavioral disabilities.

The economic costs of these health effects are high. A 2002 study estimated that the cost of environmentally attributable pediatric disease in the United States is \$54.9 billion, or 2.8 percent of U.S. health care costs. This estimate is likely low, as it only considers lead poisoning, asthma, cancer, and neurobehavioral disorders. It also ignores conditions that are not immediately apparent, as well as costs associated with pain and suffering. The costs appear even greater compared to the paltry resources directed to children's environmental health research, tracking, and prevention.

### THE PRECAUTIONARY PRINCIPLE

The good news is that as we gain more information regarding the health effects of environmental toxicants, new strategies

and actions emerge to protect children's health. Given the downward trends in what safe exposure levels may be, many governments, nonprofits, professional associations, and community groups are framing prevention strategies around the precautionary principle: when an activity raises threats of harm to human health or the environment, precautionary measures should be taken, even if some cause and effect relationships are not fully established scientifically. In practice, this approach usually combines measures to reduce or eliminate highly toxic, persistent chemicals with proactive moves toward safer alternatives.

Precautionary approaches are accelerating internationally. In 2004, the Stockholm Convention on Persistent Organic Pollutants became active. This international treaty is designed to end production and use of some of the world's most poisonous chemicals. Eighty leading scientists and physicians in 2004 also released a Paris Declaration, citing the increase of nonsmoking-related cancers, childhood cancers, and sterility rates, and calling for precautionary action on chemicals policy.

Communities across the United States are developing local and state policies to protect children's health. Community-

based research efforts are addressing local priorities, as scientists work with community leaders to reduce children's exposures and prevent future threats to children's health. New science is being put to use in public education about toxic substances in toys and play structures, mercury and other contaminants in fish, arsenic in water, dioxin in breast milk, and pesticides in schools and the farming process. Collaborations across sectors are inspiring new protective policies and changes in chemicals management.

An exciting area of children's environmental health philanthropy is emerging, with great opportunities for health funders to make seminal contributions. The Bauman Foundation, The California Wellness Foundation, the Jenifer Altman Foundation, the Marisla Foundation, the Mitchell Kapor Foundation, New York Community Trust, and The San Francisco Foundation are among the funders that have begun to develop this field of philanthropy and identify broader opportunities for health funders. The Health and Environmental Funders Network (HEFN, [www.hefn.org](http://www.hefn.org)) is a primarily virtual network of funders interested in environment-health links. HEFN works closely with GIH to support grantmaker education and collaboration on children's environmental health issues.

## PRECAUTIONARY EFFORTS

Following is a small sample of other precautionary efforts under way to protect children's health, all of which are accessible on the Web. Daily news and research on children's environmental health may be found at [www.environmentalhealthnews.org](http://www.environmentalhealthnews.org).

**Biomonitoring and Health Tracking Efforts** – There is a critical need to build the base of information about children's exposures and related health outcomes. Key efforts include local biomonitoring efforts; state and national health tracking programs; and plans for a national children's study, a new longitudinal study of childhood health problems and birth defects. **Resources:** Children's Environmental Health Network, Physicians for Social Responsibility, Trust for America's Health

**Building Partnerships** – Coalitions of health professionals, researchers, health-affected and patient groups, and advocacy organizations are increasing awareness of environmental toxicants and disease and urging a precautionary approach from the corporate board room to the local regulator's desk. **Resources:** Collaborative on Health and the Environment; Coming Clean; Global Alliance for Incinerator Alternatives; International Network for Children's Health, Environment and Safety; International POPs Elimination Network; Partnership for Children's Health; Pesticide Action Network

**Community-based Efforts** – Many organizations are working to support local struggles to protect children's health while building community capacity, enhancing leadership development, and creating opportunities for youth action.

**Resources:** Alternatives for Community and Environment, Chemical Weapons Working Group, Communities for a Better Environment, Community Toolbox for Children's Environmental Health, Environmental Health Coalition, Southwest Network for Environmental and Economic Justice, Indigenous Environmental Network, WE ACT

**Health Professional Training and Education** – Training

and materials are needed to deepen health professionals' knowledge of the latest science on children's environmental health and its clinical applications.

**Resources:** American Nurses Association, American Pediatric Association, Clean Water Fund, Children's Environmental Health Network, Physicians for Social Responsibility

**Healthy Schools and Healthy Hospitals** – Homes, schools, day care institutions, and hospitals are critical settings for addressing children's health, especially by reducing chemical use and creating healthier environments for children.

**Resources:** Center for Environmental Health; Center for Health, Environment and Justice; Children's Health Environmental Coalition; Funders Forum on Environmental Education; Generation Green; Health Care Without Harm; Healthy Building Network; Healthy Schools Network

**Regional Children's Environmental Health Centers** – The National Institute of Environmental Health Sciences and the Environmental Protection Agency have supported the establishment of 12 national Children's Centers for Environmental Health, with an emphasis on community-based and community-driven research. The Association of Occupational and Environmental Clinics, in collaboration with the Agency for Toxic Substances and Disease Registry and the Environmental Protection Agency, established 13 pediatric units to provide education and consultation on children's environmental health for health professionals, public health professionals, and others. **Resources:** Children's Environmental Health and Disease Prevention Centers, CHAMACOS, Pediatric Environmental Health Specialty Units, WE ACT

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**VIEWS FROM THE FIELD** is offered by GIH as a forum for health grantmakers to share insights and experiences. If you are interested in participating, please contact Angela Saunders, GIH's communications manager, at 202.452.8331 or [asaunders@gih.org](mailto:asaunders@gih.org).