US EPA ARCHIVE DOCUMENT

Actionable Science for Communities

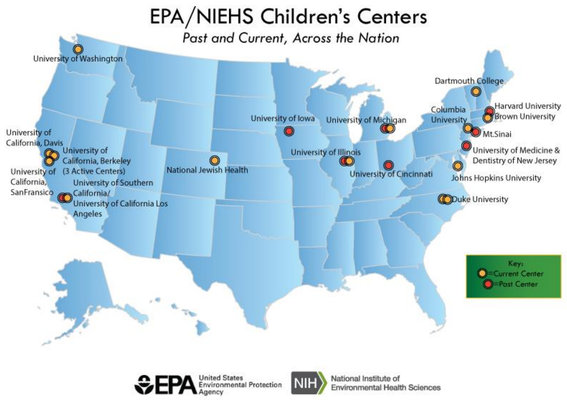
The EPA/NIEHS Children's Environmental Health and Disease Prevention Research Centers – SHC 2.63

Nica Louie, National Center for Environmental Research

United States Environmental Protection Agency

Purpose/Utility of Research

The mission of the jointly funded EPA/ NIEHS Children's Centers is to protect children from environmental threats and promote their health and well-being in the communities where they live, learn, and play. Since 1998, more than 20 Children's Centers and 40 awards have been made.



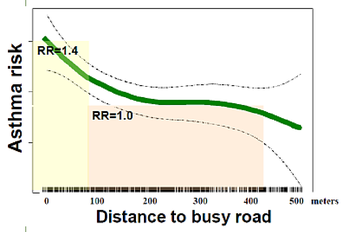
Connection to SHC Portfolio

The EPA/NIEHS Children's Centers research results in impactful research through outreach, communication and translation of research findings into sustainable strategies to reduce children's environmental exposures and decrease the incidence of environmentally-related childhood diseases.

This work supports the development of a systems level approach to understanding children's environmental exposures, health and environmental diseases.

Highlights - Asthma, allergy and children's health

- Traffic-related air pollution at schools and home may contribute to development of asthma in children. Residence within 75 meters (250 feet) of a major roadway associated with increased risk of asthma. *McConnell et al., 2006, 2010*
- Children exposed to higher levels of phthalates found in personal care and plastic products have elevated risk of asthma-related airway inflammation. *Just et al., 2012*



McConnell et al., 2006

Adverse health effects linked to flame retardant (PBDE) exposure

- Children with higher PBDE cord blood levels scored lower on mental and physical development tests at 12-48 and 72 months *Herbstman et al., 2010*
- Poorer attention, motor skills, and IQ scores in children *Eskenazi et al., 2012*

NY Times Magazine, 9/6/2012

Application & Translation

With more than 1,000 peer-reviewed publications, Children's Centers research cited as evidence in policy decisions to protect human health by limiting exposure to air pollution, pesticides and endocrine-disrupting chemicals.

Columbia Children's Center research findings and testimony on integrated pest management influenced the passing of:

- NYC Pesticide Reduction Law (Intro 329A), 2007
- Neighborhood Notification Law (Intro 328A), 2007
- NYC Health Code. Article 151, 2008

EPA proposal for strengthened worker protection standard for pesticides to protect agricultural workers and vulnerable groups including farmworker families cites Children's Centers research from UW and UC Berkeley/ Eskenazi.

Intended End Users

Research Community

- e.g., Dartmouth College Children's Center

Decision Makers

- Federal, State and local (e.g., FDA arsenic and rice studies)

General Public

ConsumerReports

npr

Lessons Learned

- Living near a freeway while pregnant and around the time of birth is associated with increased risk of autism in children. *Volk et al., 2011*
- Prenatal exposure to PAHs is associated with behavioral issues e.g., anxiety, depression, and attention problems. *Perera et al., 2012*
- PCB-95 exposure modulates calcium-dependent signaling pathway for growth of neuron dendrites in brain. *Wayman, 2012*
- Specific maternal antibodies that target fetal brain proteins or antigens linked to maternal autoantibody- related (MAR) autism. *Braunschweig et al, 2013*

US EPA ARCHIVE DOCUMENT