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## Children's Environmental Health International Initiatives

This is an international mailing list provided by [WHO](#) and [UNEP](#)  
dedicated to promoting healthy environments for children

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### Environmental Impact on Childhood Development

Two recent reports in Lancet (1, 2) deal with the extremely important topic of how inequities in early childhood influence the risk of poor cognitive and neurobehavioral development. The authors of both reports identify a variety of factors that increase risk, especially poverty. While we totally agree that poverty is the greatest risk factor for ill health, we also feel that the authors have underestimated the degree to which environmental exposures are the root cause of much of the risk to childhood development.

There is overwhelming evidence that the poor suffer a greater exposure to environmental chemicals. This is because they are more likely than more affluent persons to live in more polluted areas, eat more contaminated food and drink more contaminated water, breathe air that contains more pollutants and the parents (and sometimes the children) are more likely to work at more contaminated jobs.

Many chemicals result in a reduced IQ; frequently even when exposures occur at very low levels. These include lead, methyl mercury, arsenic, fluoride, polychlorinated biphenyls (PCBs), chlorinated and organophosphate pesticides, environmental tobacco smoke and even air pollution. Most, if not all of

### CHILDREN'S ENVIRONMENTAL HEALTH NEWS

#### Press Releases

#### [UNICEF study provides new insight into how poverty affects children](#)

A new UNICEF study analysing child poverty in East Asia and the Pacific emphasizes that poverty affects children in vastly different ways than adults. As a result, policy makers need to look beyond family income indicators to gain a more complete picture of poverty and the deprivations children face. UNICEF (23/11/11)

#### [Climate change set to exacerbate child vulnerability in South Africa](#)

'Exploring the Impact of Climate Change on Children in South Africa' was commissioned by UNICEF in partnership with the Department of Women, Children and People with Disabilities, and the Department of Environmental Affairs. It highlights the likely impact of climate change on children's health, education, nutrition, safety and access to adequate housing and sanitation in South Africa – both directly and indirectly. UNICEF (19/11/11)

the exposures cause a reduction in attention span, hyperactivity, an increase in impulsiveness and anti-social behavior. These are the characteristics of the syndrome of attention deficit hyperactivity disorder. Clearly it is difficult for a child to learn if they cannot pay attention.

No amount of psychosocial stimulation is going to overcome the effects of chemicals that produce irreversible reductions in cognitive function and ability to pay attention and appropriately deal with frustration. It should be a priority to reduce exposure of children, especially poor children, to environmental chemicals as a strategy for improving neurobehavioral outcomes.

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1. Walker SP, Wachs TD, Grantham-McGregor S, et al. Inequality in early childhood: risk and protective factors for early child development. *Lancet* 2011;378:1325-38.
2. Engle PI, Fernand LCC, Alderman H, et al. Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *Lancet* 2011;378:1339-53.

## **JOURNAL ARTICLES**

### **Air Pollution**

[Air Pollution and Anemia as Risk Factors for Pneumonia in Ecuadorian Children: A Retrospective Cohort Study](#)

Ambient air pollution and malnutrition, particularly anemia, are risk factors for pneumonia, a leading cause of death in children under five. The authors

[New Environmental Training Toolkit for Humanitarian Sector](#)

A new training toolkit, entitled Integrating the environment into humanitarian action and early recovery, addresses the different ways in which the environment can be taken into account in humanitarian action, not least how to help protect the natural resources crucial to recovery. UNEP (15/11/11)

[East Asia-Pacific children highly vulnerable to climate change impacts](#)

Millions of children across East Asia and the Pacific already suffer from a lack of access to clean water and proper sanitation, and are vulnerable to food shocks and risks of disease. Climate change is expected to worsen this situation. The leading killers of children worldwide are highly sensitive to climate change. UNICEF (14/11/11)

[2011 Human Development Report: Environmental trends threaten global progress for the poor](#)

The 2011 Report—Sustainability and Equity: A Better Future for All—argues that environmental sustainability can be most fairly and effectively achieved by addressing health, education, income, and gender disparities together with the need for global action on energy production and ecosystem protection. UNEP (2/11/11)

[New UNEP Report Tracks the Changing Global Environment over the Past Two Decades](#)

The environmental changes that have swept the planet over the last twenty years are spotlighted in a new compilation of statistical data by the UN Environment Programme (UNEP), released in a report

simultaneously assessed these risk factors in Quito, Ecuador with two socioeconomically similar neighborhoods. All subjects were aged 18-42 months. In anemic children, higher pollution exposure was significantly associated with pneumonia hospitalization. In non-anemic children, no difference in hospitalizations by pollution exposure status was detected. Children exposed to higher levels of air pollution had more pneumonia hospitalizations, total respiratory illness, stunting and anemia compared to children exposed to lower levels of air pollution. Also, children exposed to higher levels of air pollution had significantly lower oxygen saturation consistent with air pollution related dyshemoglobinemia. The authors concluded that ambient air pollution is associated with rates of hospitalization for pneumonia and with physician's consultations for acute respiratory infections. Anemia may interact with air pollution to increase pneumonia hospitalizations.

*Environmental Health*

## **Chemicals**

### [Formaldehyde Exposure and Lower Respiratory Infections in Infants: Findings from the PARIS Cohort Study](#)

Certain chemical pollutants have been reported to exacerbate lower respiratory tract infections (LRIs), a common childhood ailment. Although formaldehyde is one of the most common air pollutants in indoor environments, its impact on infant health is uncertain. The authors investigated the impact of formaldehyde exposure on LRI incidence during the first year of life among 2,940 infants in the PARIS (Pollution and Asthma Risk: an Infant Study) birth cohort study. They measured formaldehyde in a random sample of infants' dwellings and estimated exposure using predictive models based on measurements and data on

entitled "Keeping Track of our Changing Environment: From Rio to Rio+20". UNEP (1/1/11)

### [UN Urges Action to Meet Key Challenges in World of 7 Billion](#)

Top United Nations officials marked the global population reaching 7 billion with a call to action to world leaders to meet the challenges that a growing population poses, from ensuring adequate food and clean water to guaranteeing equal access to security and justice. UNEP (1/11/11)

## **In the Media**

### [Why are so many children being born with sex defects?](#)

1.2 million Britons are thought to have been born with some kind of disorder of sexual development as a result of errors in their genetic code. The disorders may be becoming increasingly common as a result of chemicals in plastics and hormones excreted by women taking the Pill, or similar drugs used in animal rearing. London Daily Mail (23/11/11)

### [Added to our drinking water: a chemical 'more toxic than lead?'](#)

Through the lips and past the gums, and into the stomach in seconds. It's a drink of water, plus a little hydrofluorosilicic acid: a chemical so corrosive and toxic, it carries a warning label. San Antonio KENS TV (23/11/11)

### [Protect children from lead poisoning, govt urged](#)

An ecological group urged the government to prioritize protecting children from lead poisoning, particularly that arising from paint products. CMA News Philippines (21/11/11)

potential determinants of formaldehyde levels. Health data were collected from parents by self-administered questionnaires. The predictive models correctly classified 70% of dwellings as having high or low formaldehyde exposure. Formaldehyde exposure was significantly associated with LRI and wheezing before and after adjustment for potential confounders. The authors conclude that infants exposed to formaldehyde at an early age may have an increased incidence of LRI.

*Environmental Health Perspectives*

### [Arsenic Exposure and Motor Function among Children in Bangladesh](#)

Several reports indicate that drinking water arsenic (WAs) and manganese (WMn) are associated with children's intellectual function, but little is known about possible associations with other neurological outcomes such as motor function. The authors investigated associations of WAs and WMn with motor function in 304 Bangladeshi children, 8–11 years of age. The authors measured As and Mn concentrations in drinking water, blood, urine, and toenails and assessed motor function with the Bruininks-Oseretsky test in four subscales - fine manual control, manual coordination, body coordination, and strength and agility - which were summarized with a total motor composite score. The authors conclude that their research suggests an adverse association of As exposure and a protective association of Se on motor function in children.

*Environmental Health Perspectives*

## **Global Change**

### [Automated time activity classification based on global positioning system \(GPS\) tracking data](#)

Air pollution epidemiological studies are increasingly using global positioning system

### [Take mercury out of children's hands](#)

Mercury is one of the most toxic substances on earth. Yet the one million children around the world engaged in artisanal gold mining work with it every day. Inhaling even small doses of its vapor is dangerous. There is no known safe level of exposure. Global Post (18/11/11)

### [The weighty problem of POPs](#)

Children exposed to certain persistent chemicals in the womb have a higher risk of being overweight, according to research published in the journal Environmental Health Perspectives. Environmental Health News (18/11/11)

### [Pregnant? Here's more to worry about](#)

Researchers are finding that in utero exposures could be linked with behavioral or emotional problems in young children and increased cancer risk and other problems later in life. Chicago Tribune (16/11/11)

### [Toxins Rob More Than a Decade of Life from Millions](#)

Toxic pollution affects the health of more than 100 million people, shortening their productive life spans by an astonishing 12.7 years on average. Inter Press Service (15/11/11)

### [UNICEF report emphasises threat of climate change to children](#)

UNICEF believes children in the Pacific will be the group most affected if climate change continues unabated. Radio New Zealand International (14/11/11)

### [Smoking and drinking in pregnancy 'harms 10,000 babies in UK each year'](#)

One of Britain's top children's doctor has said that more than 10,000 babies each year suffer serious harm, including death,

(GPS) to collect time-location data because they offer continuous tracking, high temporal resolution, and minimum reporting burden for participants. However, substantial uncertainties in the processing and classifying of raw GPS data create challenges for reliably characterizing time activity patterns. The authors developed and evaluated models to classify people's major time activity patterns from continuous GPS tracking data.

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## **Reproductive Health**

### [Stress during Pregnancy and Offspring Pediatric Disease: A National Cohort Study](#)

The authors used prospective data from a population-based sample of mothers with live singleton births (n = 66,203) to estimate the association between maternal stress during pregnancy (classified based on two a priori-defined indicators of common stress forms, life stress and emotional stress) and offspring diseases during childhood, controlling for maternal stress after pregnancy. The authors report associations between life stress and conditions originating in the perinatal period, congenital malformations, first diagnosis of infection, mental disorders, and eye, ear, respiratory, digestive, skin, musculoskeletal, and genitourinary diseases. Emotional stress was associated with an increased risk for the first diagnosis of infection and a decreased risk for the first diagnosis of endocrine, eye, and circulatory diseases. The authors conclude that maternal life stress during pregnancy may be a common risk factor for a wide range of diseases in children.

*Environmental Health Perspectives*

### [Isomer Profiles of Perfluorochemicals in Matched Maternal, Cord, and House Dust Samples: Manufacturing Sources and](#)

because their mothers drank alcohol, smoked, over-ate, or took drugs during pregnancy. London Guardian (12/11/11)

### [Fukushima crisis 'stunting children's growth'](#)

Eight months on from the nuclear meltdowns at Japan's Fukushima plant the long-term cancer risks for children are in the spotlight, but a new study has highlighted more immediate problems. ABC News (11/11/11)

### [Study gauges global influenza impact on children](#)

Tens of thousands of young children die around the world each year of influenza-related respiratory illness, most of them in developing countries, according to a newly-released study. Reuters (11/11/11)

### [Pneumonia linked to smoke from cooking fires](#)

Smoke from open fires and dirty cookstoves — used by almost half the world's population — is linked to severe pneumonia, especially among women and young children, a new study has found. A second study, published in the journal *NeuroToxicology*, uncovered a surprising link between prenatal maternal exposure to woodsmoke and poorer performance in markers for IQ among their children years later. CBC Canada (11/11/11)

### [States Ban Lead Wheel Weights](#)

The U.S. has worked to get lead out of gas and out of paint, but the biggest source of lead in a consumer product is still on roadways. It's in the form of wheel weights, used to balance the tires on our cars. The Environmental Protection Agency says about 1.6 million pounds of lead fall off of vehicles each year, and it winds up in the environment. Environment Report (10/11/11)

### [Transplacental Transfer](#)

Perfluorochemicals (PFCs), such as perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA), are detectable in the general population and in the environment, including house dust. Sources of PFCs are not well characterized, but isomer patterns should enable differentiation of historical and contemporary manufacturing sources. Isomer-specific maternal–fetal transfer of PFCs has not been examined despite known developmental toxicity of PFOS and PFOA in rodents. The authors examined relative contributions of electrochemical (phased out in 2001) and telomer (contemporary) PFCs in dust and measured how transplacental transfer efficiency (based on a comparison of maternal and cord sera concentrations) is affected by perfluorinated chain length and isomer branching pattern. Results suggest that humans are exposed to telomer PFOA, but larger studies that also account for dietary sources should be conducted. The exposure profile of PFOS and PFOA isomers can differ between the mother and fetus, an important consideration for perinatal epidemiology studies of PFCs.

*Environmental Health Perspectives*

### [Iodine status in late pregnancy and psychosocial determinants of iodized salt use in rural northern Viet Nam](#)

The objective of this prospective study was to establish iodine status among pregnant women in rural northern Viet Nam and explore psychosocial predictors of the use of iodized salt in their households. It included pregnant women registered in health stations in randomly-selected communes in Ha Nam province. At recruitment sociodemographic factors, reproductive health, intimate partner relationship, family violence, symptoms of

### [School lunches tainted with hormone-mimicking chemicals, finds Italian study.](#)

Food packaging appears to increase the levels of two phthalates in lunches fed to Italian children. This was discovered by Italian scientists when they compared the level of phthalates in elementary school children's food before and after it was packaged and delivered. Estimates of the children's exposure to the chemicals from this one mid-day meal approaches the total daily intake levels set by the European Union's food safety authority. *Environmental Health News* (10/11/11)

### [How Health and Lifestyle Choices Can Change Your Genetic Make-Up](#)

Since researchers cracked the human genome some 10 years ago, we've had a heightened awareness of the importance of genetics in our risk for certain diseases. Now, research in the new field of epigenetics is finding that our lifestyle choices -- the foods we eat, the chemicals we are exposed to, how active we are, even our social environments -- can actually alter our health at the level of the gene. *Atlantic Monthly* (7/11/11)

### [Study says pesticides in food chain causes ADHD in children](#)

According to new research published in the *Journal of Pediatrics*, levels of pesticides commonly encountered in food as well as around the home significantly increase children's risk of developing attention deficit hyperactivity disorder (ADHD) and could be causing an increase in the number of children living with the condition. *Eureka Times-Standard* (6/11/11)

common mental disorders and use of micronutrient supplements were assessed. During a second assessment a urine specimen was collected to measure urinary iodine concentration (UIC) and iodized salt use was assessed. The 413 pregnant women who provided data for this study had a median UIC of 70 µg/l; nearly 83% had a UIC lower than the 150 µg/l recommended by the World Health Organization; only 73.6% reported using iodized salt in any form in their households. Iodized salt use was lower among nulliparous women; less educated women; factory workers or small-scale traders, government workers and women with common mental disorders at recruitment. The authors concluded that the decline in the use of iodized salt in Viet Nam since the National Iodine Deficiency Disorders Control Programme was suspended in 2005 has placed pregnant women and their infants in rural areas at risk of iodine deficiency disorders.

*Bulletin of World Health Organizations*

## UPCOMING EVENTS

[Pacific Basin Consortium and Environmental Geochemistry and Health](#)

10-13 April 2012. Gwangju, South Korea

[PPTOXIII - Prenatal Programming and Toxicity. Environmental Stressors in the Developmental Origins of Disease: Evidence and Mechanisms](#)

14-16 May 2012. Paris, France

[The Contribution of Epigenetics in Pediatric Environmental Health](#)

May 30th - June 1st, 2012. San Francisco, California. United States

[Manganese heightens lead's effects on children.](#)

Young children exposed to both lead and higher levels manganese at their first birthday are more likely to have lower mental and motor skills development at age 3, indicates a study in Mexico. Environmental Health News (4/11/11)

[Infant brain drain: Chemicals in plastics under scrutiny.](#)

Gestational exposure to some types of phthalates found in plastics could affect how the infant brain develops. The study, published in the journal Neurotoxicology and Teratology, reports these chemicals may lead to varied behavioral effects. Environmental Health News (3/11/11)

[Pollution a threat to progress of poorest countries](#)

A report released by the UN's development program warns that unless there's a serious global change of direction, living standards will plunge in the poorest countries by 2050, reversing decades of gradual gains. Toronto Star (2/11/11)

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