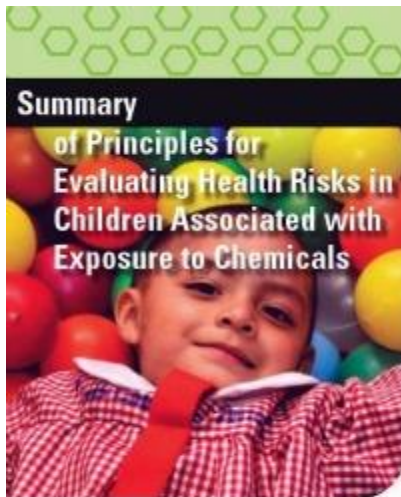


## Children's Environmental Health International Initiatives

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

September 2011

### Summary of Principles for Evaluating Health Risks in Children Associated with Exposure to Chemicals



environmental factors can affect children's health quite differently from adults' health. It is a summary of Environmental Health Criteria 237.

Environmental factors play a major role in determining the health and well-being of children. Accumulating evidence indicates that children, who comprise over one third of the world's population, are among the most vulnerable of the world's population and that environmental factors can affect children's health quite differently from

This summary document explains that children are among the most vulnerable of the world's population and

### CHILDREN'S ENVIRONMENTAL HEALTH NEWS

#### Press Releases

[UNEP Children and Youth Conference Spotlights Job Opportunities in a Green Economy](#)

Urgently bridging the skills gap among young people through improved education and training will be one of the keys towards delivering a global Green Economy. UNEP (27/9/11)

[Zimbabwe launches 1st national scale cash grant programme for children and families](#)

"Protecting children from poverty, harm and abuse begins with reducing their vulnerabilities; cash transfers are one of the critical components that will contribute to the realisation of children's rights. This shows the inclusive Government's strong commitment to addressing equity and reaching the most vulnerable" said UNICEF Representative, Dr. Peter Salama. "The National Action Plan II will ensure that children have equitable access to a range of services, regardless of where they live or the factors which cause their vulnerability." UNICEF (27/9/11)

[Tackling the global clean air challenge](#)

In many cities air pollution is reaching

adults' health. The disease burden estimates from environmental risks highlight the particular vulnerability of children when facing environmental risks. For example, while 24% of the global burden of disease is attributable to the environment, as much as 33% is attributable to the environment for children (WHO, 2006). Poor, neglected, and malnourished children are most severely affected. These children often live in unhealthy housing, lack clean water and sanitation services, and have limited access to health care and education.

Environmental factors play an important role in determining the health of children, who are among the most vulnerable of the world's population. This document focuses on the relationship between exposure(s) to environmental factors at a specific stage of fetal/child development and health outcomes through the life span, rather than on a single environmental hazard and related disease or outcome. It summarizes the scientific principles to be considered in assessing health risks in children from environmental chemicals and provides information for public health officials, research and regulatory scientists, and others responsible for protecting children's health.

*(taken directly from the document)*

[Link to WHO to download the document](#)

## **JOURNAL ARTICLES**

### **Air Pollution**

[Ambient Air Pollution and Apnea and Bradycardia in High-Risk Infants on Home Monitors](#)

Previous research has indicated that increased ambient air pollution

levels that threaten people's health according to an unprecedented compilation of air quality data released by WHO. The information includes data from nearly 1100 cities across 91 countries, including capital cities and cities with more than 100 000 residents. WHO (26/9/11)

[Student Project Turns Grease Into Green Energy Solutions and Green Jobs](#)

An award-winning recycling project in Westerly, Rhode Island, has been collecting more than 36,000 gallons of waste cooking oil a year. By converting the grease into heating fuel, or biodiesel, the project is bringing an estimated value of US\$60,000 of alternative energy to needy families in the local community. UNEP (23/9/11)

[UN General Assembly announces historic commitment to fight noncommunicable diseases](#)

WHO welcomes the adoption today by the UN General Assembly of the political declaration on the prevention and control of noncommunicable diseases such as diabetes, heart disease and stroke, chronic respiratory disease and cancer which together kill some 36 million people each year. For the first time, global leaders have reached consensus in the General Assembly on concrete actions to tackle these diseases. WHO (19/9/11)

[New WHO study details low-cost solutions to help curb the tide on noncommunicable diseases](#)

A new WHO study reveals that low-income countries could introduce a core set of strategies to prevent and treat cancer, heart disease, diabetes and lung disease for just US\$ 1.20 per person per year. WHO (18/9/11)

concentrations are associated with health effects, although relatively few studies have specifically examined infants. The authors studied associations of daily ambient air pollution concentrations with central apnea and bradycardia events among infants prescribed home cardiorespiratory monitors. The authors report associations between bradycardia and 8-hr maximum ozone and 1-hr maximum nitrogen dioxide. The association with ozone was robust to different methods of control for time trend and specified correlation structure. In secondary analyses, associations of apnea and bradycardia with pollution were generally stronger in infants who were full term and of normal birth weight than in infants who were both premature and low birth weight.

#### *Environmental Health Perspectives*

#### [Residential Exposure to Outdoor Air Pollution during Pregnancy and Anthropometric Measures at Birth in a Multicenter Cohort in Spain](#)

A growing body of research suggests that prenatal exposure to air pollution may be harmful to fetal development. The authors studied the association between exposure to air pollution during pregnancy and anthropometric measures at birth. They estimated exposure to ambient nitrogen dioxide (NO<sub>2</sub>) and benzene for the residence of each woman for each trimester and for the entire pregnancy. Outcomes included birth weight, length, and head circumference of the infant. An increase in NO<sub>2</sub> exposure during pregnancy was associated with a decrease in birth length. For the subset of women who spent ≥ 15 hr/day at home, the association was stronger. The researchers did not observe a significant relationship between benzene levels and birth outcomes. These results underscore concerns that exposure to air pollution during pregnancy is associated

#### [Most difficult place to grow up: Somalia has the world's highest child mortality rate](#)

Stricken by chronic conflict and recurring drought for decades, Somalia now has the world's highest mortality rate for children under the age of five, according to the latest data released by the UN Inter-agency Group for Child Mortality Estimation. UNICEF (16/9/11)

#### [Aviation Takes Action on Ozone and Climate Protection](#)

The agreement to phase out halons is another step forward to further strengthen the ability to minimize the impact of air transport operations on the environment. UNEP (16/9/11)

#### [12 000 fewer children perish daily in 2010 than in 1990 – UNICEF, WHO](#)

The number of children under five years of age dying each year declined from more than 12 million in 1990 to 7.6 million in 2010, UNICEF and WHO said today, releasing the latest estimates on worldwide child mortality. These new figures show that compared to 1990, around 12 000 more children's lives are saved each day. WHO (15/9/11)

#### **In the Media**

#### [Trichloroethylene Causes Human Cancer, Harms Fetal Development, EPA Says](#)

The Environmental Protection Agency released a final human health assessment for trichloroethylene that for the first time classifies the widely used solvent as carcinogenic to humans by all routes of exposure. Bureau of National Affairs (30/0/11)

#### [Are Flame Retardants Safe? Growing evidence says "No"](#)

New studies have underscored the potentially harmful health effects of flame

with altered fetal development.

*Environmental Health Perspectives*

### [Air Pollution and Stillbirth: A Population-Based Case-Control Study in Taiwan](#)

There is limited evidence suggesting that prenatal exposure to ambient air pollutants may increase the risk of stillbirth. The authors studied associations between exposure to ambient air pollutants and stillbirth with special reference to the assessment of gestational periods when the fetus is most susceptible. Stillbirth was associated with increased sulfur dioxide (SO<sub>2</sub>) in the first trimester, particularly among preterm births. Stillbirth was also associated with an increase in PM<sub>10</sub> (particulate matter ≤ 10 μm in aerodynamic diameter) during the first and second month of gestation and, as for SO<sub>2</sub> associations, appeared to be restricted to preterm births. These results indicate that exposure to outdoor air SO<sub>2</sub> and PM<sub>10</sub> may be associated with an increased risk of stillbirth, especially among preterm births, and that the most susceptible time period for exposure is during the first trimester of gestation.

*Environmental Health Perspectives*

## **Chemicals**

### [Dioxin Exposure and Age of Pubertal Onset among Russian Boys](#)

Research in animals has linked exposure to dioxins, furans, and polychlorinated biphenyls (PCB) with altered male gonadal maturation, but it is unclear whether these associations apply to human populations. The authors studied pubertal onset in boys 8–9 years of age from a dioxin-contaminated region of Russia. Serum collected at enrollment was analyzed for concentrations of dioxins, furans, and PCBs. Total serum toxicity equivalent

retardants, used in everything from baby blankets to carpets. Health experts are now calling for more aggressive action to limit these chemicals, including cutting back on highly flammable, petroleum-based materials used in many consumer products. Yale Environment 360 (29/9/11)

### [Metals alone – not together – lower child IQ in Bangladesh.](#)

Exposure to arsenic or manganese in drinking water can lower children's IQ but they pose no further threat together than they do alone, finds a recently published study in Bangladesh. Environmental Health News (29/9/11)

### [Mother's job can increase danger of asthma for unborn baby, say health experts](#)

A pregnant woman's job can give asthma to her unborn baby, researchers say. London Daily Mail (28/9/11)

### [Diesel exhaust here linked to childhood wheezing](#)

Infants and very young children in Tucson exposed to high levels of vehicle diesel pollution are more likely than other kids to suffer from early childhood wheezing, a potential asthma indicator, according to a new University of Arizona study. Tucson Arizona Daily Star (27/9/11)

### [Kohl linked to behavioural problems](#)

Researchers into behavioural disorders among the Gulf region's children are beginning to wonder if traditional forms of eye make-up are part of the problem. Certain types of kohl, the popular decorative black eyeliner, contain high levels of lead. Abu Dhabi National (26/9/11)

quotients (TEQs) were approximately three times higher than those found in European children. Higher dioxin TEQs were associated with later pubertal onset as indicated by testicular volume. Similar associations were observed for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and dioxin concentrations. These findings support an association of higher peripubertal serum dioxin TEQs and concentrations with later male pubertal onset reflected in delayed testicular maturation.

*Environmental Health Perspectives*

[Lower birth weight and increased body fat at school age in children prenatally exposed to modern pesticides: A prospective study](#)

Endocrine disrupting chemicals have been hypothesized to play a role in the obesity epidemic. Long-term effects of prenatal exposure to non-persistent pesticides on body composition have so far not been investigated. The purpose of this study was to assess possible effects of prenatal exposure to currently used pesticides on children's growth, endocrine and reproductive function. Maternal exposure to combinations of modern, non-persistent pesticides during early pregnancy was associated with affected growth, both prenatally and postnatally. The authors found a biphasic association with lower weight at birth followed by increased body fat accumulation from birth to school age. They commented that they cannot rule out some residual confounding due to differences in social class, although this was adjusted for. Associations were stronger in highly exposed than in medium exposed children, and effects on body fat content at school age was potentiated by maternal smoking in pregnancy.

*Environmental Health*

[Shanghai Children Found with Lead Poisoning](#)

Children living in the suburbs of Shanghai have been diagnosed with lead poisoning. In the most seriously affected village, close to 100 children were poisoned and the number is increasing. Epoch Times (25/9/11)

[Chinese primary schools sponsored by tobacco firms](#)

More than 100 primary schools in China are now sponsored by tobacco companies on the hunt for the next generation of smokers, according to antismoking campaigners. London Daily Telegraph (21/9/11)

[Fetal origins: How adult disease risk takes shape before you are born](#)

Deprivation of nutrients during a baby's development in the womb can produce long-lasting changes in organs and metabolism. In adulthood, the changes can make you vulnerable to heart disease and other chronic killers. Portland Oregonian (21/9/11)

[Smoking in films 'encourages teenagers to take it up'](#)

Teenagers who watch films showing actors smoking are more likely to take it up, new UK research suggests. BBC (21/9/11)

[Safe Chemicals Act protects kids](#)

A baby in Alaska is twice as likely to be born with a birth defect than a child delivered anywhere else in the nation. Alaska and the circumpolar Arctic are exposed to pesticides and industrial chemicals that originate from thousands of miles away, travelling northward via oceanic and atmospheric currents and eventually settling in cold climates. These chemicals accumulate in the north

## **Water And Sanitation**

### [Drinking Water Salinity and Maternal Health in Coastal Bangladesh: Implications of Climate Change](#)

Drinking water from natural sources in coastal Bangladesh has become contaminated by salinity due to saltwater intrusion from rising sea levels, cyclone and storm surges, and upstream withdrawal of freshwater. The authors estimated salt intake from drinking water sources and examined environmental factors that may explain a seasonal excess of hypertension in pregnancy. Average estimated sodium intakes from drinking water ranged from 5 to 16 g/day in the dry season, compared with 0.6–1.2 g/day in the rainy season. Women who obtained water from shallow tube wells were more likely to have elevated sodium in the urine than women who drank rainwater. The annual hospital prevalence of hypertension in pregnancy was higher in the dry season than in the rainy season. The problem of saline intrusion into drinking water has multiple environmental causes and may be exacerbated by future changes in sea level. The results of this study should help inform public health decisions aimed at mitigating the potential health effects of climate change.

*Environmental Health Perspectives*

## **Global Change**

### [Meeting global health challenges through operational research and management science](#)

This paper considers how operational research and management science can improve the design of health systems and the delivery of health care, particularly in low-resource settings. It identifies some gaps in the way operational research is typically used in global health and proposes steps to bridge them. It then outlines some

because the cold climate and the fat-based food web favor retention of these persistent toxins. Anchorage Daily News (19/9/11)

### [Life in an unhealthy climate](#)

Asthma rates have been soaring around the world in the past three decades. There is reason to believe that global warming may be playing a part in the rise in respiratory disease in South Africa and elsewhere. The combination of higher temperatures and industrial pollutants is bad news for asthma sufferers. Johannesburg Mail and Guardian (17/9/11)

### [Smoking at home ups kids' lead exposure.](#)

While paint, pipes and gasoline are the commonly considered culprits for lead exposure, researchers show that another preventable source – second hand smoke – can contribute to children's exposure. Environmental Health News (16/9/11)

### [Banned pesticide found in human milk](#)

Banned agricultural pesticide DDT, which can cause cancer, is still widely found in human bodies, new research claims. New Delhi Times of India (14/9/11)

### [Antidepressants associated with autism.](#)

The risk of autism doubled in the children of women who used SSRI antidepressants before getting pregnant and jumped four-fold if they were taken during the first trimester of pregnancy, according to researchers who studied mother-child pairs in Northern California. Environmental Health News (13/9/11)

### [In Manhattan, Children Still Battle 9/11-Related Illnesses](#)

The day the Twin Towers crumbled, more than 25,000 kids inhaled toxic substances. Ten years later, many of them are

analytical tools of operational research and management science and illustrates how their use can inform some typical design and delivery challenges in global health. The paper concludes by considering factors that will increase and improve the contribution of operational research and management science to global health.

*Bulletin of the World Health Organization*

### [Setting Research Priorities to Reduce Global Mortality from Childhood Pneumonia by 2015](#)

This paper aims to identify health research priorities that could assist the rate of progress in childhood pneumonia mortality reduction globally, as set out in the United Nation's Millennium Development Goal 4. The authors applied the Child Health and Nutrition Research Initiative methodology for setting priorities in health research investments. Forty-five leading childhood pneumonia researchers suggested more than 500 research ideas, which were merged into 158 research questions that spanned the broad spectrum of epidemiological research, health policy and systems research, improvement of existing interventions, and development of new interventions. The process was coordinated by the World Health Organization.

*PLoS Medicine*

## **Reproductive Health**

### [Intrauterine growth retardation - small events, big consequences](#)

Intrauterine growth retardation refers to a rate of growth of a fetus that is less than normal for the growth potential of a fetus (for that particular gestational age). As one of the leading causes of perinatal mortality and morbidity, intrauterine growth retardation has immense implications for the short term and long term growth of children.

suffering from health problems that still haven't gone away. Atlantic Monthly (11/9/11)

### [Children on the frontlines: the e-waste epidemic in Africa](#)

In Agbogbloshie, a slum outside the capital city of Accra, Ghana, tons of electronic waste lies smoldering in toxic piles. Children make their way through this dangerous environment, desperate to strip even a few ounces of copper, aluminum, brass, and zinc from worn-out electronics originating from the United States and Europe. Mongabay (11/9/11)

### [Birth defects still a challenge in rural areas](#)

Despite progress in narrowing the maternal and child health gap between urban and rural areas, China still faces challenges to conquer birth defects as well as infant and young child mortality, a senior official from the Ministry of Health said. China Daily (10/9/11)

### [Kids who live with smokers have more ear infections](#)

Kids whose parents smoke are more likely to get ear infections and have hearing problems, according to a new review paper. Reuters (9/9/11)

### [Group seeks action after finding toxic chemicals in 124 children's items](#)

Dangerous chemicals have been found in at least 124 children's products such as toys, accessories, cosmetics and school supplies, an environmental group said. GMA News. Philippines (9/9/11)

### [Haiti quake creates new crisis among women, girls](#)

Haiti's tent baby phenomenon comes as the country continues to struggle to rebuild, and as the nearly 600,000 Haitians still living in hundreds of squalid

It is an important public health concern in the developing countries. Health statistics encompassing parameters for maternal and child health in the Indian subcontinent have shown improvement in the past few years but they are still far from perfect. Maternal health, education and empowerment bears a strong influence on perinatal outcomes including intrauterine growth retardation and should be the primary focus of any stratagem targeted at reducing the incidence of intrauterine growth retardation. A concerted liaison of various medical and social disciplines is imperative in this regard. (Letter to the Editor)

*Italian Journal of Pediatrics*

### **Additional Publications**

#### **Thematic Report - The Global Campaign for the Health Millennium Development Goals 2011. Innovating for Every Woman, Every Child**

This thematic report, Innovating for Every Woman, Every Child, is published in support of the Every Woman, Every Child joint effort initiated by United Nations Secretary-General Ban Ki-moon. It is the first thematic report in a series from the Global Campaign that is intended to be both practical and inspirational. It has been produced in co-operation with the Innovation Working Group created by the Secretary-General in April 2010 to support the Global Strategy for Women's and Children's Health announced at the United Nations special session in September 2010.

[Download the file 1.61Mb](#)

#### **Exposure to professional pest control treatments and the risk of childhood acute lymphoblastic leukemia.**

Previous studies suggest that exposure to pesticides increases the risk of childhood

campus in quake-ravaged communities see the avalanche of medical assistance from foreign doctors and nongovernmental organizations disappear. McClatchy Newspapers (8/9/11)

#### [Study moves towards unlocking autism mystery](#)

A new study has discovered there are different biological types of autism, with genetics, the immune system and the environment all thought to be factors in causing the varied forms. Australia ABC News (8/9/11)

#### [Halogenated BPA Flame Retardants and PPAR \$\gamma\$ Activation](#)

A new study using human cells finds that halogenated derivatives of bisphenol A, used as flame retardants, may contribute to human obesity. Some of the derivatives turn on genes that cause stem cells to become fat cells. Environmental Health Perspectives (6/9/11)

#### [Moms' plasticizer exposure troubling for baby boys.](#)

Increasing exposure to phthalates in pregnant women was associated with poorer development in their baby boys, finds a study that examined mental and motor skills in 6-month-old infants. The results show that the higher the exposure to phthalates in the moms, the lower the scores of infant development, including both cognitive and motor behavior. However, the association was only identified in sons, not in daughters. Environmental Health News (6/9/11)

#### [New hope for early autism diagnosis via brain maps](#)

The brains of autistic children have a distinctive topography that a team of Stanford scientists was able to capture using new imaging techniques, with the

acute lymphoblastic leukemia (ALL). The aim of this analysis was to investigate whether professional pest treatments in or around the home before birth or during childhood increased the risk of childhood ALL.

[Read the article](#)

## UPCOMING EVENTS

[World Conference on Social Determinants of Health](#)

19-21 October 2011. Rio de Janeiro, Brazil.

[6th International Conference on children's health and the environment](#)

14-16 November 2011. Lodz, Poland

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

10-13 April 2012. Gwangju, South Korea

hope of someday creating a template for the autistic brain that could be used to diagnose kids at a very early age. San Francisco Chronicle (4/9/11)

[Common plasticizer alters an important memory system in male rat brains.](#)

An ingredient widely-used to soften plastic containers and toys changed brain development in growing male rats when exposure occurs during a sensitive phase. The same exposure did not affect female rats, report researchers in the journal Neuroscience. Environmental Health News (2/9/11)

[This industry should be kept away from young people](#)

Tobacco is the only consumer product that kills one in two long-term users. It remains the preventable cause of more than a quarter of all cancer deaths in the UK. There is a direct conflict between the interests of tobacco companies and those of public health and it is our duty to ensure that this industry is denied any opportunity to influence tobacco control policy. London Independent (1/9/11)

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### Have news for us?

If you would like to submit information to future HECANET issues, email us at [heca@who.int](mailto:heca@who.int) with the subject line "INFORMATION FOR HECANET".

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