

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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Identifying Important Life Stages for Monitoring and Assessing Risks from Exposures to Environmental Contaminants

Draft document – Open for comment

A significant challenge associated with monitoring and assessing individual and population level exposure and risk to environmental chemicals is associated with how to rigorously consider age and life-stage related changes in behaviour and physiology. Age and life-stage related differences will determine the critical windows of susceptibility as well as the appropriate distribution of exposure factors required to address specific exposure scenarios. Age and life-stage differences in how people interact with the environment may be a major determinant for identifying the individual or population most vulnerable to risks from particular exposures to environmental contaminants.

The draft WHO Document "Identifying Important Life Stages for Monitoring and Assessing Risks from Exposures to Environmental Contaminants" is available for consultation, comment and feedback.

This draft document summarizes important issues to consider in determining the most

CHILDREN'S ENVIRONMENTAL HEALTH NEWS

Press Releases

[Viet Nam survey shows disparities for children and women persist](#)

Viet Nam's Multiple Indicator Cluster Survey 2010-2011 report, reveals persisting disparities in the lives and well-being of children and women in Viet Nam, across regions, by gender, area of residence, wealth, and ethnicity. UNICEF (16/12/11)

[UN Calls for Greater Efforts to Address Land Degradation](#)

Natural desert ecosystems are valuable and must be conserved, but man-made deserts must be avoided. UNEP (16/12/11)

[Three-year study identifies key interventions to reduce maternal, newborn and child deaths](#)

A new global consensus has been agreed on the key evidence-based interventions that will sharply reduce the 358 000 women who still die each year during pregnancy and childbirth and the 7.6 million children who die before the age of 5. Joint Release: Aga Khan University, Partnership for Maternal, Newborn and Child Health, WHO (15/12/11)

appropriate age ranges and life stages for risk assessment. It then proposes a harmonized set of age bins for monitoring and assessing risks from exposures to chemicals for use globally.

[Access the document and additional information](#)

Comments are due by 31 January 2012.

JOURNAL ARTICLES

Air Pollution

[Black Carbon as an Additional Indicator of the Adverse Health Effects of Airborne Particles Compared with PM₁₀ and PM_{2.5}](#)

Current air quality standards for particulate matter (PM) are based on PM mass concentration [PM₁₀ and PM_{2.5} ($\leq 10 \mu\text{m}$ and $\leq 2.5 \mu\text{m}$ in aerodynamic diameter, respectively)]. PM from combustion sources is considered more health relevant than PM from other sources, but the estimated impact of emission-reduction measures, such as particle traps and environmental zones, is relatively small when expressed in relation to a reduction in the total mass concentration. The authors evaluated the value of black carbon particles (BCP) as an indicator of the adverse health effects of combustion particles in addition to PM mass. They performed a systematic review and meta-analysis of epidemiological studies that measured both PM mass and BCP and estimated the potential impact on life expectancy of a traffic abatement measure using the pooled concentration–response functions for BCP and PM_{2.5}. The authors report that estimated health effects of a 1- $\mu\text{g}/\text{m}^3$ increase in exposure were greater for BCP than for PM₁₀ or PM_{2.5} and that the estimated increase in life

[Malaria deaths are down but progress remains fragile](#)

Malaria mortality rates have fallen by more than 25% globally since 2000, and by 33% in the WHO African Region, according to the World malaria report 2011, issued by WHO. This is the result of a significant scaling-up of malaria prevention and control measures in the last decade, including the widespread use of bed nets, better diagnostics and a wider availability of effective medicines to treat malaria. However, WHO warns that a projected shortfall in funding threatens the fragile gains and that the double challenge of emerging drug and insecticide resistance needs to be proactively addressed. WHO (13/12/11)

[UNICEF launches report on the impact of labour migration on children left behind in Tajikistan](#)

A UNICEF report sheds light on the negative impact of labour migration on many children who are left behind in Tajikistan. The report sees a need for a coherent national social protection policy not solely focused on poverty reduction but also to protect vulnerable people, including children left behind. UNICEF (13/12/11)

[Women Most at Risk from Climate Disasters, Says UN Report](#)

Women, particularly those living in mountain regions in developing countries, are facing disproportionately high risks to their livelihoods and health from climate change, as well as associated risks such as human trafficking, according to a new report from the United Nations Environment Programme (UNEP). Investing in low carbon, resource efficient green technologies, water harvesting and fuel wood alternatives can strengthen climate change adaptation and improve

expectancy associated with a hypothetical traffic abatement measure was four to nine times higher when expressed in BCP compared with an equivalent change in PM_{2.5} mass. The authors conclude that BCP is a valuable additional air quality indicator that would be particularly useful in evaluating health risks of air pollution dominated by primary combustion emissions.

Environmental Health Perspectives

Chemicals

[Affinity for risky behaviors following prenatal and early childhood exposure to tetrachloroethylene \(PCE\)-contaminated drinking water: a retrospective cohort study](#)

Many studies of adults with acute and chronic solvent exposure have shown adverse effects on cognition, behavior and mood. The authors investigated the long-term impact of prenatal and early childhood exposure to the solvent tetrachloroethylene (PCE) on the affinity for risky behaviors, defined as smoking, drinking or drug use as a teen or adult. Eight hundred and thirty-one subjects with prenatal and early childhood PCE exposure and 547 unexposed subjects were studied. Participants completed questionnaires to gather information on risky behaviors as a teenager and young adult, demographic characteristics, other sources of solvent exposure, and residences from birth through 1990. PCE exposure was estimated using the U.S. EPA's water distribution system modeling software. Individuals who were highly exposed to PCE-contaminated drinking water during gestation and early childhood experienced 50-60% increases in the risk of using two or more major illicit drugs as a teenager or as an adult. Thirty to 60% increases in the risk of certain smoking and drinking behaviors were also seen among

women's livelihoods, says the report. UNEP (6/12/11)

[UNICEF calls for children with disabilities to be included in all development](#)

Marking the International Day of Persons with Disabilities, UNICEF called on the global development community to focus greater attention and investment in helping children and young people with disabilities to realize their rights, and renewed the call for universal ratification of the Convention on the Rights of Persons with Disabilities. UNICEF (3/12/11)

[New Sustainability Targets for Rice - the World's Most Important Food Crop](#)

Rice consumers worldwide can now look forward to eating "green" rice with the launch of an initiative that will set environmentally sustainable and socially responsible rice production management standards. UNEP (1/12/11)

In the Media

[Children would be protected from pesticides under advancing legislation](#)

Legislation that would protect children from exposure to potentially harmful pesticides at child care centers and certain schools, playgrounds and recreational fields was released recently by an Assembly committee. Gloucester Country Times (18/12/11)

[Burgeoning Cluster Of Lifesaving Stove Designers Call NW Home](#)

More than a century after the discovery of electricity, billions of people still heat and cook with wood fires. In the developing world, indoor air pollution from smoke is blamed for nearly 2 million deaths per year. The World Health Organization estimates it's mostly women and children

highly exposed subjects. The results of this study suggest that risky behaviors, particularly drug use, are more frequent among adults with high PCE exposure levels during gestation and early childhood.

Environmental Health

[Bone resorption and environmental exposure to cadmium in children: a cross-sectional study](#)

Exposure to cadmium has been associated with osteoporosis and fracture risk in women and elderly, but studies in children are lacking. In the present study the authors investigate the association between markers of bone demineralization [urinary calcium (Ca) and deoxypyridinoline (DPD) excretion] and urinary cadmium (Cd) excretion (as an index of lifetime body burden). 155 schoolchildren from 2 elementary schools in Lahore, Pakistan were included. The authors found that even in young children, low-level environmental exposure to cadmium is associated with evidence of bone resorption, suggesting a direct osteotoxic effect with increased calciuria.

Environmental Health

Water And Sanitation

[Decay of Bacteroidales genetic markers in relation to traditional fecal indicators for water quality modeling of drinking water sources](#)

The implementation of microbial fecal source tracking (MST) methods in drinking water management is limited by the lack of knowledge on the transport and decay of host-specific genetic markers in water sources. To address these limitations, the decay and transport of human (BacH) and ruminant (BacR) fecal Bacteroidales 16S rRNA genetic markers in a drinking water source were simulated using a

who die from exposure to smoke from cooking fires and rudimentary stoves. It kills more people each year than AIDS or malaria. National Public Radio (16/12/11)

[Children's leukemia risk tied to father's smoking](#)

Children whose fathers smoked around the time of their conception have at least a 15 percent higher risk of developing the most common form of childhood cancer, a type of leukemia, according to an Australian study. Reuters (15/12/11)

[Media campaign says mercury pollution a pro-life issue](#)

Stemming largely from America's dependence on coal-fired plants, mercury is released from burning coal and ends up in local water systems, often contaminating fish and shellfish. Presence of high mercury levels in pregnant women and breast-feeding mothers has been linked to interference with proper brain development in fetuses and babies, including attention issues, lower IQs, coordination problems, and developmental disabilities. Mongabay (15/12/11)

[Teen smoking at historic lows but marijuana use high: survey](#)

Cigarette and alcohol use among teens is at the lowest level in decades but daily marijuana use is at a 30-year peak level among high school seniors. Reuters (15/12/11)

[Maine manufacturers forced to report use of BPA and other toxic chemicals in toys, paints](#)

Environmental health advocates called for congressional action to outlaw certain chemicals after the release of a report identifying more than 650 brand name products that contain the toxins. Bangor Daily News (14/12/11)

microbiological model coupled to a three-dimensional hydrodynamic model. The microcosm trials indicated that the persistence of BacH and BacR in the microcosms was not significantly different from the persistence of traditional fecal indicators. The modeling of BacH and BacR transport illustrated that the highest levels of genetic markers at the raw water intakes were associated with human fecal sources (on-site sewers and emergency sewer overflow). This novel modeling approach improves the interpretation of MST data, especially when fecal pollution from the same host group is released into the water source from different sites in the catchment.

Environmental Science and Technology

Global Change

[Climate Change, Crop Yields, and Undernutrition: Development of a Model to Quantify the Impact of Climate Scenarios on Child Undernutrition](#)

Global climate change is anticipated to reduce cereal yields and food security and thereby increase child undernutrition. The etiology of undernutrition is complex, and there is a need to develop models that better quantify the potential impacts of climate change on population health. The authors used current national food availability and undernutrition data to parameterize and validate a global model, employing a process-driven approach based on estimations of the physiological relationship between a lack of food and stunting. They then estimated stunting in five regions of South Asia and sub-Saharan Africa in 2050 using published modeled national calorie availability under two climate scenarios and a reference scenario (no climate change). The authors report that climate change is likely to increase child undernutrition in South Asia and sub-

[News stories miss important points of breast cancer report.](#)

Some media reported that a new analysis of environmental links to breast cancer tells women to stop worrying about consumer products. But these stories ignore the report's explanation that definitive evidence is not attainable and lack of human evidence of harm doesn't mean something is safe. The real news is that for the first time, an authoritative medical group stated that scientific evidence plausibly links pollutants and industrial chemicals with biological activity that suggests breast cancer risk.

Environmental Health News (13/12/11)

[Deaths from malaria fall but funding woes loom - WHO](#)

Deaths from malaria have fallen dramatically in the past decade thanks to increased aid giving more people access to nets and medicines, but the economic slowdown could curb future progress, the World Health Organisation said. Reuters (13/12/11)

[Brominated battle: Soda chemical has cloudy health history](#)

Patented as a flame retardant for plastics, and banned in food throughout Europe and Japan, a brominated chemical called BVO has been added to sodas for decades in North America. Now some scientists have a renewed interest in this little-known ingredient, found in 10 percent of sodas in the United States. After a few extreme soda binges – not too far from what many video gamers regularly consume – a few patients have needed medical attention for skin lesions, memory loss and nerve disorders, all symptoms of overexposure to bromine. Environmental Health News (12/12/11)

Saharan Africa, even after taking into account economic growth. They conclude that, based on their model, reducing and preventing future undernutrition will require both increased food access and improved socioeconomic conditions, as well as reductions in greenhouse gas emissions.

Environmental Health Perspectives

Reproductive Health

[Exposure to Trihalomethanes through Different Water Uses and Birth Weight, Small for Gestational Age, and Preterm Delivery in Spain](#)

Some studies have suggested that exposure to water disinfection by-products (DBPs) is associated with reduced birth weight and altered duration of gestation, but the data remain inconclusive. Trihalomethanes (THMs) are the DBPs found generally at the highest concentrations, and the most common THMs are chloroform, bromodichloromethane, dibromochloromethane, and bromoform. The authors assessed exposure to THMs during pregnancy through ingestion, showering, bathing, and swimming in pools and evaluated the association of these exposures with birth weight, small for gestational age (SGA), low birth weight (LBW), and preterm delivery in mother-child pairs in five areas in Spain during 2000–2008. Information on water use during pregnancy was provided by the women through questionnaires. Residential THM levels were ascertained through ad hoc sampling and regulatory data, which was modeled and combined with personal water use and uptake factors to estimate personal uptake. Outcomes were defined following standard definitions, and 2,158 newborns were included in the analysis. Although THM levels were high in some areas and

[Studies link pollution to lower IQs, increased Alzheimer's risk](#)

Several new studies have added new complications that can be linked to over-exposure to pollution from automobile traffic. Studies in New York, Beijing, Boston, and Krakow, Poland show that children in high traffic areas perform worse on intelligence tests and have more emotional problems than children who breathe cleaner air. Public Radion International (9/12/11)

[PCB but not DDE linked to lower birth weight in European studies.](#)

The association between PCB exposure and birth weight suggests that a mother's PCB exposure may reduce fetal growth and thus the birth weight of her newborn. In contrast, the DDT metabolite DDE was not related to birth weight. The magnitude of the association between PCB exposure and birth weight was not trivial. It was similar to a pregnant women smoking 10 cigarettes per day and was higher than exposure to second-hand smoke. Environmental Health News (9/12/11)

[Banned pesticide spikes in breast milk after spraying resumes, study finds.](#)

Levels of DDT – a mostly banned pesticide still allowed for malaria control in some tropical regions – increased three-fold in breastfeeding mothers after one indoor spraying, finds a study in Mozambique, Africa. Environmental Health News (8/12/11)

[Arsenic and Old Rice: Should We Worry About a Toxic Chemical in a Popular Food?](#)

In a new study, researchers have found that eating rice can also lead to arsenic exposure, raising questions about how much of the chemical may be making its way into the food supply – posing special

the exposure assessment was extensive, the authors conclude that, in this cohort, residential THM exposure during pregnancy driven by inhalation and dermal contact routes was not associated with birth weight (SGA or LBW) or preterm delivery.

Environmental Health Perspectives

Additional Publications

Human Biomonitoring: concept, benefits and limitations easily explained

The e-learning HBM-module recently developed by "Kinderumwelt" at the German Academy of Pediatrics is an easy-to-use web application. It offers scientifically sound but easily understandable information on the theory and practice behind human biomonitoring (HBM).

HBM is an important concept and tool in environmental health. It measures the total body burden of a chemical compound or its metabolites in human biological material such as blood or urine. While HBM does not provide information on the source of an exposure, it may offer valuable insight into the transfer of a chemical compound from the environment into the body in (semi-) quantitative terms.

HBM may be used to evaluate a possible environment-related health risk on the individual or population level and to take corrective actions, if necessary. However, considerable knowledge is needed to perform HBM studies and to come to a sound interpretation of HBM results.

Taking the case story of a young family as a starting point, exposure pathways, the biological half-life of environmental contaminants, sampling methods as well as the interpretation of biomonitoring results

risks to pregnant women and their children. Time Magazine (7/12/11)

[Radioactive caesium found in milk powder](#)

Radioactive caesium believed to have come from the Fukushima nuclear plant has been found in a brand of Japanese baby formula.

ABC News Australia (7/12/11)

[Toxins in beauty products, plastics, meats can harm child health, Mt. Sinai experts claim](#)

Exposure to toxins found in everyday items can wreak havoc on children's hormonal systems and set them up for a lifetime of poor health, child health experts from Mount Sinai Medical Center said Monday. New York Daily News (6/12/11)

[India's uranium mines cast a health shadow](#)

Environmental groups say the state-owned Uranium Corporation of India Limited is polluting the groundwater by dumping radioactive waste inside three so-called tailings ponds that hold the sludge produced by the mining process. Agence France-Presse (5/12/11)

[Weed killer linked to gender-bending in animals](#)

Exposure to atrazine, a commonly used weed killer, increases the risk of reproductive problems in a wide range of animals, says a new review study that analyzed research from around the world. Toronto Globe and Mail (2/12/11)

[Apple juice can pose a health risk from calories](#)

Despite the government's consideration of new limits on arsenic, nutrition experts say apple juice's real danger is to waistlines and children's teeth. Associated Press (2/12/11)

are explained. The HBM module aims at health professionals as well as at policy makers, NGOs, journalists and lay people. There is an English and a German language version available.

[Link to the English version](#)

[Link to the German version](#)

Kinderumwelt is a not for profit agency on Childrens Environmental Health affiliated with the German Academy of Pediatrics

UPCOMING EVENTS

[Environmental Health in the Political Agenda](#)

22-24 March 2012. Montevideo, Uruguay

In Memory of Dr. Jenny Pronczuk

English translation will be available shortly

[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

[Meeting told how air quality damages health of youngsters exposed to busy main roads](#)

Children's lungs have been badly affected before they have developed properly because of high levels of pollution that often breaches European and World Health Organisation guidelines. Islington Tribune (2/12/11)

[Obesity & pesticides: The untold story](#)

Researchers in Spain found that whether a child, especially a girl, will be obese is not just dependent on lifestyle choices, but also on the child's exposure to persistent organic pollutants (POPs) before birth. Pesticide Action Network (1/12/11)

[Pollution plays a role in autism and dyslexia, say Israeli and foreign scientists](#)

Growing evidence suggests pollution plays a significant role in developmental problems among children, including autism, attention deficit disorder and even dyslexia. Haaretz (1/12/11)

[Climate Change, Crop Yields, and Undernutrition](#)

With more than 1 billion people estimated to not have enough to eat, food security is a pervasive problem. An estimated one-third of the global burden of disease afflicting children under the age of 5 is caused by undernutrition. Climate change is anticipated to reduce cereal yields, further threatening food security and potentially increasing child undernutrition. Environmental Health Perspectives (1/12/11)

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Have news for us?

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