
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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Children's Environmental Health Units WHO 2010

WHO has just released a new document on Children's Environmental Health Units (CEHUs). The document is intended for governmental officials, health professionals, public health officers, environmental officers, decision-makers, community groups, non-governmental organizations and other stakeholders interested in improving children's environmental health. It offers an overview of the services CEHUs may provide to children, parents, the wider community, paediatricians, health professionals and governmental officials involved in health or environmental programs to enable them to effectively and cooperatively address environmentally-related exposures and diseases.

A Children's Environmental Health Unit is a centre that advances the ongoing training of health care providers, the ongoing education of the public and other sectors on the protection of children from environmental threats, the management of children with known or suspected exposure to environmental stressors, and the diagnosis, management, and treatment of children with illnesses that are derived from environmental stressors. The booklet, developed with funding from the United States Environmental Protection Agency Office of Children's Health Protection & Environmental Education, provides an overview of the services that a

CHILDREN'S ENVIRONMENTAL HEALTH NEWS

Press Releases

[UNICEF Congo: Law for indigenous populations welcome milestone](#)

A groundbreaking new law that gives Congolese children belonging to indigenous populations – until now the most vulnerable amongst the vulnerable – a legal basis to access health, education and protection was adopted by the Senate. UNICEF (31/12/10)

[Marrakesh Declaration, a new milestone for children's rights](#)

Participants at an Arab conference on children's rights today adopted a declaration calling for further action to protect children and promote their rights. UNICEF (21/12/10)

[Government of Indonesia, religious leaders and UNICEF commit to promotion of breastfeeding as best start for children](#)

Influential leaders from the government and the country's religious community have come together with the support of UNICEF to promote the importance of breastfeeding. UNICEF (21/12/10)

Children's Environmental Health Unit may provide to children, parents, the community, health professionals and governmental officials working towards preventing environmentally-related diseases among children.

Background

Health care providers are well placed to detect, treat, and prevent environmentally-related diseases and health conditions. However, few mechanisms and structures are in place to enhance the recognition of environmental influences on human health, serve as repositories and sources of information for those concerned about children's health and the environment, and promote action towards healthier and safer environments for children of today and adults of the future.

For health professionals to effectively protect children from environmental threats, specialized training is useful. Evidence shows that health providers are generally not provided the training that they need. The complexity of children's environmental health (CEH) issues is compounded by the combination of legacy environmental issues, such as water quality and sanitation service delivery, with modern challenges such as transboundary contamination by persistent toxic substances, ozone depletion and hence ultraviolet and ionising radiation, global climate change, and exposure to endocrine-disrupting chemicals. For children in developing countries, the presence of all such risks represent a 'triple burden of disease' – a high level of communicable diseases, the increasingly severe burden of non-communicable diseases, and emerging risks from new diseases and additional stressors from the social and physical environment.

[First WHO indoor air quality guidelines on indoor chemicals now released](#)

Hazardous substances emitted from buildings, construction materials and indoor equipment or due to human activities such as fuel combustion for cooking or heating, lead to a broad range of health problems and may even be fatal. WHO/Europe has released a new volume of the global guidelines for indoor air quality. WHO (15/12/10)

[Malaria report shows rapid progress towards international targets](#)

The drive to provide access to antimalarial interventions is producing results. A massive scale-up in malaria control programmes between 2008 and 2010 has resulted in the provision of enough insecticide-treated mosquito nets (ITNs) to protect more than 578 million people at risk of malaria in sub-Saharan Africa. WHO (14/12/10)

[UNICEF ready to assist children affected by floods in Colombia, Panama and Venezuela](#)

Widespread flooding and mudslides caused by days of torrential rain in the three countries have so far caused over 200 deaths and destroyed tens of thousands of homes. UNICEF said the children's agency is poised to support children and their families affected by the floods that are driving thousands of people from their homes in Colombia, Panama and Venezuela. UNICEF (14/12/10)

Children and the Environment

Children's environmental health merits special attention because children are disproportionately exposed and vulnerable to a range of environmental hazards. Children's exposures to environmental health hazards occur in many different settings: in the home, in the playground, at school, and in the wider environment (Chaudhuri & Fruchtengarten, 2005). Their exposures to toxicants in food, air, water, and soil are greater than that of adults, because they ingest more food and water and breathe more air in relation to body weight than adults do; they also engage in frequent hand-to-mouth behaviours and live and play close to the ground, where contaminants may be present (American Academy of Pediatrics, 2003; Landrigan & Garg, 2005). Once exposed, they are more vulnerable to toxicants' effects, because their immature metabolic pathways are less able to metabolize, detoxify, and excrete harmful substances (American Academy of Pediatrics, 2003; Landrigan & Garg 2005).

Environmental hazards can easily disrupt children's rapid growth and development (Tellerias & Paris, 2008). Development of organ systems in fetuses and infants is of particular concern, since they change rapidly and cannot be easily repaired once damaged by environmental toxicants (American Academy of Pediatrics, 2003; Landrigan & Garg, 2005). Direct and indirect effects of childhood environmental exposures often persist throughout adults' lives (Gluckman et al., 2005a; Gluckman et al., 2005b; Gluckman et al., 2008).

Environmental hazards include bacteria and parasites, such as those causing cholera and malaria; neurotoxicants such as lead and mercury; air pollutants such as second-hand smoke and volatile organic compounds, and

In the Media

[Research links rise in Falluja birth defects and cancers to US assault](#)

A study examining the causes of a dramatic spike in birth defects in the Iraqi city of Falluja has for the first time concluded that genetic damage could have been caused by weaponry used in US assaults that took place six years ago. London Guardian (31/12/10)

[Global flu warning after UK hit](#)

Northern hemisphere countries are being told by health experts to brace themselves for flu outbreaks. There has been a well-publicised surge of cases in the UK during December with swine flu appearing to be the dominant of the three strains circulating. Cases have been highest in children aged between five and 14, followed by children under four and then those aged between 15 and 44. BBC (28/12/10)

[Puerto Rico baffled by high asthma rate](#)

Puerto Rico is a U.S. Caribbean territory where children are nearly 300 percent more likely to have the respiratory ailment than white non-Hispanic children in the continental United States. And this year, Puerto Rico has seen a jump in asthma cases, which health officials suspect might be linked to the heavy rains that have unleashed millions of spores. Associated Press (27/12/10)

[Salinas, California: The Salad Bowl of Pesticides](#)

The difficulties facing migrant workers who plant and pick the crops is an old story however, new research on the

natural toxins such as aflatoxins, in addition to physical hazards to which children may be exposed in the built and work environment. Children's behaviour may also increase the risks of exposure. Young children's normal hand-to-mouth activities and risk-taking behaviour as the child enters adolescence can result in increases in poisonings and injuries. Schools built on undesirable land and or within close proximity to heavy traffic or fields where pesticides are used may pose further health hazards to children. Children can also be exposed to environmental risk factors at home, for example, when the child is carried in the back while the mother is cooking; or when children are exposed to chemicals that remain in their parents' clothes and hands after they leave work.

Reducing children's exposures to environmental hazards can substantially decrease the global burden of disease. The World Health Organization (WHO) estimates that over 30% of the global burden of disease can be attributed to environmental factors (Smith, Corvalán & Kjellstrom, 1999; Prüss-Üstün & Corvalán, 2006). In children 0-4 years old, who account for only 10 percent of the world's population, 36% (31-40%) of the overall disease burden is attributable to modifiable environmental risk factors; that fraction is 34% among children 0-14 years of age. In terms of mortality, the environmental attributable fraction is 37% for children 0-4 years of age, and 36% for children 0-14 years. Diarrhoea, malaria, and respiratory infections together contributed to 24% of all deaths in children under 15 years of age. These environmentally-mediated diseases cause more than 4.7 million deaths in children under five every year (WHO, 2002). Such a large burden is unacceptable (WHO, 2004), and addressing it can help achieve the Millennium Development Goal target of reducing the under-five mortality rate by two-

neurodevelopmental effects of pesticides is setting off public health alarm bells. Politics Daily (23/12/10)

[Eco-bulbs 'a health hazard for babies and pregnant women due to mercury inside'](#)

Energy-saving light bulbs were at the centre of a fresh health scare after researchers claimed they can release potentially harmful amounts of mercury if broken. London Daily Mail (23/12/10)

[African Gold Rush Kills Children as Miners Discover Lead Dust](#)

At least 284 children under the age of five have died from lead poisoning in eight villages in Nigeria's Zamfara state as a result of small-scale gold mining. An additional 742 are being treated for high levels of lead in their blood, a number which may rise to 3,000 by the end of next year. The deaths are an unintended consequence of a 21st century gold rush. Bloomberg News (21/12/10)

[Swine flu winter: 200 fight for life as number of patients doubles in a week to put strain on intensive care units](#)

The number of patients in intensive care has doubled in a week and many of them are either elderly or pregnant. Pregnant women, the obese and asthmatics are at greater risk, with the virus far more common in those under the age of 65. London Daily Mail (21/12/10)

[Study: BPA Exposure May Reduce Chances of IVF](#)

According to a small new study led by the University of California, San Francisco, the endocrine disruptor BPA

thirds between 1990 and 2015 (UNICEF, 2007).

[Read the full document](#)

JOURNAL ARTICLES

Air Pollution

[Association of Secondhand Smoke Exposure with Pediatric Invasive Bacterial Disease and Bacterial Carriage: A Systematic Review and Meta-analysis](#)

The deleterious health effects of smoking on smokers are well established, but smoking also seriously damages the health of nonsmokers. Secondhand smoke (SHS), which is released by burning cigarettes and exhaled by smokers, contains hundreds of toxic chemicals that increase the risk of adults developing lung cancer and heart disease. Children, however, are particularly vulnerable to the effects of SHS exposure (also known as passive smoking) because they are still developing physically. In addition, children have little control over their indoor environment and thus can be heavily exposed to SHS. Exposure to SHS increases the risk of ear infections, asthma, respiratory symptoms (coughing, sneezing, and breathlessness), and lung infections such as pneumonia and bronchitis in young children and the risk of sudden infant death syndrome during the first year of life.

Several studies have also shown an association between SHS exposure (which damages the lining of the mouth, throat, and lungs and decreases immune defenses) and potentially fatal invasive bacterial disease (IBD) in children. Here, the researchers undertake a systematic review and meta-analysis of the association between SHS exposure in children and two outcomes—IBD and the presence of IBD-causing organisms in the nose and throat (bacterial carriage).

may damage a woman's ova before a baby can even be conceived, much less born. Time Magazine (20/12/10)

[We need to get to the bottom of what mobile phones do to our health](#)

The scientific jury is still out on whether those powerful micro-waves may be causing long-term damage. Thousands of studies have already been published on the subject, especially into the links between brain cancer and radiation. Yet the vast majority have proved inconclusive. The effects are as unclear as a decade ago. But one fact is indisputable. Brain cancer is on the rise among 20- to 29-year-olds. London Guardian (20/12/10)

[Autism study links disease to freeway](#)

Children born to mothers, who live near the freeway are more likely to develop autism. KTTC TV (19/12/10)

[Asthma hits state's poor the hardest](#)

Asthma is on the rise in California, and the low-income tend to bear the greatest burden from the condition. California Watch (17/12/10)

[State of endosulfan](#)

It is called the mango city. But of late, Muthalamada panchayat in Kerala's Palakkad district has gained notoriety for excessive use of endosulfan in its mango orchards. Its effect is showing on people living there. Down to Earth India (16/12/10)

The findings indicate that SHS exposure is significantly associated with invasive meningococcal disease among children. However, the evidence that SHS exposure is associated with invasive pneumococcal and Hib disease is only suggestive. These findings also indicate that exposure to SHS is associated with an increased carriage of *N. meningitidis* and *S. pneumoniae*. The accuracy and generalizability of these findings is limited by the small number of studies identified, by the lack of studies from developing countries where SHS exposure is increasing and the burden of IBD is high, and by large variations between the studies in how SHS exposure was measured and IBD diagnosed. Nevertheless, they suggest that, by reducing children's exposure to SHS (by, for example, persuading parents not to smoke at home), the illness and death caused by IBDs among children could be greatly reduced. Such a reduction would be particularly welcome in developing countries where vaccination against IBDs is low.

PLOS Medicine

Chemicals

[Brominated and Chlorinated Flame](#)

[Retardants: The San Antonio Statement](#)

The "San Antonio Statement on Brominated and Chlorinated Flame Retardants" addresses the growing concern in the scientific community about the persistent, bioaccumulative, and toxic properties of brominated and chlorinated organic flame retardants (BFRs and CFRs, respectively) and the exposure to humans and wildlife as a result of intensive use. Nearly 150 scientists from 22 countries have signed the statement since it was presented at the 30th International Symposium on Halogenated Persistent Organic Pollutants (Dioxin 2010), held 12–17 September 2010 in San Antonio, Texas. The scientist signatories are experts on the health effects and environmental fate

[High heavy metal levels in toys, lipsticks](#)

Children's toys and lipsticks are at the centre of a Ministry of Consumer Affairs investigation which has found a toy that contains lead 314 times over the allowable limit. Auckland New Zealand Herald (16/12/10)

[Poison sold to poor](#)

A University of Cape Town researcher has urged the city to clamp down hard on street vendors who sell poisons on the side of the road in unmarked juice containers and brandy bottles. Johannesburg Sowetan (13/12/10)

[The Bad Daddy Factor](#)

Drinking, smoking, taking prescription meds or failing to eat a balanced diet can influence the health of men's future children. A critical mass of research demonstrates that environmental exposures – from paints to pesticides – can cause men to father children with all sorts of abnormalities. Miller- McCune (10/12/10)

[Incense burning tied to asthma risk in some kids](#)

Children from homes with regular incense burning have a higher risk of developing asthma, according to a Taiwanese study that hints a particular gene variant could be involved. Reuters Health (9/12/10)

[Beyond peanut butter](#)

Schools looking to ban cell phones may have a new excuse: A growing number of people are developing an allergy to

of BFRs and CFRs and environmental contaminants in general. The International Panel on Chemical Pollution (IPCP), an international network of scientists working on various aspects of chemical pollution, also has approved the statement. The San Antonio Statement represents a reasoned plea from the scientific community to consider the impacts of our use of BFRs and CFRs both for now and for the future.

Environmental Health Perspectives - Editorial

[Exposure to Polyfluoroalkyl Chemicals and Attention Deficit/Hyperactivity Disorder in U.S. Children 12–15 Years of Age](#)

Humans are widely exposed to polyfluoroalkyl chemicals (PFCs), and results of experimental studies on animals suggest that PFCs may be developmental neurotoxicants. The authors used cross-sectional data from the National Health and Nutrition Examination Survey (NHANES) to estimate associations between serum levels of four PFCs [perfluorooctane sulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), and perfluorohexane sulfonic acid (PFHxS)] and attention deficit/hyperactivity disorder (ADHD) in 571 children 12–15 years of age, including 48 children with a previous diagnosis of ADHD. The authors report that serum levels of all four PFCs were positively associated with ADHD, and recommend additional studies to confirm these associations.

Environmental Health Perspectives

[Organophosphate Pesticide Exposure and Attention in Young Mexican-American Children: The CHAMACOS Study](#)

Organophosphate (OP) pesticides are well-known neurotoxicants that have been associated with neurobehavioral deficits in children. The authors evaluated attention-related outcomes among Mexican-American children participating in the CHAMACOS

metal in the devices. Newsweek (9/12/10)

[Dirty money 2: Expect traces of BPA](#)

A fourth small study since June has pointed to an apparent widespread presence of hormone-mimicking bisphenol A in cash-register receipts. Like a Swiss paper last July, the new study found that the potentially toxic chemical can rub off of receipts and onto our fingers. Science News (9/12/10)

[Pollution levels unsafe across Beirut - study](#)

Pollution at indoor and outdoor spaces in the capital has reached alarmingly high levels, a research study conducted by the American University of Beirut (AUB) warned. Beirut Daily Star. (9/12/10)

[Lead in Most U.S. Tree Lights Poses Hazard for Kids, Group Says](#)

Fifty-four percent of holiday lights tested in a U.S. study had more lead than regulators permit in children's products, with some strands containing more than 30 times those levels. Bloomberg News (8/12/10)

[Radiation Rules Differ for Humans and Pets](#)

The release time for pets given a radioactive drug that makes the patients a potential hazard to children or pregnant women for several days is much longer than that of humans given much larger doses of radiation. New York Times (8/12/10)

study (331 children 3.5 years and 323 children 5 years of age), and measured urinary dialkyl phosphate (DAP) metabolites in the children and in their mothers during pregnancy to determine OP exposure. The authors report that prenatal DAP levels were positively but not significantly associated with maternal reports of attention problems or attention deficit/hyperactivity disorder (ADHD) at 3.5 years, and were significantly associated with these outcomes at 5 years. Some associations appeared to be modified by sex, with associations found only among boys. There was also limited evidence of associations between the outcomes and DAP levels measured in the children. The authors conclude that in utero DAPs and, to a lesser extent, DAPs in children, were associated adversely with attention.

Environmental Health Perspectives

[PON1 and Neurodevelopment in Children from the CHAMACOS Study Exposed to Organophosphate Pesticides in Utero](#)

Maternal urinary concentrations of dialkyl phosphate (DAP) metabolites, a marker of in utero organophosphate (OP) pesticide exposure, were previously associated with poorer mental development and maternally reported symptoms consistent with pervasive developmental disorder (PDD) among 2-year-old children in the CHAMACOS study. The authors extended this research by examining modification of these association by paraoxonase 1 (PON1), an enzyme that detoxifies oxon derivatives of OP pesticides. The authors report that children with the PON1-108T allele had poorer Bayley Mental Development Index scores and somewhat poorer Psychomotor Developmental Index scores, and that children were less likely to display symptoms of PDD when they or their mothers had higher PON1 activity. However, interactions between DAPs and PON1

[Behaviour problems in children linked to mothers' mobile use](#)

Regular use of mobile phones in pregnancy could increase the chance of youngsters developing behavioural problems, new research suggests. *Edinburgh Scotsman* (7/12/10)

[Wake up to contraband tobacco](#)

Illegal cigarettes boost criminal activity and hurt legitimate store owners, but most importantly, they harm youth. *The Vancouver Sun* (6/12/10)

[Moms' smoking in pregnancy tied to girls' puberty](#)

Women who smoke heavily during pregnancy tend to have daughters who start menstruating months earlier than the daughters of women who didn't smoke while pregnant. The trend was equally true in mothers who smoked for some of their pregnancy, but quit part of the way through. *Reuters* (3/12/10)

[Air Pollution Tied To Babies' Ear Infection Risk](#)

Babies and toddlers who live in areas with moderate air pollution may have a higher risk of middle-ear infection than those breathing cleaner air. *Pittsburgh Post-Chronicle* (3/12/10)

[Living near a major road tied to preterm birth](#)

Pregnant women who live near busy roads may be at a greater risk for delivering before term, suggests a new study from Japan. *Reuters Health* (1/12/10)

polymorphisms or activity were not statistically significant, and the authors conclude that additional research is needed to confirm whether PON1 modifies associations between in utero OP exposure and neurodevelopment.

Environmental Health Perspectives

Reproductive Health

[Association between Lead and Cadmium and Reproductive Hormones](#)

Lead (Pb) and cadmium (Cd) are reproductive toxicants that may disrupt hormone production if exposure occurs during critical windows of development. The authors examined associations between blood Pb and urinary Cd concentrations and serum luteinizing hormone and inhibin B levels in 705 girls 10–11 years of age in the Third National Health and Nutrition Examination Survey (NHANES 1988–1994). Blood Pb was relatively low in the population overall, but concentrations were inversely associated with inhibin B, a marker of pubertal onset, with stronger associations when urinary Cd was also increased. Based on their findings, the authors conclude that Pb and Cd may delay the onset of puberty or alter its progression in young girls.

Environmental Health Perspectives

[Mother or nothing: the agony of infertility](#)

Many infertile women in developing countries consider that, without children, their lives are without hope. Weiyuan Cui reports on the burden many of these women carry and the lack of affordable care.

Bulletin of the World Health Organization

UPCOMING EVENTS

[6th World Environmental Education Congress](#)

19 – 23 July 2011. Brisbane, Queensland, Australia

[Toothpaste chemical 'that can leave unborn babies brain damaged'](#)

Scientists fear pregnant women who are exposed to high levels of the chemical, called triclosan, may be putting their babies at risk. London Daily Mail (1/12/10)

[What implication has Bisphenol A for Botswana babies?](#)

It is disturbing that while some US companies have banned Bisphenol A at home, they continue to sell products containing it in other unsuspecting countries. The Botswana Gazette (1/12/10)

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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 with the subject line "INFORMATION FOR HECANET".

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