Children’s Environmental Health International Initiatives

This is an international mailing list provided by WHO and UNEP dedicated to promoting healthy environments for children

March/April 2023

75 Years of Improving of Improving Public Health – World Health Day
On 7 April 2023 – World Health Day – the World Health Organization observed its 75th anniversary. In 1948, countries of the world came together and founded WHO to promote health, keep the world safe and serve the vulnerable – so everyone, everywhere can attain the highest level of health and well-being. WHO’s 75th anniversary year is an opportunity to look back at public health successes that have improved quality of life during the last seven decades. It is also an opportunity to motivate action to tackle the health challenges of today – and tomorrow. Join WHO on a journey to achieve Health For All. WHO (04/2023)

Journal Articles
Maternal exposure to housing renovation during the periconceptional period and the risk of offspring with isolated congenital heart disease: a case-control study
The aim of this research was to examine the association between maternal housing renovation exposure during the periconceptional period and isolated congenital heart disease (CHD) in their offspring. A multi-hospital case-control study was conducted from six tertiary A hospitals in Xi’an, Shaanxi, Northwest China based on questionnaires and interviews. Cases included fetuses or newborns diagnosed with CHD. Controls consisted of healthy newborns without birth defects. In total, 587 cases and 1180 controls were enrolled. After adjusting for potential confounding variables, it was found that maternal exposure to home improvement projects

Global Forum for Adolescents Partner Engagement Kit
The WHO is proud to share the Global Forum for Adolescents Partner Engagement Kit. This engaging online resource is designed to enable all WHO and PMNCH (Partnership for Maternal, Newborn, and Child Health) partners to engage in the Global Forum for Adolescents by highlighting key opportunities for engagement. These include:
- Mobilizing for commitments
- Helping young people spread the word through the ‘What Young People Want’ campaign
- Applying for a session at the Global Virtual Programme on 11 – 12 October
- Hosting a local / national / regional events
- Activating social media channels for maximum impact

WHO (03/2023)

Reports
The Minderoo-Monaco Commission on Plastics and Human Health
The potential impact of plastics on human health has become an increasing concern, including for WHO, and most recently through the Minderoo-Monaco Commission on Plastics and Human Health. In 2019, and following a preliminary review of microplastics in drinking water, WHO already had issued a call for research and a crackdown on plastic pollution. At the time, WHO urgently stated that more knowledge needed to be generated about the health impact of microplastics and consequently called for a stop in the rise in plastic pollution worldwide. WHO recognizes that plastics play an important role in health care, but also that the health sector can
was associated with a higher probability of isolated CHD in offspring.

*Environmental Health*

**The exposome approach to study children's health**

The exposome represents an interdisciplinary science and promising field of research that can identify how multiple facets of the environment influence health across the lifespan. A particular sensitive and critical window for environmental exposures and exposure-associated health is during early life, especially childhood. Previous studies of the exposome during childhood are highlighted, including the external and internal exposome. Challenges, and potential ways to overcome them, of the childhood exposome are presented with the aims to improve exposome studies during early life.

*Current opinion in Environmental Science & Health*

**Air Pollution**

*Affective disorder and brain alterations in children and adolescents exposed to outdoor air pollution*

Childhood and adolescence are critical periods for the development of the brain. The authors performed a comprehensive review of the existing research on the associations between outdoor air pollution and affective disorders, suicidality, and the evidence for brain changes in youth. The found that outdoor air pollution is associated with increased risks of affective disorders and suicide in youth, and there is evidence for associated structural and functional brain abnormalities. Future studies should determine the specific effects of each air pollutant, the critical exposure levels, and population susceptibility.

*Journal of Affective Disorders*

**Prenatal and early-life exposure to traffic-related air pollution and allergic rhinitis in children: A systematic literature review**

Traffic-related air pollution (TRAP) is hypothesised to play a role in the development of allergic rhinitis (AR). Prenatal and early-life exposure to traffic-related air pollution is considered critical for later respiratory health. The authors systematically reviewed the risk of prenatal and early-life exposure to traffic-related air pollution for allergic rhinitis in children. The exposure assessment indicators included PM$_{2.5}$, PM$_{2.5}$ absorbance, PM$_{10}$, NO$_x$, CO, and black carbon. The results show that exposure to TRAP and should do more to reduce plastic pollution and encourage sustainable consumption, and that doing so will promote and protect both human health and the environment, contributing to sustainable development. With this Commission supporting the world’s adoption of a strong, comprehensive Global Plastics Treaty, it will be essential that Treaty negotiators consider protection of human health to be an essential element of any sustainable approach to address plastic pollution. It will also be important to understand that approaches to addressing plastic pollution should be modified as scientific knowledge of risk develops and that addressing this issue does not create new problems. WHO, together with the health sector, will continue to take action to beat plastic pollution.

*Annals of Global Health Special Report (21/03/2023)*

**Health and climate change: country profile 2022: Türkiye**

This WHO/EURO UNFCCC health and climate change country profile for Türkiye provides a summary of available evidence on climate hazards, health vulnerabilities, health impacts and progress to date in health sector efforts to realize a climate-resilient health system. The WHO and UNFCCC Health and Climate Change Country Profile Project monitors the health impacts of climate change and progress in building climate resilient health systems. By publishing updated country profiles every four years, the project not only provides a snapshot on a range of national health and climate change indicators, but also creates a mechanism to track climate-related health impacts and responses over time.

*WHO/UNFCC (15/12/2022)*

**Press Releases**

*New study finds that 43,000 “excess deaths” may have occurred in 2022 from the drought in Somalia*

A new report released today by the Federal Ministry of Health & Human Services, WHO and UNICEF suggests that an estimated 43,000 excess deaths might have occurred in 2022 in Somalia resulting from a deepening drought when compared with 2017 and 2018 drought crisis. Half of these deaths might have occurred among children under the age of 5. The findings of the report were released by the Minister of Health of the Federal Government of Somalia, Dr Ali Hadji Adam Abubakar, in the presence of Mr Adam
during pregnancy and the first year of life were positively associated with the development of AR in children.

**PLoS ONE**

**Widespread Clean Cooking Fuel Scale-Up and under-5 Lower Respiratory Infection Mortality: An Ecological Analysis in Ecuador, 1990–2019**

Nationwide household transitions to the use of clean-burning cooking fuels are a promising pathway to reducing under-5 lower respiratory infection (LRI) mortality, the leading cause of child mortality globally, but such transitions are rare and evidence supporting an association between increased clean fuel use and improved health is limited. Here the authors investigate the association between increased primary clean cooking fuel use and under-5 LRI mortality in Ecuador between 1990 and 2019. Over the time period, the proportion of households primarily using a clean cooking fuel increased from 59% to 95%, and under-5 LRI mortality fell from 28 to 7 per 100,000 under-5 population. This data shows the importance of switching to clean cooking fuel.

**Environmental Health Perspectives**

**Noise and Light Pollution**

**Outdoor Artificial Light at Night and Attention-Deficit/Hyperactivity Disorder Symptoms Among Chinese Children**

Concerns have been raised regarding harmful impact of artificial light at night (ALAN) on mental health, but the associations between outdoor ALAN exposure and attention-deficit/hyperactivity disorder (ADHD) symptoms are unclear. The authors studied 105,172 children aged 6 to 12 years from primary schools in China. ADHD was evaluated by questionnaire. Outdoor ALAN exposure was obtained from satellite imagery data. The results show that participants in higher quartiles of outdoor ALAN exposure had higher odds of having ADHD symptoms. This associations was stronger in girls. The findings highlight the potential health hazard of outdoor light pollution on mental health.

**The Lancet**

**Longitudinal effects of environmental noise and air pollution exposure on autism spectrum disorder and attention-deficit/hyperactivity disorder during adolescence and early adulthood: The TRAILS study**

The purpose of this study is to examine the longitudinal effects of ambient noise and air pollution during pregnancy and the first year of life were positively associated with the development of AR in children.

**In the Media**

**Extreme climate events fuel cholera outbreaks in Mozambique, Madagascar: WHO**

In February 2023, over 389,300 people — 226,000 in Madagascar and over 163,300 in Mozambique — were affected by heavy rainfall and floods led by Tropical Storm Freddy. The extreme climate events have triggered cholera outbreaks in the two countries that are among the 12 African nations currently reporting a surge in the outbreak of the waterborne disease. Dr Matshidiso Moeti, World Health Organization's regional director for Africa, issued a statement March 2, 2023: “The ongoing cholera outbreaks in Africa are being exacerbated by extreme climatic events and conflicts that have increased vulnerabilities, as people are forced to flee their homes and grapple with precarious living conditions,” she said.

**DowntoEarth (06/03/2023)**

**Bangladesh Needs Urgent Actions to Curb Air Pollution**

South Asia is home to 9 of the world’s 10 cities with the worst air pollution, including Dhaka. In Bangladesh, air pollution is responsible for about
pollutants on (Autism Spectrum Disorder) ASD and (Attention-Deficit/Hyperactivity Disorder) ADHD symptom severity during adolescence and early adulthood. The authors included 2750 children between 10 and 12 years in the Netherlands. ASD and ADHD were measured by questionnaire. Ambient noise and air pollution exposures were modeled at the residential level according to standardized protocols. The authors evidence that higher levels of exposure to PM were associated with more severe ASD and ADHD symptoms. This association decreased over time. No other consistent associations of noise or other air pollutants with ASD and ADHD severity were observed.

Environmental Research

Chemicals/Pesticides
Emissions of Formamide and Ammonia from Foam Mats: Online Measurement Based on Dopant-Assisted Photoionization TOFMS and Assessment of Their Exposure for Children
Formamide has been classified as a Class 1B reproductive toxicant to children by the European Union (EU) Chemicals Agency. Here the authors assessed the exposure risk of formamide and ammonia from foam mats to children. High levels of formamide and ammonia emissions were measured from 21 foam mats. The 28 day emission testing for the selected PE mat showed that the emissions of formamide were 2 orders of magnitude higher than the EU emission limit of 20 μg/m³, and formamide may be a permanent indoor contaminant for foam mats during their life cycle. The exposure assessment of children aged 0.5–6 years showed that the exposure dose was approximately hundreds of mg/kg-day, and the age group of 0.5–2 years was subject to much higher dermal exposures than others.

Environment Science & Technology

Emerging and Legacy Perfluoroalkyl Substances in Breastfed Chinese Infants: Renal Clearance, Body Burden, and Implications
The authors evaluated levels of emerging and legacy PFAS in human milk and urine samples from Chinese breastfed infants. Milk samples were collected from 1,151 lactating mothers in 21 cities. Nine emerging PFAS and 13 legacy PFAS were analyzed. The estimated daily intake (EDI) values of two PFASs exceeded the reference dose recommended by the U.S. Environmental Protection Agency in 78% and 17% of breastfed infant samples, respectively. The relatively high 20 percent of the total premature deaths. A new World Bank report shows that there are economically feasible, cost-effective solutions to achieve clean air in the region, but this requires countries to coordinate policies and investments. Concentrations of fine particulate matter in some of the region’s most densely populated and poor areas are up to 20 times higher than WHO standard (5 μg/m³). In South Asia, it causes an estimated 2 million premature deaths each year. Exposure to such extreme air pollution has impacts ranging from stunting and reduced cognitive development in children, to respiratory infections and chronic and debilitating diseases. The World Bank (28/03/2023)

Thailand's extreme air pollution: 'I feel sorry for my daughter'
For the past few weeks, Thommamoon Khowasat has painstakingly explained to his four-year-old daughter that the yellow cloud they see outside their window - which has tickled her imagination - is actually a danger to her health. It's a scare that has gripped northern Thailand where millions of people are currently finding it harder to breathe. "I feel very sorry for my daughter," said Thommamoon. Thailand's air pollution is an issue year each year in the dry season - which typically runs from November to March - mainly due to seasonal burning from farmers clearing their sugarcane and rice fields. But the smog has been particularly bad this year. Thai health authorities reported that in the first nine weeks of the year, more than 1.3 million people had already suffered air pollution-related diseases.

BBC News (30/03/2023)

Waterborne diseases surge among Vanuatu children after cyclones
A month after Cyclones Judy and Kevin spread devastation and flooding across the islands of Vanuatu in the southwest Pacific, water-borne diseases are escalating among children in the capital, Port Vila, and in rural communities. Hospitals and health facilities are struggling to cope with the surge in cases as they continue to repair the damage caused to their facilities by the storms. "Prior to the cyclone, we were experiencing a surge of acute gastroenteritis. That was two weeks prior to the cyclone. After the cyclone, the numbers just shot up and increased." Dr Orelly Thyna, head of paediatrics in Vanuatu and chairwoman of Port Vila Central Hospital's emergency operating centre, told Al Jazeera.

Al Jazeera (04/04/2023)
EDIs and half-lives of emerging PFAS suggest potential health risks of postnatal exposure in newborns.

Environmental Health Perspectives

Networks of placental DNA methylation correlate with maternal serum PCB concentrations and child neurodevelopment

Gestational exposure to polychlorinated biphenyls (PCBs) has been associated with elevated risk for neurodevelopmental disorders. The authors aimed to identify placental DNA methylation patterns associated with maternal PCB levels and child neurodevelopmental outcomes in a high-risk ASD cohort. They measured 209 PCB congeners in 104 maternal serum samples collected at delivery. They identified networks of DNA methylation from 147 placenta samples. They tested placental DNA methylation modules for association with maternal serum PCB levels, child neurodevelopment, and other participant traits. Placental DNA co-methylation modules were associated with maternal PCBs and child neurodevelopment. Methylation of CSMD1 and AUTS2 could be markers of altered placental function and/or ASD risk following maternal PCB exposure.

Environmental Research

Heavy Metals/Trace Elements

Heavy metals concentration in food crops irrigated with pesticides and their associated human health risks in Paki, Kaduna State, Nigeria

In Paki, Nigeria, this study investigated the health dangers linked with consuming contaminated crops fumigated with pesticides containing metals and grown from borehole water sources. The amounts of heavy metals (Cd, Pb, Cr, Cu, and Zn) in the root, stem, leaf, and fruit of selected food crops and soil was evaluated. The levels of cadmium and lead in all of the studied food crops were above the acceptable limit. The combined multiple effects of the studied metals indicated that children will experience severe non-cancer health risks through the intake of most of the studied crops.

Cogent Food & Agriculture

Pregnancy/Reproduction

Prenatal ambient air pollutants exposure and the risk of stillbirth in Wuhan, central of China

The authors aimed to determine the relationships between exposure to ambient air pollutants and

Moves to crystallise right to a healthy environment spark tension at UN

The UN Human Rights Council has encouraged governments to adopt policies and an effective legal framework to implement the right to a healthy environment, a resolution that sparked tensions between proponent countries and the US. The resolution was passed, led by Costa Rica, the Maldives, Morocco, Slovenia, and Switzerland, and reaffirms the human right to a clean, healthy and sustainable environment and called on states to protect environmental defenders trying to uphold it. It also calls on UN treaty bodies to promote its implementation. John Knox, professor of international law at Wake Forest University School of Law and the UN’s former special rapporteur on human rights and the environment, said it marks a turning point from recognising the right “to actually starting to take steps to implement it”.

Climate Home News (04/04/2023)

Air pollution levels across Europe still not safe, especially for children

More needs to be done to protect the health of children and adolescents from the negative impacts of air pollution, according to the recently published European Environment Agency (EEA) air quality assessments. Air pollution causes over 1,200 premature deaths per year in people under the age of 18 in Europe and significantly increases the risk of disease later in life. Despite improvements over past years, the level of key air pollutants in many European countries remain stubbornly above World Health Organization health-based guidelines, especially in central-eastern Europe and Italy.

European Environment Agency (23/04/2023)

UK health expert raises alarm at vaping ‘epidemic’ among teenagers

One of the UK’s leading respiratory doctors has raised the alarm about the exploding popularity of vaping among teenagers, saying that without urgent regulation a generation could end up with long-term addictions and lung damage. Dr Mike McKean, vice-president of policy for the Royal College of Paediatricians and Child Health, said vaping was becoming an “epidemic” among teenagers even though it is illegal before the age of 18. If its rapid growth maintains the same trajectory, almost all children will vape within five years, he said. He estimated that prevalence could now be as high as 15%, after NHS
stillbirth in a population-based cohort in Wuhan, China. Personal exposure concentrations of fine particles (PM$_{2.5}$), inhalable particles (PM$_{10}$), sulfur dioxide (SO$_2$), nitrogen dioxide (NO$_2$), carbon monoxide (CO), and ozone (O$_3$) for mothers were estimated based on their residential address during pregnancy. The authors found that maternal exposure to PM$_{2.5}$, PM$_{10}$, SO$_2$, CO, and O$_3$ were related to the increased risk of stillbirth. Both the second and third trimesters might be vital susceptible windows for stillbirth.

*Environmental Research*

**Climate Change**

*Temperature and mental health–related emergency department and hospital encounters among children, adolescents and young adults*

The authors examine the association between high ambient temperature and acute mental health-related healthcare encounters in New York City for children (6-11), adolescents (12-17) and young adults (18-25). The study included emergency department (ED) visits and hospital encounters with a primary diagnosis of any mental health disorder during warm-season months. Elevated temperature days were associated with higher risk of mental health–related ED and hospital encounters for all age groups. Children with reaction disorders, adolescents with anxiety and bipolar disorders, young adults with psychosis and reaction disorders and Black and non-Hispanic children and adolescents showed vulnerability to elevated temperature.

*Epidemiology and Psychiatric Sciences*

**Conferences/Meetings**

**35th Annual International Society for Environmental Epidemiology (ISEE) Conference in Kaohsiung, Taiwan**

September 17-21, 2023

**11th International Conference on Children’s Health and the Environment**

October 27-27th, 2023

Tashkent, Uzbekistan

**Newsletters**

*Children’s Environmental Health Network (CEHN) Newsletter*

In the United States, the Protect America's Children from Toxic Pesticides Act (PACTPA) was reintroduced in the senate. The bill would update the Federal Insecticide, Fungicide and Rodenticide Act by banning highly dangerous pesticides that have been scientifically proven to harm the safety of people (especially children) and the environment. It would provide significant protections for communities that bear the brunt of pesticide exposure.

CEHN (30/03/23)

**Links to past issues and how to subscribe**

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