INTERNATIONAL LEAD POISONING PREVENTION WEEK 2021
The ninth International Lead Poisoning Prevention Week (ILPPW) takes place on 24–30 October 2021. This week of action is an initiative of the Global Alliance to Eliminate Lead Paint (the Lead Paint Alliance), which is jointly led by the UN Environment Programme and WHO. The manufacture and sale of lead paint is still permitted in over 55% of countries, presenting a continuing and future source of lead exposure for children and workers. The focus of this year’s week of action is on the need to accelerate progress towards the global phase out of lead paint through regulatory and legal measures. Governments, civil society organizations, health partners, industry and others are encouraged to organize campaigns during the week of action using materials provided on this webpage.
WHO (10/2021)

WHO Air Quality Guidelines
Clean air is fundamental to health. Compared to 15 years ago, when the previous edition of these guidelines was published, there is now a much stronger body of evidence to show how air pollution affects different aspects of health at even lower concentrations than previously understood. But here’s what hasn’t changed: every year, exposure to air pollution is still estimated to cause millions of deaths and the loss of healthy years of life. The burden of disease attributable to air pollution is now estimated to be on a par with other major global health risks such as unhealthy diets and tobacco smoking. The global nature of the challenge calls for an enhanced global response.
WHO (22/09/2021)

CHILDREN’S ENVIRONMENTAL HEALTH NEWS

Press Releases
WHO: Global health community prescribes climate action for COVID recovery
Based on a growing body of research confirming numerous and inseparable links between climate and health, the World Health Organization’s (WHO) COP26 Special Report on Climate Change and Health spells out that transformational action in every sector, from energy, transport and nature to food systems and finance is needed to protect people. “The COVID-19 pandemic has shone a light on the intimate and delicate links between humans, animals and our environment”, said WHO chief Tedros Adhanom Ghebreyesus. “The same unsustainable choices that are killing our planet are killing people”.
WHO (11/10/2021)

Access to a healthy environment, declared a human right by UN rights council
The Human Rights Council recognised, for the first time, that having a clean, healthy and sustainable environment is a human right. In resolution 48/13, the Council called on States around the world to work together, and with other partners, to implement this newly recognised right. In a statement, UN High Commissioner for Human Rights, Michelle Bachelet, called on Member States to take bold actions to give prompt and real effect to the right to a healthy environment. Ms. Bachelet said that, having long called for such a step, she was “gratified” that the decision “clearly recognises environmental degradation and climate change as interconnected human rights crises.”
UN News (08/10/2021)

JOURNAL ARTICLES

Pollutants and Child Health

UN Report: Our Common Agenda
Early life multiple exposures and child cognitive function: A multi-centric birth cohort study in six European countries

Epidemiological studies mostly focus on single environmental exposures. This study aimed to systematically assess associations between a wide range of prenatal and childhood environmental exposures and cognition. The study sample included data of 1298 mother-child pairs, children were 6–11 years-old, from six European birth cohorts. The authors measured 87 exposures during pregnancy and 122 cross-sectionally during childhood, including air pollution, built environment, meteorology, natural spaces, traffic, noise, chemicals and life styles. The results suggest that unfavourable child nutrition, family crowdedness and child indoor air pollution and ETS exposures adversely and cross-sectionally associate with cognitive function.

Environmental Pollution

Single and mixed effects of metallic elements in maternal serum during pregnancy on risk for fetal neural tube defects: A Bayesian kernel regression approach

Studies of the association between prenatal exposure to metal elements and risk for neural tube defects (NTDs) have produced inconsistent results. This study examined 273 women with NTD-affected pregnancies and 477 controls. Cadmium, cobalt, chromium, copper, iron, mercury, manganese, molybdenum, lead, and zinc were quantified in maternal serum. NTD risk increased with the concentration of the mixture of the 10 elements. NTD risk increased with concentrations of the five toxic elements, with lead and manganese being the major contributors. Essential elements showed protective effects against NTD risk.

Environmental Pollution

Air Pollution

Particular matter influences the incidence of acute otitis media in children

Studies on the relationship between AOM in children and PM are rare and their results are inconsistent. This study investigated the effect of PM on AOM in children on the basis of the Korea National Health Insurance service (NHIS) claims data. With an increase in PM$_{2.5}$ of 10 µg/m$^3$, the relative risk of OM increased by 4.5% in children under 2 years of age. Regardless of PM size and children’s age, the PM levels are positively related to the incidence of AOM. Both PM$_{2.5}$ and

Our Common Agenda is the UN Secretary-General’s new report presenting concrete proposals for how we can all work together and create a future that’s better for everyone. While the report covers a wide range of recommendations designed to strengthen and accelerate multilateral agreements, one of the core recommendations focuses explicitly on the need to deepen solidarity with the world’s young people and future generations.

UN (10/09/2021)

Compendium of WHO and other UN guidance on health and environment

The World Health Organization (WHO) and other United Nations (UN) organizations have published extensive guidance on a range of essential health topics over the years, specifically addressing disease, environmental pollutants, children’s health, among many other topics. To date, however, there has been no systematic compilation of this guidance for policy-makers and decision-makers, which makes it difficult to get an overview of options available, and to determine where linkages exist between sectors and levels of government. This compendium seeks to address these gaps by providing a systematic compilation of published guidance from WHO and other UN organizations on all major areas of health and the environment. This guidance also includes information about ways to raise awareness and advocate among the public and policy-makers, in addition to information about interventions to build and enhance capacity among various stakeholders.

WHO (2021)

UN: Improving air quality ‘key’ to confronting global environmental crises

With environmental events becoming increasingly interconnected, a new global report on air pollution published by the UN Environment Programme (UNEP) underscores that improved air quality is “key to tackling the triple planetary crisis of climate change, biodiversity loss, and pollution and waste”. This report highlights legal measures, progress made to date, and action needed to address air quality issues.

UN (02/09/2021)

Eating wild meat significantly increases zoonotic disease risk: UN report

The domestic consumption of meat from wild animals has significant impacts on most species protected under the Convention on the
PM$_{10}$ have the most adverse effects on children under 2 years of age and on the day of exposure. *Nature*

**Proximity to coal-fired power plants and neurobehavioral symptoms in children**

Coal-fired power plants are a major source of air pollution that can impact children’s health. This study collected primary data to investigate the relationships of residential proximity to power plants and neurobehavioral problems in children. Results suggest an adverse impact of proximity to power plants on children’s neurobehavioral health. Although coal-fired power plants are being phased out in the US, health concern about exposure from coal ash storage facilities remains. Furthermore, other countries in the world are increasing coal use and generating millions of tons of pollutants and coal ash. *Journal of Exposure Science & Environmental Epidemiology*

**Ambient air pollution and inflammatory effects in a Canadian pregnancy cohort**

Epidemiologic studies have consistently reported associations between air pollution and pregnancy outcomes including preeclampsia and gestational diabetes. The authors examined relationships between ambient PM$_{2.5}$ and NO$_2$ with markers of inflammation during pregnancy in a prospective cohort of Canadian women. They found that exposure to ambient PM$_{2.5}$ is positively associated with maternal inflammatory pathways in late pregnancy. This may contribute to positive associations between ambient PM$_{2.5}$ and risk of adverse pregnancy outcomes. *Environmental Epidemiology*

**Chemicals**

**Exposure to per- and polyfluoroalkyl substances associates with an altered lipid composition of breast milk**

Environmental factors are suspected to impact breast milk composition. The authors sought to (1) define the impact of maternal exposure to per- and polyfluoroalkyl substances (PFAS) on lipid composition of human breast milk, and (2) to study the impact of maternal PFAS on the growth of the infants. PFAS levels were inversely associated with total lipid levels in the breast milk collected after the delivery. These changes in the milk lipid composition were associated with slower infant growth and with elevated intestinal inflammatory markers. Our data suggest that the maternal Conservation of Migratory Species of Wild Animals (CMS), says a new report, including increasing the risk of diseases spreading from animals to humans. According to the study, 70% of mammal species protected under the CMS are used for wild meat consumption. This has led to drastic declines, and also the extinction of several migratory mammal populations. According to the report, there is strong evidence that zoonotic disease outbreaks are linked to human activities, as is strongly believed by many scientists in the case of the current COVID-19 pandemic. UN (15/09/2021)

**In the Media**

**The right to a clean and healthy environment: 6 things you need to know**

For the first time ever, the United Nations body whose mission is to promote and protect human rights around the world, passed a resolution recognising access to a healthy and sustainable environment as a universal right. The text also calls on countries to work together, and with other partners, to implement this breakthrough. 43 votes in favour and 4 abstentions counted as a unanimous victory to pass the text that cites the efforts of at least 1,100 civil society, child, youth and indigenous people’s organizations, who have been campaigning for global recognition, implementation and protection of the human right to a safe, clean, healthy and sustainable environment. UN News (15/10/2021)

**Air pollution is slashing years off the lives of billions, report finds**

Air pollution is cutting short the lives of billions of people by up to six years, according to a new report, making it a far greater killer than smoking, car crashes or HIV/Aids. Coal burning is the principal culprit, the researchers said, and India is worst affected, with the average citizen dying six years early. China has slashed air pollution in the last seven years, but dirty air is still cutting 2.6 years from its people’s lifespan. "Air pollution is the greatest external threat to human health on the planet, and that is not widely recognised, or not recognised with the force and vigour that one might expect," said Prof Michael Greenstone at the University of Chicago. The Guardian (01/09/2021)
exposure to PFAS impacts the nutritional quality of the breast milk, which, in turn, may have detrimental impact on the health and growth of the children later in life.

*Environment International*

**Maternal levels of perfluoroalkyl substances (PFAS) during early pregnancy in relation to preeclampsia subtypes and biomarkers of Preeclampsia risk**

The authors examined associations between PFAS, any preeclampsia diagnosis, and early- and late-onset preeclampsia. Maternal PFAS concentrations were associated with higher odds of late-onset preeclampsia. Heterogeneity of preeclampsia should be considered in future studies because populations may have different distributions of disease subtypes.

*Environmental Health Perspectives*

**Fires**

**Associations between exposure to landscape fire smoke and child mortality in low-income and middle-income countries: a matched case-control study**

The prevalence of landscape fires has increased, particularly in low-income and middle-income countries (LMICs). The authors assessed the impact of exposure to landscape fire smoke (LFS) on the health of children. They found that each 1 µg/m³ increment of fire-sourced PM$_{2.5}$ was associated with a 2.31% increased risk of child mortality. They estimated that between 2000 and 2014, the five countries with the largest number of child deaths associated with fire-sourced PM$_{2.5}$ were Nigeria (~164,000 annual deaths), Democratic Republic of the Congo (~126,000 annual deaths), India (~65,900 annual deaths), Uganda (~30,200 annual deaths), and Indonesia (~28,900). Exposure to landscape fire smoke contributes substantially to the global burden of child mortality.

**Reproductive Health**

**Cumulative risk assessment of phthalates exposure for recurrent pregnancy loss in reproductive-aged women population using multiple hazard indices approaches**

The authors evaluated the impact of phthalates of the female reproductive system. They recruited 260 patients with recurrent pregnancy loss (RPL) of unknown etiology and 203 controls from the clinics of Obstetrics and Gynecology at a medical center.

*UN hails end of poisonous leaded gas use in cars worldwide*

Leaded gasoline has finally reached the end of the road, the U.N. environment office said Monday, after the last country in the world halted the sale of the highly toxic fuel. Algeria stopped providing leaded gas last month, prompting the U.N. Environment Agency to declare the "official end" of its use in cars, which has been blamed for a wide range of human health problems.

The Associated Press (30/08/2021)

**Air pollution may reduce life expectancy of Indians by nine years, says study**

Air pollution can reduce the life expectancy of Indians by nine years, says a report by a US research group. The study says 480 million people in northern India face the "most extreme levels of air pollution in the world". The report by The Energy Policy Institute at the University of Chicago (EPIC) says that north India breathes "pollution levels that are 10 times worse than those found anywhere else in the world". This air pollution has spread beyond the region to western and central Indian states where the average person is now losing between two and a half-to-three years of life expectancy as compared to early 2000. New data by EPIC says that residents in the capital, Delhi, could see up to 10 years added to their lives if air pollution was reduced to meet the World Health Organisation (WHO) guideline of 10 µg/m³.

BBC (01/09/2021)

**Cocktail of pesticides in almost all oranges and grapes, UK study finds**

Almost all grapes and oranges contain a “cocktail of pesticides” according to research, which has singled out the most polluted fruit and vegetables in our shopping trolleys. Each year, the government tests samples of groceries for chemicals to see if traces can be found in Britain’s food. The official figures, analysed by Pesticide Action Network (PAN), found 122 different pesticides in the 12 most polluted products, which the charity calls the “dirty dozen”. Many of these are hazardous to human health; 61% are classified as highly hazardous pesticides (HHPs), a concept used by the UN to identify those substances most harmful to human health or the environment.

The Guardian (29/09/2021)
in southern Taiwan from 2013 to 2020 and estimated daily phthalate intake from urine. The patients with RPL had a significantly higher cumulative exposure to phthalates ($p < 0.05$) than the controls. This suggests that more attention should be paid to the adverse effects induced by phthalates on female reproduction.

*Environmental International*

### Water, Sanitation and Hygiene

**Drinking water disinfection by-products and congenital malformations: a nationwide register-based prospective study**

Drinking water chlorination by-products have been associated with adverse reproductive outcomes, although the findings for congenital malformations are still inconclusive. The authors conducted a nationwide register-based prospective study to assess whether first trimester maternal exposure to the four most common trihalomethanes [total trihalomethanes (TTHM)] via municipal drinking water was associated with risk of congenital malformation among newborns. TTHM exposure was associated with the increased risk of malformations of the nervous system, urinary system, genitals, and limbs in areas exclusively using chloramine. An association between chloramine-related chlorination by-products and congenital malformations has not previously been highlighted and needs further attention.

*Environmental Health Perspectives*

### Climate Change and Children’s Health

**Pediatric societies’ declaration on responding to the impact of climate change on children**

In 2020 the International Society for Social Pediatrics and Child Health identified the need to rally pediatricians and child health professionals from around the world to address the climate crisis because of its adverse effects on child health. In response, a declaration on responding to the impact of climate change on children was drafted by the International Society for Social Pediatrics and Child Health and subsequently revised and adopted by the International Pediatric Association. This paper highlights the risks of climate change to child health and how pediatricians can advocate, educate, and take action to protect children.

*The Journal of Climate Change and Health*

### Lead contamination found in blood of half of young kids in U.S.

About half of young children who were tested for lead had detectable levels of the toxic metal in their blood, according to a new study published in the peer-reviewed journal *JAMA Pediatrics*. While most of the kids had relatively smaller amounts, about 2% had a level that is considered high. The research tracked more than 1.1 million children under the age of 6 years who underwent lead testing from October 2018 through February 2020.

*Medical Press (27/09/21)*
Knowledge of the health impacts of environmental exposures on children’s health has dramatically increased in the past 40 years. Yet, little has permeated medical education, leaving pediatric providers ill equipped to address these issues. To address this gap, members from the Pediatric Environmental Health Specialty Units, a United States nationwide network of academically affiliated experts who have created numerous environmental health educational materials and programs, have identified fifteen core environmental health (EH) competencies needed by health care providers to enable them to effectively address environmental health concerns. In this article, the authors describe the core environmental health competencies and provide resources, online tools, strategies, and examples targeted to all levels of training and practice to better enable leaders and educators to bring this important content to the forefront.

BMC Medical Education

EVENTS

2022 PPTOX VII – International Conference on Prenatal Programming and Toxicity
Virtual Meeting
January 10-13, 2022

International Society for Children’s Health and the Environment (ische) Retreat
Translation & Communication: Protecting Children from Toxic Chemicals
Hardingasete, Norway
June, 2022

E-Books
NEW A Story of Health Multimedia eBook Chapter - Sofia’s Story: Health Effects of Wildfires
The Western States Pediatric Environmental Health Specialty Unit is excited to announce the release of their newest A Story of Health multimedia eBook chapter “Sofia’s story: Health Effects of Wildfires” with a focus on children’s health and prevention strategies during wildfire smoke exposure. It is free to download here. Continuing Education (CE) credits for multiple health disciplines are pending from the CDC. More resources on how to protect health from wildfires and smoke are on the WSPEHSU website.

Newsletters
CEHN Weekly E-Digest
The Children’s Environmental Health Weekly E-Digest highlights recent major achievements in children’s environmental health, including the Childhood Cancer Prevention Report: One Year Anniversary. In this report, the Childhood Cancer Prevention Initiative (CCPI) describes increasing rates of cancer among children and adolescents that could not be due to genetics alone. The CEHN E-Digest also reports in upcoming educational webinars, policies affecting child health, conferences, events, and reports supporting children’s environmental health.

CEHN (12/2020)

Webinars
“Status and trends on lead paint laws in Latin America”
Within the framework of the GEF project on emerging SAICM issues for the region, the United Nations Environment Programme Regional Office for Latin America and the Caribbean (UNEP ROLAC) and the Pan American Health Organization (PAHO), will co-host a webinar in Spanish on the status and best regulatory practices on lead paint in Latin America, as part of the events during the International Lead Poisoning Prevention Week 2021. The webinar will take place on 26 October at 14:00 (GMT-5). The event will highlight the latest developments and results on lead paint laws in the region under the Global Alliance to Eliminate Lead Paint and present the experiences of some countries in the region with recently adopted lead paint laws or
that are in the process of drafting a lead paint law. Register here.

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Collated and distributed with the cooperation of the Children’s Environmental Health Clinic, University of Alberta, Canada
5–15, and TTHM/L. Outcomes and
covariates were obtained via the linkage to Swedish health and administrative registers. Odds ratios (ORs) and 95% confidence intervals (CIs) were estimated by logistic regression using inverse probability weighting. We stratified the analyses by chlorination treatment (chloramine, hypochlorite).

Results:

Based on approximately 500,000 births, we observed a TTHM dose-dependent association with increased risk of SGA, confined to treatment with hypochlorite, corresponding to a multivariable-
adjusted (95% CI: 1.08, 1.33)
comparing drinking water TTHM to the
unexposed. Similar results were obtained when, instead of unexposed, the lowest exposure category
(TTHM) was used as reference. No
clear associations were observed for preterm delivery and very preterm delivery.

Discussion:

Chlorination by-products exposure via drinking water was associated with increased risk of SGA in areas with hypochlorite treatment. https://doi.org/10.1289/EHP6012
having

10,000 ≤ 2
waterworks, adequate information on chlorination treatment, and a sufficient number of routine TTHM measurements in tap water. Individual maternal second and third trimester exposure was obtained by linking TTHM measurements to residential
<5<5
>15μg > 15μg
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clear associations were observed for preterm delivery and very preterm delivery.

Discussion:

Chlorination by-products exposure via drinking water was associated with increased risk of SGA in areas with hypochlorite treatment.

E-waste

Severe dioxin-like compound (DLC) contamination in e-waste recycling areas: an under-recognized threat to local health

Electrical and electronic waste (e-waste) burning and recycling activities have become one of the main emission sources of dioxin-like compounds (DLCs). Workers involved in e-waste recycling operations and residents living near e-waste recycling sites (EWRS) are exposed to high levels of DLCs. Epidemiological and experimental in vivo studies have reported a range of interconnected responses in multiple systems with DLC exposure. However, due to the compositional complexity of DLCs and difficulties in assessing mixture effects of the complex mixture of e-waste-related contaminants, there are few studies concerning human health outcomes related to DLC exposure at informal EWRS. In this paper, we have reviewed the environmental levels and body burdens of DLCs at EWRS and compared them with the levels reported to be associated with observable adverse effects to assess the health risks of DLC exposure at EWRS. In general, DLC concentrations at EWRS of many countries have been decreasing in recent years due to stricter regulations on e-waste recycling activities, but the contamination status is still severe. Comparison with available data from industrial sites and well-known highly DLC contaminated areas shows that high levels of DLCs derived from crude e-waste recycling processes lead to elevated body burdens. The DLC levels in human blood and breast milk at EWRS are higher than those reported in some epidemiological studies that are related to various health impacts. The estimated total daily intakes of DLCs for people in EWRS far exceed the WHO recommended total daily intake limit. It can be inferred that people living in EWRS with high DLC contamination have higher health risks. Therefore, more well-designed epidemiological studies are urgently needed to focus on the health effects of DLC pollution in EWRS. Continuous monitoring of
the temporal trends of DLC levels in EWRS after actions is of highest importance.

Environmental International

New Publications

Urban planning crucial for better public health in cities - A New WHO and UN-HABITAT sourcebook guides health and planning practitioners on putting health at the heart of urban and territorial planning.

As the COVID-19 pandemic continues to highlight the importance of safe distancing in cities, a new sourcebook launched by WHO and UN-Habitat provides a wealth of useful information on ensuring human health is a key consideration for city planning. The sourcebook, Integrating Health in Urban and Territorial Planning, is designed to guide decision makers from the public health, urban and territorial planning sectors including planners, city managers, health professionals and others towards developing cities planned and built with a focus on human and environmental health. Many cities face health threats linked to urban and territorial planning. Infectious diseases thrive in overcrowded cities, or where there is inadequate access to clean water, sanitation and hygiene facilities; living in unhealthy environments killed 12.6 million people in 2012 and air pollution killed 7 million people in 2016. However only 1 in 10 cities worldwide meet standards for healthy air. “If the purpose of urban planning is not for human health, then what is it for?” said Dr Maria Neira, WHO Director, Department of Environment, Climate Change and Health. “Ideally, cities are planned for adequate standards of living and working, sustained economic growth, social development, environmental sustainability, better connectivity… but the ‘why’ at the core of all these things comes down to physical and mental health and wellbeing.” “Investments in health-based urban and territorial planning secure long-term health and wellbeing legacies for a growing proportion of humans,” said Dr Nathalie Roebbel, WHO Unit Head, Air Quality and Health. Over half the world’s population now lives in cities, and by 2050 that is expected to rise to a full 70 per cent of the human population. However, 75 per cent of the infrastructure that will be in place by then has not yet been built. This presents an opportunity to build transformative urban areas, especially as the world begins to build back with a greater consciousness of the links between space and health. One essential consideration is equity as there are substantial differences in health
opportunities and outcomes within and across urban areas. The sourcebook is based on the premise that public health and urban planning both aim for fair and equitable outcomes and access to essential services.

EVENTS

2020 PPTOX-VII - International Conference on Prenatal Programming and Toxicity
Chicago, United States of America.
30 September – 3 October 2020.

The 10th International Conference on Children's Health and the Environment
Amsterdam, the Netherlands.
1 – 3 December 2020.