**Children’s Environmental Health International Initiatives**

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

**WHO: 75 Years of Improving Public Health**

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

**JOURNAL ARTICLES**

**Air Pollution**

**Secondhand smoke Infiltration in Multiunit Housing: Health Effects and Nicotine Levels**

Approximately 46% of U.S. multiunit housing residents with smoke-free homes, 29 million persons, experience secondhand smoke infiltration in their apartments. This study investigates health problems reported by 162 nonsmoking residents. Nonsmokers complained of eye, nose, throat, and lung irritation, headache, dizziness, nausea, difficulty in breathing, tachycardia, and asthmatic attacks as well as malodors. Nicotine concentrations in subjects’ apartments ranged from 0.001 to 6.60 μg/m³. Modeled PM$_{2.5}$ levels for a typical smoker’s apartment estimated air pollution levels ranging from “Very Unhealthy” to “Hazardous” levels of the U.S. Air Quality Index. Secondhand smoke infiltration from smokers’ apartments into nonsmokers’ apartment units in multiunit housing

**PRESS RELEASES**

**WHO calls for action to uphold right to health amidst inaction, injustice and crises**

To mark World Health Day (7 April), the World Health Organization (WHO) is running the “My health, my right” campaign to champion the right to health of everyone, everywhere. The campaign advocates for ensuring universal access to quality health services, education, and information, as well as safe drinking water, clean air, good nutrition, quality housing, decent working and environmental conditions, and freedom from discrimination. All around the world, the core challenges consistently compromising the right to health are political inaction coupled with a lack of accountability and funding, compounded by intolerance, discrimination and stigma. Populations facing marginalization or vulnerability suffer the most, such as people who live in poverty, are displaced, are older or live with disabilities.

WHO (05/04/2024)
can provoke major morbidity for nonsmoking residents.

**Indoor Environments**

**Prenatal Household Air Pollution Exposure and Childhood Blood Pressure in Rural Ghana**
The association between prenatal household air pollution (HAP) exposure and childhood blood pressure (BP) is unknown. Within the Ghana Randomized Air Pollution and Health Study (GRAPHES) we examined time-varying associations between a) maternal prenatal and b) first-year-of-life HAP exposure with BP at 4 years of age and, separately. GRAPHES was a cluster-randomized intervention trial wherein pregnant women were randomized to one of two stovetop interventions: a) a liquefied petroleum gas (LPG) stove or improved biomass stove, or b) control (open fire cooking). Maternal HAP exposure over pregnancy and child HAP exposure over the first year of life was measured by repeated measurements. The results suggest that prenatal and first-year-of-life HAP exposure are associated with child BP and support the need for reductions in exposure to HAP, with interventions such as cleaner cooking beginning in pregnancy.

**Environmental Health Perspectives**

**Chemicals**

**Prenatal dietary exposure to mixtures of chemicals is associated with allergy or respiratory diseases in children in the ELFE nationwide cohort**
The authors examined the association between prenatal dietary exposure to mixtures of chemicals and allergic or respiratory diseases up to age 5.5 y. They included 11,638 mother-child pairs from the French “Étude Longitudinale Française depuis l’Enfance” (ELFE) cohort. Maternal dietary exposure during pregnancy to mixtures of chemicals was previously assessed. Allergic and respiratory diseases were reported by parents between birth and age 5.5 yr. Whereas few individual chemicals were related to the risk of allergic and respiratory diseases, some associations were found between prenatal dietary exposure to some mixtures of chemicals and the risk of allergic or respiratory diseases. The positive association between trace elements, furans and PAHs and the risk of eczema, and that between pesticides mixtures and food allergy need to be confirmed in other studies.

**Environmental Health**

**Significant increase in number of children killed across Ukraine this year, as deadly attacks continue**
GENEVA/KYIV, 26 April 2024 – The verified number of children killed in attacks across Ukraine has increased by nearly 40 per cent this year compared to last, as deadly attacks continue, UNICEF warned. Attacks between 1 January and 31 March 2024 resulted in the deaths of 25 children - the youngest was just two months old. “Every attack sets back recovery and rebuilding efforts, prolonging the deterioration in children’s quality of life” said Regina De Dominicis, UNICEF Regional Director for Europe and Central Asia. “I am troubled to see that attacks across the country continue, destroying schools, health facilities and residential buildings. Nowhere is safe for children.” Attacks affecting power supplies and water sources have further disrupted critical services, putting children’s lives and well-being at further risk. UNICEF is also delivering mental health and psychosocial support including through safe spaces, protection and support hubs.

UNICEF (26/04/2024)

**In the Media**

**Is air pollution sapping your child’s concentration? New study links NO2 exposure to attention span**
Air pollution is weakening children’s attention span, a new study suggests. Exposure to nitrogen dioxide (NO2) - a pollutant largely pumped out by road traffic - is linked to poorer attention span in children aged four to eight years old. This is particularly pronounced in boys, according to the researchers at Barcelona Institute for Global Health (ISGlobal). Their study, published in the Environment International journal, adds to a growing body of evidence about the negative impact of air pollution during pregnancy and childhood on brain development.

EuroNews Green (19/04/2024)

**Plastic pollution treaty negotiations set to begin day after Earth Day in Ottawa**
It’s Earth Day on Monday, April 22, and experts from around the world will be gathering in Canada to talk about a serious threat to the planet. Plastic pollution. Experts say the staggering amount of single-use plastic waste is contributing to climate change, biodiversity loss, and health problems for humans and animals. UBC researcher Juan José Alava is an expert in marine pollution and a member of the Scientists’ Coalition for an Effective Plastics Treaty, which includes more
Prenatal exposure to pesticide mixture in Argentina: A pilot study in puerperal women from Santa Fe province

This study aimed to determine the presence of environmental xenobiotics and evaluate their genotoxic effect, in mothers of newborns with and without congenital abnormalities (CA), and the possible association/correlation between those biomarkers and CA. Postpartum women from Santa Fe, Argentina were evaluated for metabolites of organochlorine (OC), organophosphate (OP), and pyrethroid (PYR) pesticides. The most frequently detected compounds were atrazine (ATZ) (57.14%), carbandazim (CBZ) (46.42%), and methylparaben (46.42%), among others. A positive correlation was found between the number of pesticides in blood and genotoxic variables. Mothers of children with genitourinary anomalies were the ones with the highest concentrations of ATZ and OP.

Birth Defects Research

Association of early-life exposure to air and noise pollution with youth mental health: findings from the ALSPAC cohort

Little is known about the importance of early-life exposure to air pollution, nor the potential role of noise pollution, a correlate of air pollution. The authors examined the association of exposure to air and noise pollution from pregnancy to age 12 years with three mental health problems assessed at ages 12, 18, and 24 years. Data were from the Avon Longitudinal Study of Parents and Children (ALSPAC), which tracks the development of about 14 000 babies who had expected delivery dates between April 1, 1991, and Dec 31, 1992, in Avon, UK. This was linked with novel data on nitrogen dioxide, PM$_{2.5}$, and noise pollution in pregnancy, childhood (ages 1–9 years), and adolescence (ages 10–12 years). Psychotic experiences, depression, and anxiety were measured at ages 12, 18, and 24 years. Participants exposed to higher PM$_{2.5}$, particularly during pregnancy, had greater odds for psychotic experiences and depression. Conversely, higher nitrogen dioxide (but not PM$_{2.5}$) exposure in pregnancy and higher noise pollution in childhood and adolescence, were associated with greater odds for anxiety. If causal, our findings suggest that interventions to reduce air pollution would improve global mental health.

The Lancet Planetary Health

Water and the global climate crisis: 10 things you should know

Climate change is disrupting weather patterns, leading to more frequent and more intense extreme weather events, unpredictable water availability, exacerbating water scarcity and contaminating water supplies. Such impacts can drastically affect the quantity and quality of water that children need to survive. Today, a change in climate is felt primarily through a change in water. Millions of children are at risk. UNICEF highlights 10 things you should know about water and climate change. Adapting water and sanitation services to the water effects of climate change will protect children's health and save their lives. Moreover, using water more efficiently and transitioning to solar powered water systems will reduce greenhouse gases and further protect children's futures.

UNICEF (15/03/2024)

Why does South Asia have the world’s worst air pollution?

In 2023, Bangladesh recorded the worst air quality of 134 countries monitored by the Swiss climate group, IQAir. Pakistan and India were close behind, with the report showing that South Asia suffers from the worst pollution in the world overall. The report attributed it to “brick kiln and other industrial emissions, agricultural waste burning, and cremation practices”. The burning of solid fuel for cooking and heating, especially during colder months, adds to the air pollution. The review found connections between air pollution and the health of newborn babies in the first weeks of life, low birth weight, miscarriages and stillbirths. It also found that early exposure to air pollution can hinder development.

Aljazeera (02/04/2024)

Every new school being built in England is in unsafe air pollution area, study says

Every new school in England is being built in an area with unsafe levels of air pollution, according to a report that says thousands of children will experience “alarmingly poor” air quality. Children are particularly vulnerable to the harmful effects of
Metals
United States house dust Pb concentrations are influenced by soil, paint, and house age: insights from a national survey
Lead (Pb) in house dust contributes significantly to blood lead levels (BLLs) in children which may result in health consequences. Pb concentrations in vacuum-collected house dust are characterized across 346 homes participating in the American Health Homes Survey II (AHHS II), a US survey (2018–2019) evaluating residential Pb hazards. Connections between house dust Pb and soil Pb, paint Pb, and other residential factors are evaluated. Mean and median vacuum dust Pb concentrations were 124 µg Pb g⁻¹ and 34 µg Pb g⁻¹, respectively. Vacuum-collected dust concentrations and dust wipe Pb loading rates were significantly correlated within homes ($\alpha < 0.001$; $r \geq 0.4$). At least one wipe sample exceeded current house dust Pb loading hazard standards (10 µg ft⁻² or 100 µg Pb ft⁻² for floors and windowsills, respectively) in 75 of 346 homes (22%). House dust Pb concentrations were correlated with soil Pb ($r = 0.64$) and Pb paint ($r = 0.57$). Soil Pb and paint Pb were also correlated ($r = 0.6$). The AHHS II provides a window into the current state of Pb in and around residences.
Journal of Exposure Science & Environmental Epidemiology

Lead (Pb) Pollution in Soil: A Systematic Review and Meta-Analysis of Contamination Grade and Health Risk in Mexico
Lead (Pb) is a toxic metal associated with several health concerns. The mining and Pb battery industry are related to Pb increase in air, water, and soil. Mexico is an important worldwide Pb producer. Since Pb remains stable in soil and its concentration is an indicator of Pb exposure, this systematic review focused on reports of Pb concentrations in soil from Mexico published in 2010–2023. From 36 retrieved reports, 24 were associated with mining Pb pollution. The publications evaluated mining, agricultural, and residential soils. Pb concentrations in soil were higher than the allowed limits in more than half of the reports. The locations evaluated in Mexico presented a contamination grade from heavily contaminated to extremely contaminated and health risks results suggested severe hazards, particularly for children.
Environments

Pesticides pose a significant risk in 20% of fruits and vegetables, Consumer Reports finds
A healthy diet includes ample portions of fruits and vegetables, but not the unhealthy dose of pesticides found in about one in five of the produce examined by Consumer Reports. An examination of 59 common fruits and vegetables found pesticides posed significant risks in 20% of them, from bell peppers, blueberries and green beans to potatoes and strawberries, according to findings published Thursday by the nonprofit consumer advocacy group. In a comprehensive review, CR said it analyzed seven years of data from the Department of Agriculture. Health problems arise from long-term exposure to pesticides, or if the exposure occurs during pregnancy or in early childhood, according to James Rogers, a microbiologist who oversees food safety at CR. CR advises that shoppers limit exposure to harmful pesticides by using its analysis to help determine, for instance, when buying organic makes the most sense, given that it's often a substantially more expensive option.
CBS News (18/04/2024)

Mosquito-borne diseases spreading in Europe due to climate crisis, says expert
Mosquito-borne diseases are spreading across the globe, and particularly in Europe, due to climate breakdown, an expert has said. The insects spread illnesses such as malaria and dengue fever, the prevalences of which have hugely increased over the past 80 years as global heating has given them the warmer, more humid conditions they thrive in. Prof Rachel Lowe who leads the global health resilience group at the Barcelona Supercomputing Center in Spain, has warned that mosquito-borne disease outbreaks are set to spread across currently unaffected parts of northern Europe, Asia, North America and Australia over the next
Exposure to Environmental Pollution in Schools of Puchuncaví, Chile: Characterization of Heavy Metals, Health Risk Assessment, and Effects on Children’s Academic Performance

In Chile, Puchuncaví and Quintero face substantial environmental pollution challenges. Industrial and vehicular emissions expose schoolchildren to elevated levels of pollutants, posing risks to both their health and educational advancement. The aim of this study is to determine the distribution of heavy metals in the dust in and around the schools in these cities. We also evaluate the associated carcinogenic and non-carcinogenic risks, and whether their concentrations affect the academic performance (AP) of the students. The metal concentration is found to be related to the distance to the pollution source. The carcinogenic risk is low, while the non-carcinogenic risk is high in the studied school. The levels of heavy metals inside and outside the schools are found to influence AP. In these cities, children are exposed to high levels of environmental pollution, which may pose a risk to their health and impact their AP.

Sustainability

Reproductive Health
Predictors of Serum Per- and Polyfluoroalkyl Substances Concentrations among U.S. Couples Attending a Fertility Clinic

The current study explores the predictors of preconception PFAS concentrations among couples in the United States. It includes couples who attended a U.S. fertility clinic between 2005 and 2019. Questionnaire information and serum samples were collected. Among all examined factors, diet explained more of the variation in PFAS concentrations (1–48%). Individuals reporting White race, with a higher body mass index, and nulliparous women had higher PFAS concentrations than others. Fish and shellfish consumption was positively associated with PFAS concentrations among both females and males. Our findings provide important data for identifying sources of couples’ PFAS exposure and informing interventions to reduce PFAS exposure in the preconception period.

Environmental Science and Technology

Climate Change
Ambient air temperature exposure and foetal size and growth in three European birth cohorts

few decades. “Global warming due to climate change means that the disease vectors that carry and spread malaria and dengue [fever] can find a home in more regions, with outbreaks occurring in areas where people are likely to be immunologically naive and public health systems unprepared,” Lowe said.

The Guardian (25/04/2024)

Wildfire smoke contributes to thousands of deaths each year in the U.S.

New research shows that the health consequences of wildfire smoke exposure stretch well beyond the smoky days themselves, contributing to nearly 16,000 deaths each year across the U.S., according to a National Bureau of Economic Research (NBER) analysis released in April. The analysis warns that number could grow to nearly 30,000 deaths a year by the middle of the century as human-driven climate change increases the likelihood of large, intense, smoke-spewing wildfires in the Western U.S. and beyond. "This really points to the urgency of the problem," says Minhao Qiu, a researcher at Stanford University and the lead author. "Based on our results, this should be one of the policy priorities, or the climate policy priority, of the U.S., to figure out how to reduce this number."

NPR (18/04/2024)

130 million Americans routinely breathe unhealthy air, report finds

Over one-third of Americans, or about 130 million people, routinely breathe in unhealthy air, according to the newest State of the Air report from the American Lung Association (ALA). That number is larger in 2023 than in years past, despite significant long-term and ongoing efforts to clean the nation’s air. And climate change, the report says, is making the job harder. Hotter temperatures lead to more ozone formation and can make the air dustier, too. But the biggest climate-fueled pollution challenge comes from wildfire smoke, which has added vast quantities of dangerous fine particle pollution to the air. Western states like California and Colorado have found that wildfire smoke is counterbalancing long-term, successful efforts to clean up pollution from human-controlled industrial sources, like coal-fired power plants and diesel truck exhaust.

NPR (24/04/2024)
The authors evaluated the association between temperature exposure during pregnancy and foetal size and growth in three European birth cohorts. They studied 23,408 pregnant women from the English Born in Bradford cohort, Dutch Generation R Study, and Spanish INMA Project. Cold and heat exposure during weeks 1–28 were associated with a smaller and larger head circumference in late pregnancy, respectively. A susceptibility period from weeks 1–7 was identified for cold exposure and a smaller head circumference at late pregnancy. No associations were found for other foetal or any birth outcomes. Future research should replicate this study across different climatic regions including varying temperature profiles.

*Environment International*

**Food Security**

**Association of Food Desert Residency and Preterm Birth in the United States**

"Food deserts" are geographic areas with limited access to affordable, nutritious, and high-quality foods such as fruits and vegetables. Disproportionately impacting low-income and racialized communities, they often exist due to a lack of grocery stores located within close travel distance for residents and are a public health concern. During pregnancy, poor nutritional habits increase the likelihood of developing gestational hypertension (gHTN), which is a significant factor in the occurrence of preterm births. This study aimed to examine the association between residing in a USDA-designated food desert and preterm birth, with gHTN being a potential mediating factor. As expected, the findings suggested that residing in a food desert increased the likelihood of preterm birth in a dose-response manner. Proximity to affordable, nutrient-dense food options was associated with a decreased risk of developing gHTN and, therefore, a reduced likelihood of preterm delivery. Evidently, maternal and infant health is contingent upon food security.

*Environmental Research and Public Health*

**EVENTS**

**Second Global Conference on Air Pollution and Health**

28 October – 1 November 2024

Accra, Ghana

**Microplastics found in every human placenta tested in study**

Microplastics have been found in every human placenta tested in a study, leaving the researchers worried about the potential health impacts on developing foetuses. A second study revealed microplastics in all 17 human arteries tested and suggested the particles may be linked to clogging of the blood vessels. Microplastics have also recently been discovered in human blood and breast milk, indicating widespread contamination of people's bodies. The impact on health is as yet unknown but microplastics have been shown to cause damage to human cells in the laboratory. The particles could lodge in tissue and cause inflammation, as air pollution particles do, or chemicals in the plastics could cause harm.

The Guardian (27/03/2024)

**Sperm counts fall as temperatures rise, new research suggests**

Exposure to temperatures above 30 degrees knocks sperm counts in men, researchers have found, raising concerns that global warming could hit fertility rates worldwide. While it has long been known that sperm counts can decline with age, scientists in Singapore have warned young men not to think “they’re invincible” after an analysis tracked the impact of hot days on semen samples from 818 men in the city state. The results, which have yet to be published in a journal, found that those who were exposed to average temperatures exceeding 29.8°C within three months of providing a sample had a 46 per cent higher risk of a low sperm count. Meanwhile the risk of a low sperm concentration jumped by 40 per cent.

The Telegraph (03/04/2024)

**Newsletters**

**CEH E-Digest**

The recent CEH E-Digest announced that April is Healthy Homes Month. Healthy homes set children up to thrive. That's because children are particularly vulnerable to environmental hazards in homes due to their developing bodies, underdeveloped immune systems, and behaviors like mouthing items, crawling, sitting, and lying on the ground. However, the environmental health of our homes affects us all! The CEHN website highlights steps families can take to keep their home safe. There are also upcoming events and activities.

CEH (24/04/2024)
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