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Children's Environmental Health International Initiatives

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January/February 2025

[Nearly a quarter of a billion children's schooling was disrupted by climate crises in 2024 – UNICEF](#)

At least 242 million students in 85 countries had their schooling disrupted by extreme climate events in 2024, including heatwaves, tropical cyclones, storms, floods, and droughts, exacerbating an existing learning crisis, according to a new UNICEF analysis.

For the first time, [Learning Interrupted: Global Snapshot of Climate-Related School Disruptions in 2024](#) – released on International Day of Education – examines climate hazards that resulted in either school closures or the significant interruption of school timetables, and the subsequent impact on children from pre-primary to upper secondary level. Last year, severe weather kept one in seven students out of class, threatening their health and safety, and impacting their long-term education.”
UNICEF (23/01/2025)

Journal Articles

[Development in Latin America and the Caribbean: Water, Sanitation, and Garbage Collection](#)

Access to essential infrastructure services such as water, sanitation, and garbage collection can considerably affect children's environment and may play a significant role in shaping early childhood developmental and health outcomes. Having access to clean water, sanitation, and improved garbage collection services is linked to better early childhood development and fewer cases of stunting. The findings are significant even when individual, maternal, and household factors, as well as household wealth, caregiving behaviors, and community influences were

[Toxic air threatens children's lives across East Asia and the Pacific, UNICEF warns](#)

More than 100 children under the age of five die every day in East Asia and the Pacific due to air pollution, the UN Children's Fund (UNICEF) warned in a new analysis, calling for urgent action to tackle the crisis. The analysis underscores the devastating impact of toxic air on young lives, with air pollution now linked to nearly one in four deaths of under fives in the region. Exposure begins in the womb, increasing risks of premature birth and low birth weight, and continues throughout childhood, impairing lung development, reducing cognitive function, and contributing to chronic diseases such as asthma and cardiovascular conditions. “Every breath matters but for too many children every breath can bring harm,” said June Kunugi, UNICEF Regional Director for East Asia and the Pacific. The report reveals that all 500 million children in the region live in countries with unhealthy air.

UN News (06/02/2025)

Reports

[New UN Report: 74 percent of Latin American and Caribbean countries are highly exposed to extreme weather events, affecting food security](#)

Changing patterns of climate variability and extreme weather events are negatively affecting all dimensions of food security and exacerbating other underlying causes of malnutrition in Latin America and the Caribbean, according to the *2024 Regional Overview of Food Security and Nutrition*. The report states that Latin America and the Caribbean is the second-most exposed region in the world to extreme weather events, following

controlled. The economic relevance is shown by the large gap in vulnerable groups, which remains even after considering other factors. Results also suggest that households can reduce the impact of pollutants by treating water, using handwashing cleansers, and storing trash in lidded containers. The findings underscore the importance of investing in quality basic infrastructure services to enhance early childhood development and health in low- and middle-income countries.

World Development

[Factors affecting microplastic pollution of sandboxes in urban residential areas: Simple methodology for quality control in the context of potential exposure assessment for children](#)

Microplastics are common in the environment, but our knowledge of their distribution in common play areas for children, is limited. Here, researchers investigated the factors affecting the microplastic pollution of sandboxes in urban residential areas in three estates in Kielce, Poland. Sand samples were collected from nine sandboxes and examined for the presence of microplastics. Microplastics were found in each sample and their contents ranged from 60 to 5,540 items/kg of sand. Fragments and fibers were the most prevalent types of microplastics found. Transparent fibers were the most abundant among fibers (63%). Sandboxes can be a potential source of microplastics for children, and assuming that sand ingestion by children is similar to the estimated daily soil ingestion rate, the results indicate that the microplastics ingested through sand may pose a potential threat to children's health. More research is needed to better understand the health risks associated with this source of microplastics.

Environmental Toxicology and Chemistry

Endocrine-Disrupting Chemicals

[Associations of Exposure to 24 Endocrine-Disrupting Chemicals with Perinatal Depression and Lifestyle Factors: A Prospective Cohort Study in Korea](#)

During pregnancy, reproductive hormonal changes can affect the mental health of women. The authors examined the association between 24 endocrine-disrupting chemicals (EDCs) in maternal urine and perinatal depression along with their association with dietary and lifestyle factors. Participants were recruited from the “No Environmental Hazards for Mother–Child” cohort in Korea. Questionnaires asking dietary and lifestyle factors and evaluation of depressive

Asia. In this region, at least 20 countries (74 percent of analyzed countries) face a high frequency of such events, indicating significant exposure, and 14 (52 percent) are considered vulnerable, as they are more likely to experience increased undernourishment due to these phenomena. The most vulnerable populations are disproportionately affected, as they have fewer resources to adapt.

FAO (27/01/2025)

In the Media

[The Lasting Damage of Wildfires](#)

Numerous fires have ravaged Southern California this month. Fueled by dry conditions and strong winds, the fires have killed many people and destroyed 14,000 buildings since January 7, 2025. Research has demonstrated that, in addition to massive devastation and direct loss of life, smoke from wildfires presents a risk to population health far beyond the immediate impact. As many as 1.59 million deaths per year globally have been attributed to smoke and associated illness. Within the past decade, a new and troubling additional health risks have emerged. Fires that burn entire communities, including manufactured products and materials require postfire environmental sampling as well as complex cleanup, disposal, and restoration efforts, all of which increase costs and extend the period of community disruption. High levels of some heavy metals, including lead, have also been measured downwind of fires. The need for effective regulations and evidence-based guidelines for cleanup and prevention is more relevant than ever to protect environmental and human health.

Think Global Health (24/01/2025)

[Dirty water, poor diet: A recipe for rising infection among Indian children](#)

In India, millions of children face a silent yet deadly threat every day: contaminated water and poor nutrition. While healthcare advancements have made progress in treating infectious diseases, the root causes - unsafe water, lack of sanitation, and inadequate diets — continue to compromise children's health. A study published in The Lancet Global Health reported that environmental enteropathy — an intestinal condition caused by prolonged exposure to unsanitary conditions — affects a large proportion of children in developing countries, including India. This condition damages the gut lining,

symptoms were administered during antepartum and postpartum periods. Urine samples were collected from women during antepartum and postpartum periods. Antepartum and postpartum depression were associated with several EDCs. Some dietary factors and consumer products were associated with the concentration level of chemicals. Women should be aware of these exposures.

Environments

Air Pollution

[Prenatal exposure to particulates and anthropometry through 9 years of age in a birth cohort](#)

The authors examined prenatal particulate matter (PM₁₀, PM_{2.5}) exposure and child anthropometry. They compared children's body mass index z-scores (zBMI) at 0–3 and 7–9 in New York state with PM₁₀ exposure across pregnancy. Higher PM₁₀ during pregnancy was associated with higher zBMI in both early and middle childhood. For instance, one interquartile range increase in PM₁₀ exposure during the first 2 weeks of pregnancy was associated with higher zBMI at 0–3 (0.05, 95% CI: 0.01, 0.10) and 7–9 (0.14, 95% CI: 0.02, 0.23). PM_{2.5} exposure during the final 2 weeks of gestation was associated with higher zBMI at 7–9 years (B: 0.12, 95% CI: 0.04, 0.22).

Conclusion Even at low levels of air pollution, prenatal PM₁₀ exposure was associated with higher zBMI in childhood.

Pediatric Obesity

[A case-crossover study of air pollution exposure during pregnancy and the risk of stillbirth in Tehran, Iran](#)

There is limited and conflicting evidence about the short-term effects of exposure to air pollutants on the pregnancy outcome. Here, the authors studied the effect of several air pollutants (i.e. O₃, CO, NO₂, SO₂, and PM_{2.5}) on the occurrence of stillbirth in Tehran (the capital of Iran) between 2018 and 2023. They estimated the effect of exposure to air pollutants measured as lags (0 to 7 days) before delivery on stillbirth. Based on the findings in single pollutant models, we found that PM_{2.5}, NO₂, and SO₂ exposure were associated with stillbirth. Also, results from dual-pollutant models suggested that NO₂, SO₂, and PM_{2.5} were likely the major drivers of the observed associations. Due to the greater sensitivity of pregnant women and their fetuses to the adverse

impairing the absorption of essential nutrients and increasing susceptibility to bacterial and parasitic infections. According to UNICEF's 2021 report, nearly 35% of Indian children under five are stunted, and 19% are wasted.

India Today (06/01/2025)

[A tale of two cities: Delhi's air more toxic than LA's wildfire-hit skies](#)

Los Angeles County in the United States is grappling with devastating wildfires in parts of the region. The smoke from these infernos has pushed the city's Air Quality Index (AQI) into the "unhealthy" category, with a recorded AQI of 158. LA's air remains significantly cleaner than that of Delhi which recorded severe AQI values of 373 on January 9th, and 410 on January 10th. This contrast highlights a troubling reality for Delhi, where poor air quality has become a daily struggle. Delhi's air quality crisis did not rise from merely weather conditions. It stems from chronic contributors, including vehicular emissions, stubble burning, construction dust, and industrial pollutants. While pollution from LA's wildfires have triggered immediate public health warnings, and widespread concern, Delhi's residents endure severe air pollution with little comparable response. Despite 'severe' AQIs, air quality levels plunge to hazardous depths in Delhi as, such measures are seldom implemented in India's capital. Business Standard (10/01/2025)

[Is Electronic Waste Quietly Poisoning Ethiopia?](#)

Over 62 million tons of electronic waste is generated globally each year. While low-income countries like Ethiopia have historically contributed a meager amount to the global output, a marked rise has occurred in recent years. The declining cost of electronics, and influx of second-hand products, are fueling the surge. The World Health Organization (WHO) identifies e-waste as one of the fastest-growing streams of waste as well as one of the most hazardous. Although lead is not limited to e-waste, a recent study found that one in three children in Ethiopia is exposed to lead poisoning. Ethiopia generates one of the highest amounts of e-waste in East Africa. Lead contamination affects soil, water, and air, impacting vulnerable communities, particularly children. The lack of lead detector machines, manual collection of waste, open burning and manual dismantling of e-waste parts could be serving as major sources of health concerns in Ethiopia.

Shega (17/01/2025)

effects of air pollutants, it is necessary to implement more efficient measures to improve pregnant women's knowledge and practice during highly polluted seasons and days.

Scientific Reports

[Neonatal intensive care admissions and exposure to satellite-derived air pollutants in the United States, 2018](#)

In the United States (US), neonatal intensive care units (NICUs) monitor and treat newborns for a variety of adverse health concerns including preterm status, respiratory distress and restricted growth. The authors linked 2018 US national birth registry NICU admission data among singleton births with satellite and modelled air pollution levels for the month prior to birth to examine whether late-pregnancy exposure to ambient air pollutants is associated with adverse neonatal health outcomes. Regardless of season, higher ambient levels of nitrogen dioxide (NO₂) and fine particulate matter < 2.5 microns (PM_{2.5}) increased the likelihood of NICU admission 30–35% for NO₂ and 11–22% for PM_{2.5} even after adjustment for parental characteristics. Despite the relatively low-moderate US exposure levels, traffic-related pollutants near the end of pregnancy appear to increase overall adverse health risks for newborns, underscoring the need to reduce prenatal exposure to ambient pollutants.

Scientific Reports

Chemicals/Pesticides

[Self-Reported Pesticide Exposure During Pregnancy and Pesticide-Handling Knowledge Among Small-Scale Horticulture Women Workers in Tanzania, a Descriptive Cross-Sectional Study](#)

Women constitute most of the global horticulture workforce, where pesticide use is prevalent. However, knowledge about practices among pregnant employees that cause exposure to pesticides is limited. This study assess the knowledge and potential impact using a cross-sectional survey among 432 small-scale horticulture women workers in Tanzania from October 2022 to April 2023. The women were interviewed using a self-report questionnaire. In total, 86% of participants worked in horticulture during pregnancy, with 47.5% continuing into the third trimester. Many engaged in weeding within 24 h of spraying (58.4%) and washing pesticide-contaminated clothes (51.7%). Most of the women (93.1%) had limited knowledge of pesticide handling, though some understood

[Climate change: The Panama community that fled its drowning island](#)

The indigenous community of Guna on the tiny island of Gardi-Sugdub off of Panama's northern Caribbean coast has faced an existential climate crisis since 2010. The tiny island of Gardi Sugdub in Central America is at "imminent risk" from rising sea levels that will render it uninhabitable by 2050.

The small island of Panama spans about the size of five soccer fields and is home to roughly 1,300 people of the indigenous Guna community. Last June, the majority of residents fled to the mainland, though others have remained. The increased temperatures of the Earth are leading to rising sea levels that melt glaciers and ice sheets that pour out into and expand our oceans, eating up our shorelines as a result.

Express US (14/02/2025)

[Born too late? Climate change may be delaying births, suggests study](#)

New Curtin University research has found exposure to outdoor air pollution and extreme temperatures during pregnancy may increase the risk of prolonged pregnancy, offering new insights into the impact of climate change on maternal health. The study analyzed data from nearly 400,000 births in Western Australia and found that higher exposure to fine particulate air pollution (PM_{2.5}) and biothermal stress (a measure that combines air temperature, radiant temperature, relative humidity, wind speed, and human physiology) was associated with pregnancies lasting beyond 41 weeks. Prolonged pregnancy can have serious health implications for both mother and baby, including the need for medical interventions such as labor induction or cesarean sections, increased risk of stillbirth, birth complications, child mortality, early childhood behavioral and emotional problems, and emotional impacts on families. It is important that families and health care provider are aware of potential complications.

MedicalExpress (10/02/2025)

[Your Scented Wax Melts Can Pollute Indoor Air as Much as a Diesel Engine](#)

A new study finds that scented wax melts can create levels of indoor air pollution on par with diesel engines and gas stoves. The team discovered that volatile organic compounds called terpenes, given off by wax melts and other fragrance products, interact

mixing (62.5%) and spraying (64.1%) instructions on labels. This study suggests that women working in horticulture are exposed to pesticides during pregnancy partly due to limited knowledge of safe pesticide handling. There is a need for guidelines and policies towards protecting women working in agriculture.

International Journal of Environmental Research and Public Health

Heavy Metals/Trace Elements

[Health risk assessment of humans exposed to soil and dust trace elements from e-waste sites in Bangladesh](#)

Elevated levels of trace elements are thought to pose a serious health risk to workers in e-waste recycling facilities. The authors evaluated the distribution, contamination, and human health risks of trace elements in soil and dust from e-waste sites in Bangladesh. Thirty-one soil and dust samples were collected and analyzed for Pb, Cd, Hg, As, Cr, Cu, Mn, Ni, Zn, Be, Co, Se, and V. Children were more vulnerable than adults to non-carcinogenic risks from ingestion, while non-carcinogenic risks from dermal and inhalation exposure were negligible. Pb, Hg, and Cu from soil, as well as Pb, Hg, and Cr from dust, showed a hazard index (HI) greater than 1, indicating a risk higher than the acceptable level for children and adults at the exposed sites, while the risk to a reference child and adults was negligible. This study demonstrates a significant accumulation of trace elements in e-waste recycling sites, where exposure through soil and dust poses environmental and human health risks, particularly for children.

Journal of Environmental Exposure Assessment

[Combined effects of global DNA methylation, blood lead and total urinary arsenic levels on developmental delay in preschool children](#)

DNA methylation is a critical step in brain development and 5-Methyl-2'-deoxycytidine (5mdC) is one of the global DNA methylation markers. Arsenic and lead exposures have been associated with neurotoxicity, which may be linked to epigenetic changes. The researchers investigated the correlation between 5mdC and developmental delay (DD) among preschoolers. They also assessed whether 5mdC modified the impacts of blood lead and total urinary arsenic levels on DD. The concentrations of 5mdC, blood cadmium and lead, and total urinary arsenic were measured in 174 children with DD and 88 healthy

with ozone to form a concerning number of nanoscale particles. While the impact of these kinds of particles on health isn't yet fully clear, they're small enough to get inside the lungs. Previous studies have linked these fine particles, also known as nanocluster aerosol, with issues like cardiorespiratory disease. Even with no flames or smoke, scented wax melts can release more volatile organic compounds than candles, because they have more fragrance and melt over a larger surface area when heated.

Science Alert (10/02/202)

[Uganda: The overlooked threat of micro plastics in agricultural soils](#)

Unlike other East African countries, Uganda has failed to enforce the bans on single-use plastic bags. They continue to be produced and circulated at an alarming scale. Plastic bags are found everywhere. As a result, microplastic accumulation in agricultural soils continues. The long-term implications for soil health, crop quality, and consequently for local food systems and food security have been largely ignored. More than 66% of Ugandans are employed in agriculture. Farming operations are done primarily by small holder farmers whose livelihoods face substantial threats from deteriorating soil productivity. The Uganda government has introduced several bans on plastic bags starting in 2007, but enforcement of has been inconsistent and largely ineffective. Community action and initiatives are essential to protect the farming practices.

African Arguments (27/01/2025)

[Our minds are cluttered with plastics - literally - and the amount found in each person is growing](#)

New research shows that the shocking amount of plastic is more likely to be found in the brain than anywhere else in the body, according to a paper published in *Nature Medicine*. The team analyzed the brains of 52 decedents and found the individuals had higher concentrations of microplastics in the brain compared to the liver and kidneys. Twelve of the decedents had been diagnosed with dementia and researchers found they exhibited even greater microplastic levels than people who had not been diagnosed with the disease. There is no evidence to prove the level of plastics in the brain increases the likelihood of developing dementia, researchers emphasized. However, "These results highlight a critical need to better understand the routes of exposure, uptake and clearance pathways and potential

children. The results show elevated levels of blood lead and total urinary arsenic were significantly associated with DD risk among preschoolers. Furthermore, high 5mdC (%) was related with reduced risk of DD. A notable multiplicative interaction was observed between low 5mdC (%) and elevated blood lead levels which increase OR of DD.

Environmental Health

Water, Sanitation & Hygiene

[Environmental Exposures Associated with Enteropathogen Infection in Six-Month-Old Children Enrolled in the ECoMiD Cohort along a Rural–Urban Gradient in Northern Ecuador](#)

Enteropathogens are major contributors to mortality and morbidity, particularly in settings with limited access to water, sanitation, and hygiene infrastructure. The authors assessed transmission pathways associated with enteropathogen infection in stool samples from 276 six-month-old children living in communities along a rural–urban gradient in Northern Ecuador. Most children (89%) carried at least one pathogen, and 72% carried two or more. Improved water and sanitation were most predictive of reduced infection risk. Animal exposure was associated with increased *Salmonella* prevalence. Identifying environmental exposures associated with specific pathogen outcomes provides insights into transmission pathways, which contribute critical information for developing effective strategies to improve child health.

Ecotoxicology & Public Health

Climate Change

[Exposure to climate change-related extreme events in the first year of life and occurrence of infant wheezing](#)

In an Italian birth cohort, the authors investigated the relationship between exposure to extreme climate events during the first year of life and infant respiratory health. The authors combined addresses with climate data, to derive children's cumulative exposure to the (i) heatwaves (ii) days with wildfire (iii) daily precipitation > 100 mm; (iv) months with exceptional drought in their first year. Wheezing at 6–18 months was recorded. They found that exposure to multiple extreme events, especially heatwaves, in the first year of life is associated with later infant respiratory health

health consequences of plastics in human tissues, particularly in the brain,” the researchers wrote. The Independent (09/02/2025)

[Microplastics in placentas linked to premature births, study suggests](#)

A study has found microplastic and nanoplastic pollution to be significantly higher in placentas from premature births than in those from full-term births.

The levels were much higher than previously detected in blood, suggesting the tiny plastic particles were accumulating in the placenta. But the higher average levels found in the shorter pregnancies were a “big surprise” for the researchers, as longer terms could be expected to lead to more accumulation. Preterm birth is the leading cause of infant death worldwide, and the reasons for about two-thirds of all preterm births were unknown, said Dr Enrico Barrozo, of Baylor College of Medicine in Texas, US.

The Guardian (30/01/2025)

World

[Three Years of War in Ukraine - in Pictures](#)

The Russian attack on Ukraine has reached its third anniversary, and countless people, including children, have suffered.

The Guardian (20/02/2025).

Webinars

Webinar: Medically Fragile Children and Environmental Challenges

[The Mid-Atlantic Center for Children's Health and the Environment \(MACCHE\)](#)

Date: May 14, 2025

Time: 12 noon ET

[Register](#)

Meetings

[Global Conference on Air Pollution and Health: Accelerating action for clean air, clean energy access and climate change mitigation](#)

March 25-27, 2025

Cartagena, Colombia

suggesting the need to implement climate change mitigation policies to protect long-term health.
Environment International

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