

CHILDHOOD AIR POLLUTION EXPOSURE KEY MESSAGES

AUDIENCE: ALL



Healthy Environments
for Healthy Children



Air pollution has a devastating effect on children's health

Scientific evidence shows air pollution can contribute to adverse birth outcomes, infant mortality, damaged lung function, asthma, cancer, and can represent a factor that increases the risk of neurological disorders and childhood obesity.

IMPACTS OF AIR POLLUTION

Children are uniquely vulnerable to the damaging health effects of air pollution.

- **Children are physiologically more vulnerable to air pollution** than adults because their brains, lungs and other organs are still developing.
- They are physically more exposed to air pollution than adults because they breathe twice as fast, often by mouth, taking in more pollutants.
- They live closer to the ground, where some pollutants reach peak concentrations.
- **Air pollution is associated with new or exacerbation of pre-existing health conditions** in children such as asthma and bronchitis.
- Benzene has been identified as a carcinogen that is associated with increased risk of childhood leukaemia.

Children are exposed to air pollution almost everywhere.

- **1 in 10 deaths in children under the age of five are attributed to air pollution exposure**, according to WHO.¹
- 361,000 children died in 2019 from acute lower respiratory illnesses attributed to polluted air.²
- **20 per cent of newborn deaths are attributed to air pollution**, most related to complications of low birth weight and preterm births.³
- **93 per cent (1.8 billion) of the world's children under 15 years old breathe poisonous air every day** that is risking their health, cognitive development and future.⁴

¹ <https://www.who.int/news/item/29-10-2018-more-than-90-of-the-worlds-children-breathe-toxic-air-every-day>

² <https://www.who.int/news/item/29-10-2018-more-than-90-of-the-worlds-children-breathe-toxic-air-every-day>

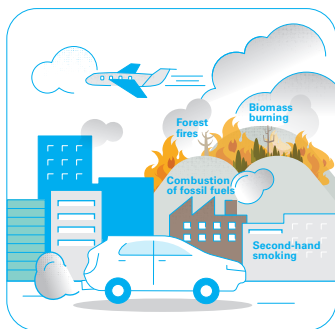
³ <https://www.stateofglobalair.org/>

⁴ <https://www.who.int/news/item/29-10-2018-more-than-90-of-the-worlds-children-breathe-toxic-air-every-day#:~:text=Every%20day%20around%2093%25%20of,and%20development%20at%20serious%20risk>

SOURCES OF EXPOSURE

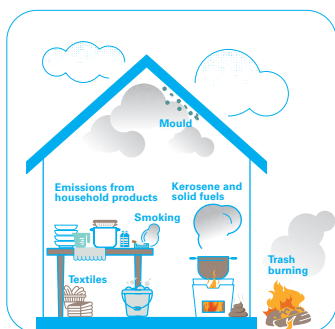
Ambient and indoor air pollution is a complex mixture of pollutants that includes particulate matter, ozone, nitrogen dioxide, carbon monoxide and sulfur dioxide. It can also include several other noxious substances, such as benzene or heavy metals, which include arsenic, chromium, lead and mercury. Outdoor air pollution interacts closely with indoor air pollution in homes, schools, health facilities and other spaces, which can be major sources of exposure for children. There are also links between poverty and exposure to more air pollution that puts certain communities at increased risk. These communities tend to have a higher prevalence of anaemia, which drastically increases the chance to contract pneumonia. Pneumonia claims the lives of about 2,200 children under the age of five every day, a killer of more children than any other infectious disease.

Outdoor air pollution



- Fossil fuel combustion, such as lignite coal, industrial processes, open burning of waste and waste incineration, agricultural practices, construction and demolition, and natural processes, such as dust storms and volcanic eruptions, can cause air pollution.
- Climate change is expected to worsen air quality with increased ground-level ozone and wildfires.
- **Outdoor air pollution is lethal and contributed to 4.2 million premature deaths** in 2019, including almost 154,000 deaths of children under the age of five.

Indoor air pollution



- Common indoor air pollution comes from heating or cooking using kerosene or solid fuels, such as coal, charcoal and firewood, with insufficient ventilation.
- **In 2020, 2.4 billion people globally don't have access to clean cooking, exposing millions of children to high levels of air pollution.**⁵
- **Women and children in poorer countries spend much of their time around the fireplace, exposing themselves to concentrations of some pollutants that are higher than the level found outside.**
- The widespread lack of access to clean energy has tragic consequences on a vast scale: **indoor air pollution was responsible for 3.2 million premature deaths** in 2019, including over 237,000 deaths of children under the age of five.
- Close to half of deaths from acute lower respiratory infections among children under the age of five in low- and middle-income countries are attributed to particulate matter (soot) inhaled from indoor air pollution.⁶



⁵ https://trackingsdg7.esmap.org/data/files/download-documents/sdg7-report2022-full_report.pdf

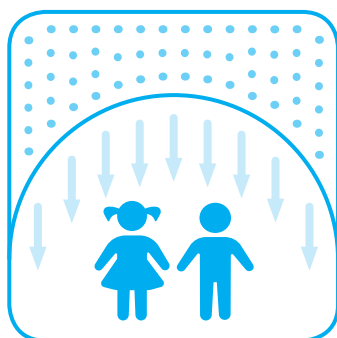
⁶ <https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>

THE NEED FOR ACTION

Air pollution is a global public health crisis silently destroying the lives and future of children, even during prenatal development, and action must be taken to stop it now.

Governments should invest in gathering data on the sources of air pollution and its health impacts, particularly on children and the public, to inform their standards and policies, and prioritize high-risk areas.

Actions to protect children



- **Set up and maintain air quality monitoring systems and report information to the public**, such as by integrating it into daily weather forecasts and noting levels of air pollution that are dangerous to children and pregnant women.
- **Increase ambition of national climate and environmental policies**, such as National Adaptation Plans or Nationally Determined Contributions, ensuring inclusion of child-sensitive health commitments and specific air quality targets.
- Enhance indoor air quality in day care centres, hospitals and schools such as kindergartens through regular monitoring, better ventilation, filtration systems and other approaches.
- **Provide affordable, clean fuel options and incentives to shift to cleaner modes of transport** including more fuel efficient school buses.
- Strengthen policies and investments to **expedite the transition to clean, efficient energy and transport across all sectors**. For example:
 - Improve public transport systems and encourage less use of private passenger vehicles.
 - **Introduce and enforce advanced emission standards**, such as requiring regular emission checks on vehicles and encouraging production and use of electric and low-emission vehicles.
 - Improve post-combustion control to lower emissions at power stations and in large-scale industry.
 - **Establish renewable energy targets and support policies to achieve them**, including incentives to use wind, solar and hydropower for power generation.
 - Control volatile organic compounds from oil and gas production and improve solvents recovery in industry.
 - Use environmentally friendly refrigerants, complying with the Kigali Amendment.
 - Encourage pre-mining recovery of coal mine methane gas, providing fiscal incentives, well-defined gas property rights and unsubsidized free gas market.
 - Improve energy efficiency of appliances, buildings, lighting, heating and cooling systems and cooking technologies.
- Implement construction and road dust control measures such as avoiding dust-generating work on windy days.
- Improve and enforce forest, land and water management, as well as fire-prevention strategies.
- Enforce bans on waste burning and provide alternative waste management options.
- Improve solid waste management systems, including capturing methane, composting to reduce food waste and stopping biogas leakage from waste water treatment.
- Improve agriculture practices, such as livestock manure management, management of agricultural crop residues, efficiency of nitrogen fertilizer application and rice production practices.

The **health sector** plays an integral role on the frontline of protecting children from air-pollution related illnesses.

- Be informed about existing and emerging evidence on air pollution's effects on children's health to prevent, detect and treat it.
 - **Assess children's environmental history of air pollution exposure**, counsel on exclusive breastfeeding, nutrition, exercise, early screening to detect air pollution-related illnesses and recommend ways to reduce air pollution exposure.
 - **Advocate with decision-makers**, including members of local governments, community leaders, school boards and others on air pollution risks and ways to mitigate the health concerns for children.
 - Train health care professionals and engage colleagues to advocate for effective inter-agency public health policies to reduce children's exposure to air pollution.
 - Integrate children's environmental health in curricula in post-secondary institutions and particularly in medical and paramedical sciences, nursing and midwifery schools.
 - **Invest in 'net zero' and more resilient health systems**, reducing pollution and emissions.
 - For areas with specific air pollution seasons, **strengthen health sector readiness** in advance in terms of information, human and financial resources, medicine and equipment.
 - **Conduct research on the effects of air pollution on children's health** as well as potential treatment, prevention and management.
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Industries are major polluters, and air pollution is a multifaceted problem costing the world US\$8.1 trillion or 6 per cent of global GDP in 2019.⁷

- **Set ambitious targets** with a clear action plan to reduce emissions, such as mapping air pollution footprints, investing and using clean technologies and raising awareness among employees and customers about air pollution.
- **Go beyond industrial compliance of environmental and health regulations** to undertake due diligence to ensure children are protected from air pollution throughout the supply chain.
- **Create new business opportunities offering green technology** and green services to consumers.
- Partner with governments, civil society and other stakeholders to protect children's health from air pollution caused by industrial processes.
- Collect and share disaggregated data and evidence with the public sector that can close information gaps about air pollution and children's health.

⁷ https://blogs.worldbank.org/voices/we-need-healthier-air-healthier-planet?cid=env_tt_environment_en_ex

Caregivers and the public share a responsibility to reduce their contribution to air pollution and take measures to protect children.

- **Seek information on the air quality and sources of air pollution exposure in your community** so you can take measures to protect your child and yourself.
- Ensure your child is up-to-date on all recommended immunizations.
- Schedule your child's time outside for when air pollution is lower and adapt the intensity of physical activity depending on the air quality.
- **Use cleaner fuels and technologies to cook, heat and light your home** – choose electricity, natural gas, liquefied petroleum gas, biogas or solar stoves or ovens if possible.
- Cook in a well-ventilated area or cook outside if air quality is better and it is possible.
- Keep children away from smoking fireplaces.
- Stop smoking near children.
- Don't burn candles or incense or use air fresheners that add toxic chemicals to the air.
- Avoid burning household and agricultural waste, especially close to where children live and play.
- Compost and use local services for recycling and garbage disposal if possible.
- Step back from the road if you see a polluting vehicle approaching and carry your baby or young child so they are not at the same height as exhaust emissions.
- Avoid busy roads and take quieter streets with less traffic and vehicle emissions if possible.
- Follow guidelines during a fire, from evacuation to when it is appropriate to return home, to avoid exposing your child and yourself to smoke and ash.



Healthy Environments
for Healthy Children

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for every child

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