

Quick read:

Position statement on air pollution in the UK

1. The issue



Exposure to air pollution is the second leading risk factor for death in children under 5, both globally and in the UK.¹

Fine particulate matter (PM_{2.5}) and nitrogen dioxide (NO₂) are responsible for a significant proportion of air pollution's health impacts.^{2,3} The UK government and devolved nations have not yet committed to meeting the 2021 WHO Air Quality Guidelines, which outline air pollution limits designed to protect public health.

UK sources of PM _{2.5} emissions in 2022		UK sources of NO _x emissions in 2022	
Source	%	Source	%
Domestic woodburning	22%	Road transport (tailpipe)	30%
Road transport (road/tyre/brake wear)	18%	Combustion in energy industries	19%
Industrial processes and product use	17%	Non-road transport (air/rail/shipping)	15%

Compiled using data from: Martel E, 2024 'Emissions of air pollutants in the UK' Defra

Pollutants from outdoors enter buildings and impact indoor air quality. Air quality inside buildings is also influenced by building design, construction materials, furnishings, dust, mould, pets, plants, and activities such as cooking, cleaning, smoking, and woodburning.

2. Why it matters

Children are especially vulnerable to air pollution because they inhale more air than adults in proportion to their body weight, breathe closer to ground-level sources of air pollution such as vehicle exhausts, and are less able to control their exposure than adults.¹

Case study: Ella

Ella Kissi-Debrah, a healthy child, developed severe asthma at 7 years old, which was worsened by breathing polluted air, especially from traffic emissions near her home in Southeast London. This led to her tragic death at age nine. Her death certificate is the first in the world to list air pollution as a cause of death and her case highlights the critical need for stricter air quality measures and better education on the health impacts of air pollution.

Case study: Awaab

Awaab Ishak, a two year-old living in Rochdale, tragically died in December 2020 due to severe respiratory problems caused by exposure to black mould in his home, despite his father repeatedly raising the issue with his housing provider. His death has prompted legal reforms known as "Awaab's Law," requiring timely repairs for damp and mould in social housing.

Child health impacts of air pollution

Stage	Short term	Longer term
Gestation	<ul style="list-style-type: none"> • Foetal growth and development • Low birth weight • Preterm birth 	<ul style="list-style-type: none"> • Early life mortality • Chronic disease in later life
Infancy	<ul style="list-style-type: none"> • Respiratory infections 	<ul style="list-style-type: none"> • Infant mortality
Childhood	<ul style="list-style-type: none"> • Asthma • Reduced cognitive function • Skin and eye irritation 	<ul style="list-style-type: none"> • Lung growth and function • Brain development and maturation
Adolescence	<ul style="list-style-type: none"> • Narrowing of arteries • Psychotic experiences • Metabolic disturbance 	<ul style="list-style-type: none"> • Cardiovascular disease • Obesity • Type 2 diabetes

Compiled using evidence summarised at: www.rcpch.ac.uk

Health inequalities:

Structural inequalities cause certain groups, especially socioeconomically disadvantaged households, to suffer disproportionately from air pollution. The most deprived 20% of neighbourhoods in England experience higher air pollution levels than the least deprived, even after adjusting for other factors.

Economic impact:

Outdoor air pollution incurs significant economic losses, costing \$2.9 trillion globally and 2.6% of the UK's GDP annually, while also burdening healthcare systems. In 2017-19, an estimated 7% of paediatric asthma admissions in London were linked to spikes in air pollution.⁴ Achieving WHO air quality guidelines could boost the UK economy by £1.6 billion per year.

3. Our recommendations

	Theme	Recommendation	For attention of:
1	Right to clean air	<ul style="list-style-type: none"> i. Enact a Clean Air Act to establish a legal right to clean air in all four nations of the UK. ii. Meet the 2005 WHO Air Quality Guidelines for PM2.5 by 2030, and develop a clear strategy to meet the 2021 WHO Air Quality Guidelines. 	UK government and devolved administrations; Secretary of State for Environment, Food and Rural Affairs
2	NHS	<ul style="list-style-type: none"> iii. The NHS should lead by example by mandating the implementation of the Clean Air Hospital Framework across all NHS organisations. 	NHS England, Scotland and Wales; HSC Northern Ireland
3	Schools	<ul style="list-style-type: none"> iv. Ensure children’s health in schools is protected by monitoring outdoor PM2.5 and NO2 levels in all UK schools. Grant local authorities the power to close or divert roads when air pollution near schools exceeds limits. v. Implement a national rollout of the school streets initiative, ensuring adequate access for disabled students and those needing to travel by taxi. Improve infrastructure to facilitate active travel to school where school streets are not feasible. 	Department for Education (and equivalent departments in the nations); local authorities
4	Transport	<ul style="list-style-type: none"> vi. Invest to ensure half of urban journeys in the UK can be walked or cycled by 2030. vii. Ensure all UK residents have access to regular, affordable and accessible public transport systems. viii. Implement clean air zones with careful consideration to economically disadvantaged groups and disabled people, and alongside simultaneous improvements in public transport and active travel infrastructure. 	Department of Transport (and equivalent departments in the nations); Metro Mayors; local authorities
5	Housing	<ul style="list-style-type: none"> ix. In England, expand Awaab’s Law to include protection for private rented households. In Scotland, Wales and Northern Ireland, introduce and expand Awaab’s Law to include protection for private rented households. x. Ensure that retrofitting schemes focused on improving insulation include clear minimum ventilation requirements and enforce these. 	Ministry of Housing, Communities and Local Government (and equivalent administrations in the nations)
6	Wood-burning	<ul style="list-style-type: none"> xi. Phase out domestic woodburning in urban areas, assist rural residents to transition away from wood as a primary heating source, and support those in fuel poverty with fuel cost assistance. xii. Increase public awareness on the health harms of woodburning. 	Department for Environment, Food & Rural Affairs (and equivalent departments/administrations in the nations); Metro Mayors; local authorities;

1 Health Effects Institute, 2024. State of Global Air 2024. Special Report. Boston, MA: Health Effects Institute.

2 Fuller G, Friedman S, and Mudway I, 2023 Impacts of air pollution across the life course – evidence highlight note. Environmental Research Group, Imperial College London

3 UK Health Security Agency ‘Statement on the differential toxicity of particulate matter according to source or constituents: 2022’

4 Environmental Research Group, Imperial College London, 2022 ‘Health impact assessment of current and past air pollution on asthma in London’ Imperial College London: Projects