

# Bolder action needed on air pollution following new WHO guidelines

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New air quality guidelines released by the WHO show there are harms to human health even at the lowest observable levels of exposure.

Members of Imperial's Network of Excellence on Air Quality (NExAir) are supporting the World Health Organization's (WHO) new Air Quality Guidelines, and say they strongly encourage the UK government to take ambitious actions to reduce air pollution everywhere and as soon as possible.

The updated guidelines provide an important evidence base for air quality legislation around the world. They were previously updated 16 years ago, and the new guidelines recommend stricter air quality standards.

For example, PM<sub>2.5</sub> (small particles that can reach the lungs) guideline values for annual concentrations are now twice as stringent, and for nitrogen dioxide (NO<sub>2</sub>) they four times more stringent. This, say experts, emphasizes that there is no safe level of air pollution.

## **Turning point**

Dr. Audrey de Nazelle from the Centre for Environmental Policy and outgoing Network of Excellence on Air Quality chair at Imperial said: "The new WHO guidelines send an unequivocal message that everyone everywhere will benefit from reducing air pollution, and present an opportunity to mark a turning point in the way we approach air pollution globally.

"Every sector should contribute to this improvement. Politicians need to take bold action to enable transitions away from fossil fuel, car reliance, inadequate agricultural and industry practices and unsustainable consumption patterns."

She also points out that the new guidelines come at an opportune moment in the UK, when stricter standards could become embedded in the Environment Bill. The House of Lords has voted in favor of an

amendment to have the WHO 2005 air quality guideline values on PM<sub>2.5</sub>—pollution particles of a certain size—included within the Bill. In October, the Bill in its entirety will be voted on by peers, after which it will go back to the House of Commons for MPs to vote on amendments made in the Lords.

Dr. de Nazelle added: "New legislation is needed to encourage air pollution reductions everywhere, and not just in pollution hot spots, to achieve healthy [air quality](#) for all. The Environment Bill is an opportunity to do that. Now is the time for UK politicians to show by their vote that they understand the gravity of air pollution's impacts and to take urgent and bold action, reflecting the new updated WHO guidelines that protect our [health](#)."

## **Protecting health**

Air pollution poses a great risk to [human health](#): it is linked to major lung and heart diseases, diabetes, cancer, premature mortality and emerging evidence points to adverse effects on pregnancy, cognitive development in children, dementia and mental health, as well as risk of dying from COVID-19.

Air pollution ranks fourth among major risk factors for global disease and mortality. In the UK, it contributes to between 28,000 and 36,000 deaths annually, with an estimated economic cost of more than £20 billion every year.

Dr. Laure de Preux, Assistant Professor of Economics at the Imperial College Business School, said: "The NHS and social care alone will spend more than £5 billion to look after patients suffering from the consequences of PM<sub>2.5</sub> and nitrogen dioxide exposure in England between 2017 and 2025 if air pollution remains unchanged.

"Reducing air pollution will not only lead to enormous and immediate improvements in the health and quality of life of all citizens, but it will help to lower the medical costs borne by society for the treatment of long-term air pollution-related diseases."

Dr. Ben Barratt, from the School of Public Health and incoming Network of Excellence on Air Quality chair at Imperial, said: "As this long-awaited update demonstrates, evidence of the scope and severity of the health and economic impacts of air pollution in the UK and across the world has strengthened in recent years.

"We know what actions and policies are needed to improve quality of the air we breathe, we now need to accelerate their implementation with greater ambition and urgency."

Ph.D. student Aina Roca Barcelo from the School of Public Health at Imperial said: "If the water you drank was brown and toxic, would you drink it? Then, why should we be okay with breathing toxic air? Air is such an essential yet overlooked resource and we need to protect it.

"The evidence is unequivocal, the effects of air [pollution](#) are numerous and go much further than the well-established effects on the respiratory system, impacting most of our body organs as well as mental health. The new WHO guidelines should be taken as a wake-up call to change this situation; for us, for the planet, and for the generations to come."

## **International support**

The Imperial researchers have also expressed support for a Joint Statement issued by health experts, scientists, and patient representative groups supporting the new WHO Air Quality Guidelines and urging governments to implement bold and ambitious clean air policies without delay in order to protect health and wellbeing.

The statement, led by the International Society for Environmental Epidemiology (ISEE) and the European Respiratory Society (ERS), and endorsed by more than 40 medical, public health and scientific societies, proposes concrete ways in which legislation should advance, including investing in, implementing, and effectively monitoring and enforcing clean air policies to protect and improve public health and feed into efforts for climate neutrality.

Dr. de Nazelle, who is a co-author on the ISEE/ERS statement, said: "Society will benefit in multiple ways from ambitious government action to reduce [air pollution](#), including from reducing greenhouse gases to help mitigate climate change, and promoting more liveable cities where healthy behaviors are encouraged."

Provided by Imperial College London

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