Review highlights lifelong health impacts of air pollution

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A new review of evidence highlights the impact air pollution has on health across the life course, from before birth through to old age.

The report was commissioned by the Greater London Authority via Imperial Projects and carried out by researchers from Imperial College

London's Environmental Research Group.

Bringing together the findings from a range of key studies, the review highlights the serious and life-limiting risks of air pollution and how it affects multiple aspects of physical and mental health over the course of pregnancy and birth, child development, through to adulthood.

The authors looked at studies focused on the links between air pollution and ill health, including pollutants such as black carbon (or soot), small particulate matter ($PM_{2.5}$), nitrogen dioxide (NO_2), nitrogen monoxide (NO), and sulphur dioxide (SO_2).

Among the key findings is evidence suggesting air pollution impacts fertility, by lowering sperm count and motility. Air pollution can also impair normal fetal development in the womb, increasing the risk of miscarriage, low birth weight and pre-term births.

The review also highlights that children living in London are particularly at risk of developing lifelong, chronic conditions, including poorly developed lungs, asthma, high blood pressure, inattention and hyperactivity, and mental illness.

Further, the health impacts of air pollution exposure continue well into old age, increasing the risk of stroke, dementia, cancer, multiple longer-term illness including respiratory and cardiovascular disease, and early death.

Dr. Gary Fuller, Senior Lecturer in Air Quality Measurement from Imperial's Environmental Research Group and lead author of the report, said, "There is increasing evidence that impacts of air pollution are hiding in plain sight in the burden of chronic illness that affects so many people.

"These air pollution impacts affect our quality of life and have a large cost to society through additional health and social care costs, as well our ability to learn, work and contribute to society.

"The latest evidence, reflected in the new WHO guidelines, tell us that current levels of air pollution will be affecting everyone in London, including those living in the least polluted suburbs, and especially those with pre-existing vulnerabilities."

More information: Impacts of air pollution across the life course—evidence highlight note. PDF

Provided by Imperial College London