

London's air pollution increases dementia risk

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Living in a city as polluted as London can increase your risk of developing dementia by at least 17 per cent compared with someone who lives with the cleanest air, a study has found.

Scientists from the University of Cambridge have conducted one of the largest analyses of pre-existing research to date into the impact of air pollution on the brain, confirming that it appears to substantially increase dementia risk.

Published in the Lancet Planetary Health journal, the research looked at data collected by 51 studies from a total of 29 million people. Researchers from the university's Medical Research Council epidemiology unit concluded that tiny particles of pollution known as PM2.5, which have a diameter of 2.5 microns or less, were the most potent. The concentration is measured in micrograms per cubic meter (mcg/m³).

Every increase of 10 mcg/m³ was associated with a 17 per cent rise in the risk of developing dementia. The average roadside measurement of these pollutants in London is 10mcg/m³, illustrating that someone living in London would have a 17 per cent higher risk of dementia compared to someone living in an area with air free of PM2.5 pollution.

Every increase of 10mcg/m³ in nitrogen dioxide was associated with a 3 per cent rise in dementia risk.

London has levels of 33mcg/m³, increasing dementia risk by 10 per cent for Londoners compared with those living with clean air.

Each microgram increase in soot was associated with a 13 per cent increase in dementia risk. The levels in London are 0.93mcg/m³, increasing dementia risk by around 12 per cent compared with those with clean air, while the level in Birmingham is 1.51mcg/m³, increasing the risk by almost 20 per cent.

The risk is not necessarily cumulative, meaning that the increases associated with each of the three pollutants cannot simply be added together.

Dr Haneen Khreis, the study's senior author, said: "Epidemiological evidence plays a crucial role in allowing us to determine whether or not air pollution increases the risk of dementia and by how much.

"Our work provides further evidence to support the observation that longterm exposure to outdoor air pollution is a risk factor for the onset of dementia in previously healthy adults.

"Tackling air pollution can deliver long-term health, social, climate, and economic benefits. It can reduce the immense burden on patients, families, and caregivers, while easing pressure on overstretched healthcare systems."

Britain's air has, however, become dramatically cleaner in the past decade as levels of two major pollutants have fallen by around a third, according to research by scientists at the University of Reading. They surveyed 503 sites across the country, finding an average 35 per cent drop in levels of nitrogen dioxide and a 30 per cent drop in PM 2.5. The fall in nitrogen dioxide levels has been attributed to the uptake of electric cars and more efficient petrol engines, while clean air zones in city such as London, Birmingham and Glasgow have played a part.

There were still 40 days last year when levels of the pollutant exceeded World Health Organisation recommendations, but this was a marked fall from 136 days in 2015.

Clare Rogowski, also from the University of Cambridge, said: "Efforts to reduce exposure to these key pollutants are likely to help reduce the burden of dementia on society.

“Stricter limits for several pollutants are likely to be necessary targeting major contributors such as the transport and industry sectors.”