

Air pollution increases risk of depression and anxiety

Study found higher risk even at levels that meet current safety guidelines

Kat Lay, Health Editor - Wednesday February 01 2023, 6.15pm, The Times

Being exposed to air pollution increases people's chances of developing depression and anxiety, even at levels that meet current safety guidelines, a study has found.

An international team of researchers concluded that lowering levels of pollutants on British streets could reduce the incidence of mental ill health.

Scientists from **Peking University**, the **University of Oxford**, and **Imperial College London** used data on just over 389,000 Britons taking part in the UK Biobank.

They calculated their annual exposure to various types of air pollution, including fine particles, nitrogen dioxide (NO₂), and nitric oxide (NO).

Over a decade, a total of 13,131 patients were diagnosed with depression and 15,835 with anxiety.

The quarter of people with the highest levels of pollution around their homes were 16 per cent more likely to be given a diagnosis of depression than the quarter surrounded by the lowest levels. They were also 11 per cent more likely to develop anxiety.

The researchers concluded that their results “may have important implications for policy-making in air pollution control”. They added: “*Reductions in joint exposure to multiple air pollutants may alleviate the disease burden of depression and anxiety.*”

They warned: “*Increased associated risk for both depression and anxiety was observed even at concentration levels below the annual values in UK air quality standards.*”

“*Thus, the findings suggest that stricter standards or regulations for air pollution control are essential.*”

The Times Clean Air for All campaign, launched in 2019, has called for a new Clean Air Act to confer a legal right to unpolluted air for everyone in the UK, with tighter pollution limits based on World Health Organisation recommendations.

The UK legal limit for NO stands at an annual average 40 micrograms per cubic metre, some **four times higher than the WHO recommendation, which is 10 micrograms.**

The average recorded in the new study was 15.9 micrograms.

The study is observational, and so cannot prove a causal effect between the pollution levels and the mental illnesses.

While the researchers tried to take into account factors such as household income and nearby [green space](#), it is possible that elements other than the pollution itself were behind their findings.

But the researchers suggested that exposure to pollution might affect the central nervous system, potentially by increasing inflammation.

Anna Hansell, professor of environmental epidemiology at the University of Leicester, who was not involved in the study, said: *“This study provides further evidence on potential impacts of air pollution on the brain.*

“The Committee on the Medical Effects of Air Pollution (COMEAP) reported in 2022 on the evidence of associations between air pollution and cognitive decline and dementia. The report concluded that the link was likely to be causal. However, there are few studies to date on air pollution and mental health.”

She added: *“The study findings suggest that reducing air pollution levels, even when low, potentially benefits mental health. It provides further evidence in support of reducing current UK air pollution levels.”*