



# What is pollution really doing to your brain?

The cocktail of chemicals in the air could be affecting everything from dementia to our children's health, says Harry de Quetteville

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When I pop two slices of bread into the toaster for my four- and six-year-old, the monitor goes bananas. The PM count in micrograms per cubic metre races up from 9 or 10 into the hundreds. Meanwhile, the route to their primary school is one big busy road, and one of London's network of pollution monitors is nearby. It testifies to a depressing reality that of the 79 months my elder son has been alive, the air in his home city has been "safe" to

breathe, on average, for six.

The physical risks to him and his brother are well known, and worrying enough. Studies show such pollution is linked in adults to heart and lung disease, heart attacks and strokes. Children suffer reduced lung development and the development of chronic respiratory diseases.

But what about our brains? Increas-

ingly, researchers are studying pollution's effects on mental health, cognitive development and decline too – on attention spans and educational attainment in the young, on productivity in adults, and on diseases like Alzheimer's in the old. Their findings are not reassuring.

Last month, for example, came the results of a large study carried out in Barcelona, involving more than 2,200 children aged between 7 and

10. Its conclusions were stark: "Early life exposure to PM2.5 was associated with a reduction in fundamental cognitive abilities, including working memory and [attention]". Boys, it said, showed "much higher vulnerability".

Last year, a study tracking 131,000 patients, aged 50 to 79, in London found that, even with other factors like smoking and diabetes taken into account, those in the most pol-

luted areas were 40 per cent more likely to be diagnosed with dementia than those in the least polluted. Another significant study last summer, this time in China, quantified the effects of pollution on verbal and arithmetical reasoning as equivalent to "a few years of education". "As people age, the negative effect becomes more pronounced, especially for men," the study noted.