

# Long-term exposure to traffic noise may impact weight gain in the UK population

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Transport noise is a major problem in Europe, with over 100 million people living in areas where road traffic noise exceeds levels greater than 55dB, the health-based threshold set by the EU. A new study by the University of Oxford and the University of Leicester has found a connection between traffic noise and obesity. Long-term exposure to road traffic noise, such as living near a motorway or on a busy road, was associated with an increase in body mass index and waist circumference, which are key markers of obesity. The study was published today in the journal *Environmental Research*.

"While modest, the data revealed an association between those living in high traffic-noise areas and obesity, at around a 2% increase in obesity prevalence for every 10dB of added noise," says lead author Dr. Samuel Yutong Cai, a senior epidemiologist at the University of Oxford. "The association persisted even when we accounted for a wide range of lifestyle factors, such as smoking, alcohol use, [physical activity](#) and diet, as well as when taking into account socio-economic status of both individuals and the overall area. Air pollution was also accounted for, especially those related to traffic."

This is the largest study to date on noise and obesity, looking at data on over 500,000 people

from three European biobanks in the UK, Norway and the Netherlands. Links between noise and weight were found in the UK and Norway, but not the Netherlands cohort. While the study is unable to confirm a [causal relationship](#), the results echo those from a number of previous studies conducted in other European countries.

"It is well-known that unwanted noise can affect quality of life and disturb sleep," says co-author Professor Anna Hansell, Director of the University of Leicester's Centre for Environmental Health and Sustainability. "Recent studies have raised concerns that it also may influence [general health](#), with some studies suggesting links to heart attacks and diabetes. Road traffic noise may increase stress levels, which can result in putting on weight, especially around the waist."

"On the individual level, sticking to a healthy lifestyle remains a top strategy to prevent obesity," says Dr. Cai. "However, at the population level, these results could have some policy implications. Environmental policies that target reducing traffic noise exposure may help tackle many health problems, including obesity."

Led by Professor Hansell, work is ongoing to investigate other sources of noise in the UK, such as aircraft noise, and its effect on health outcomes. In the future, long-term follow-up studies would be valuable in providing more information on how the relationship between [noise](#) and weight functions.

"As we emerge and recover from COVID-19, we would encourage the government to look at policies that could manage traffic better and make our public spaces safer, cleaner and quieter," says Dr. Cai. "Air pollution is already a well-known health risk, but we now have increasing evidence that [traffic noise](#) is an equally important public health problem. The UK should take this opportunity to think about how we can, as a society, re-organize cities and communities to support our health and

reap better health outcomes across the whole population."

Provided by University of Oxford

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