

# Air pollution can be as bad for wellbeing as partner's death, say researchers

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Credit: University of York

Exposure to Nitrogen Dioxide (NO<sub>2</sub>) can be as bad for people's happiness as bereavement or divorce, according to a study by the University of York.

Sarah J Knight and Dr Peter Howley, from the University's Environment Department, took 13 years of life [satisfaction](#) data from the British Household Panel Survey and UK Household Longitudinal Survey and compared it with detailed [air quality records](#) from the Department for Environment, Food and Rural Affairs.

In a paper - titled [Can clean air make you happy?](#) Examining the effect of [nitrogen dioxide](#) (NO<sub>2</sub>) on life satisfaction – the authors reveal that "the welfare gains to society from reductions in exposure to NO<sub>2</sub> can be substantive".

They wrote: "Our results suggest a significant and negative association between mean annual ambient NO<sub>2</sub> and life satisfaction, and moreover that these effects are substantive and comparable to that of many 'big hitting' life events."

The paper says: "We find that NO<sub>2</sub> is significantly

related with subjective wellbeing, albeit much smaller in magnitude than previous estimates after controlling for a variety of important spatial controls, such as population density and neighbourhood deprivation.

"That being said, the effect size is substantive and comparable to that of many other widely studied determinants of subjective wellbeing.

For example, the results from the study suggest that the average loss in life satisfaction experienced from an annual average ambient level of 40 µg/m<sup>3</sup> which is the legal EU limit (and exceeded in many parts of the UK) would amount to 83 per cent of the effect of marital separation, 133 per cent of the effect of widowhood and 56 per cent of the effect of unemployment, factors commonly found to be important determinants of psychological well-being.

"Given that the effect of NO<sub>2</sub> is, to some extent, experienced by everyone this suggests that the welfare gains to society from reductions in exposure to NO<sub>2</sub> can be substantive," the authors say.

This research supports much of the epidemiological literature which suggests that exposure to NO<sub>2</sub> can have a substantive detrimental effect on health (e.g. respiratory diseases) which will of course in turn affect individuals' well-being.

There is also an emerging body of epidemiological research to suggest that air pollution may affect mental and cognitive health.

The authors say [exposure](#) to NO<sub>2</sub> is likely to have a negative aesthetic [effect](#) for many (e.g. through sight, smell and even taste), which again is likely to affect [life satisfaction](#).

The study also supports the growing body of literature which indicates that aspects of the

physical environment can play a significant role in our quality of life.

Provided by University of York

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