

# Potentially damaging surface ozone levels rose in lockdown

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Less traffic on the roads during the first lockdown led to a reduction in air pollution but may have caused potentially damaging surface ozone levels to rise, a new study has revealed.

The study—led by the University of York—shows levels of [nitrogen dioxide](#) (NO<sub>2</sub>) down on average across the UK by 42 percent, but surface ozone (O<sub>3</sub>) increased by 11 percent on average.

Surface, or ground-level ozone, can trigger a variety of health problems, particularly for children, the elderly, and people of all ages who have lung diseases such as asthma.

Scientists believe our warm and sunny spring weather may have been a contributing factor.

The report concludes that if the COVID-19 lockdown is taken as an example of how air quality will respond to future reductions in vehicle emissions—with more electric vehicles being introduced—it serves as a warning that the problem of O<sub>3</sub> must also be considered.

Professor James Lee from the Department of Chemistry and the National Centre for Atmospheric Science said during the first lockdown levels of O<sub>3</sub> were the worst in the South of England.

Professor Lee added: "The problem is being created by the change in chemistry between NO<sub>x</sub> (nitrogen oxide) and O<sub>3</sub>. The main reason is the change in the nitrogen dioxide levels but the warm sunny weather in April and May also increased the ozone level. As a result we found UV radiation across the UK was higher in 2020 compared to previous years, with the largest increases in southern England.

"London, Chilton in Oxfordshire and Camborne in Cambridgeshire saw increases of around 50% compared to previous years, with Glasgow and Inverness showing smaller increases of around 30%.

"These results are a cautionary tale. As well as looking at how we reduce levels of nitrogen dioxide by cutting diesel and petrol emissions, we also need to keep an eye on what is happening with [ozone](#) so we don't create other forms of pollution dangerous to human health."

The report says in China nitrogen oxide reductions have also led to

increases in O<sub>3</sub> and air quality abatement strategies are being developed in order to offset the problem. This can be achieved by controlling [volatile organic compounds](#) (VOCs)—which are gases emitted into the air from products or processes of industry and other man-made activity.

Professor Lee added: "Our research shows it will be vital to control man-made VOCs to avoid any health gains made by the reduction of NO<sub>2</sub> being offset by O<sub>3</sub> increases."

Provided by University of York

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