

# Study evaluates the association between environmental factors and chronic obstructive pulmonary disease

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High air pollution and living far away from blue or green spaces negatively influence health-related quality of life for people living with chronic obstructive pulmonary disease (COPD), according to a recent study from researchers with the University of Alberta and the Barcelona

Institute for Global Health (ISGlobal).

The study, published in the journal *Environmental Research*, evaluated, for the first time, the association between a series of environmental factors and disease effects in more than 400 patients living in Barcelona, Spain and its nearby provinces. In the study, researchers determined the exposure of patients to air pollutants, traffic noise and land-surface temperatures. They also measured how far patients lived from green or blue spaces such as parks or rivers. They found that exposure to high levels of air pollution were associated with worse health-related quality of life. Patients living further than 500 metres away from a blue or [green space](#) also reported worse health-related quality-of-life scores.

"If you spend time in any blue or green space—like in the forest, a park, or near to the ocean or to a river—it actually gives immense benefit to [mental health](#)," said Subhabrata Moitra, first author of the paper and a post-doctoral fellow in the U of A's Division of Pulmonary Medicine. "And if you have access to those places, then you're more likely to achieve a better physical activity by walking or jogging, and this also helps in improving one's physical and mental health as well."

Land-surface temperatures and noise pollution were not found to have an impact on health-related quality of life, although the researchers say there were mitigating factors that need to be further explored. The authors also acknowledge that the findings show association, and not causality, and that further studies are needed to better understand the contribution of each pollutant.

COPD, a condition that causes obstructed airflow from the lungs, is expected to be the second most predominant illness in the world by 2030. According to the Public Health Agency of Canada, over two million (10 per cent) Canadians aged 35 years and older were living with diagnosed COPD in 2012—2013.

According to Moitra, the findings underscore the importance of urban planning for cities to account for clean air and increased access to blue and green spaces.

"A large part of the population is living with COPD. If we are able to provide a clean and green environment to those patients, that will help in improving their quality of life," said Moitra.

**More information:** Subhabrata Moitra et al, Roles of the physical environment in health-related quality of life in patients with chronic obstructive pulmonary disease, *Environmental Research* (2021). [DOI: 10.1016/j.envres.2021.111828](https://doi.org/10.1016/j.envres.2021.111828)

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