

Less Air Pollution and More Access to Green or Blue Spaces: A Recipe to Improve the Life Quality of People with COPD

A study evaluates, for the first time, the association between a series of environmental factors and disease effects in over 400 patients

Barcelona, September 2, 2021- Air pollution and greater distance with green or blue spaces negatively impact the health-related quality of life in patients with chronic obstructive pulmonary disease (COPD), according to [a new study](#) led by the Barcelona Institute for Global Health (ISGlobal), an institution supported by "la Caixa" Foundation. The findings highlight the **need for implementing urban policies that improve the life quality of a great number of people living with respiratory diseases** across the world.

The health-related quality of life has become one of the most relevant parameters to measure the progression of chronic obstructive pulmonary disease (COPD). "We know that several clinical and psychological factors can affect this parameter, but little is known on the effect of environmental factors," explains **Judith Garcia-Aymerich**, ISGlobal researcher. Thus, Garcia-Aymerich and her team assessed, for the first time, the **association between health-related quality of life and exposure to different environmental factors in over 400 COPD patients** with different levels of disease severity, from moderate to high.

The patients, all of them residing in Barcelona, underwent a COPD assessment test and answered a clinical questionnaire. The research team determined the residential exposure of each patient to air pollutants (NO₂, PM_{2.5} and PM₁₀ fine particles, and PM_{2.5} absorbance), traffic noise, land surface temperatures, and distance to green or blue (water) spaces. They found that exposure to high levels of NO₂ and PM_{2.5} absorbance (an indicator of black carbon emanating from combustion) were associated with worse assessment and mental health questionnaire scores. "This might be explained by the restorative effect of blue and green spaces, although it could also be related to the fact that these spaces encourage greater physical activity," says **Subhabrata Moitra**, first author of the study.

The authors acknowledge that, being a cross-sectional study rather than a longitudinal one, they cannot demonstrate causality, and that further studies are needed to better understand the contribution of each pollutant. "However, this study, performed for the first time on a Mediterranean population, provides evidence that **air pollutants (particularly NO₂ and black carbon) and the distance to green or blue spaces negatively affects the health-related quality of life in COPD patients**," says Garcia-Aymerich.

These results can help clinicians to provide recommendations that improve the quality of life of their COPD patients, for example by avoiding traffic zones or being close to blue and green spaces. They also underline the **need to limit air pollution in cities and redefine urban policies** that improve the quality of life of the great number of people who live with respiratory diseases across the world.

These findings are published shortly before the celebration of the European Respiratory Society Congress 2021, which will take place virtually September 5-8.

Reference

S Moira, M Foraster, A Arbillaga-Etxarri, et al. *Roles of the physical environment in health-related quality of life in patients with chronic obstructive pulmonary disease*. *Env Res*. Jan 2022, 11828. <https://doi.org/10.1016/j.envres.2021.111828>

About ISGlobal

The Barcelona Institute for Global Health, ISGlobal, is the fruit of an innovative alliance between the "la Caixa" Foundation and academic and government institutions to contribute to the efforts undertaken by the international community to address the challenges in global health. ISGlobal is a consolidated hub of excellence in research that has grown out of work first started in the world of health care by the Hospital Clínic and the Parc de Salut MAR and in the academic sphere by the University of Barcelona and Pompeu Fabra University. Its working model is based on the generation of scientific knowledge through Research Programmes and Groups, and its translation through the areas of Training and Analysis and Global Development. ISGlobal has been named a Severo Ochoa Centre of Excellence and is a member of the CERCA system of the Generalitat de Catalunya.

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