

Social position determines pregnant women's exposure to air pollution

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Socio-economic position determines the environmental hazards such as air pollution and noise to which pregnant women are exposed in urban areas, although the nature of the association varies from city to city. This

was the main conclusion of a new study conducted with the participation of the Barcelona Institute for Global Health (ISGlobal).

The urban exposome is the set of environmental factors that an individual is exposed to in an urban environment over the course of his or her life. These factors include [air pollution](#), noise, meteorological factors and contact with green spaces. The unequal exposure to different factors depending on social, economic and demographic factors is known as environmental inequality.

The study was recently published in *Environmental Health Perspectives*. The primary aim was to describe the urban exposome of 30,000 pregnant women in nine European [urban areas](#): Bradford (United Kingdom); Poitiers and Nancy (France); Sabadell, Valencia and Gipuzkoa (Spain); Kaunas (Lithuania); Oslo (Norway); and Rhea (Greece). The study found associations between participants' [socio-economic status](#) and 28 environmental indicators, including exposure to air pollutants (nitrogen dioxide and suspended particles less than 2.5 µm and 10 µm in diameter), traffic noise, proximity to natural spaces, public transport, facilities and walkability.

As in previous studies, the findings were mixed. In Bradford and Valencia, pregnant women with a low socio-economic status were exposed to higher levels of [environmental hazards](#). In Sabadell and Oslo, however, it was high-status women who lived in the least healthy environments.

"This study allowed us to observe differences associated with socio-economic position in various cities," said Oliver Robinson, researcher at Imperial College London and lead author of the study. "This does not necessarily mean that more deprived women are always exposed to higher levels of hazards. Depending on the city you're looking at, the association can go one way or the other. However, in a number of cities,

deprivation is associated with simultaneous exposure to [higher levels](#) of multiple hazards associated with city living. Our study focused on [pregnant women](#) and these situations could contribute to the inequalities in health that we observe in the paediatric population," adds Robinson.

ISGlobal researcher Xavier Basagaña, coordinator of the study, concluded: "These findings are important for local authorities and urban planners, who need to understand the nature of the environmental inequities in their cities so that they can remedy them and work towards reducing health inequities."

More information: Oliver Robinson et al, The Urban Exposome during Pregnancy and Its Socioeconomic Determinants, *Environmental Health Perspectives* (2018). [DOI: 10.1289/EHP2862](https://doi.org/10.1289/EHP2862)

Provided by Barcelona Institute for Global Health

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