

# A study shows that smoke from forest fires aggravates the respiratory health of children

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Research coordinated by lecturer of the Faculty of Nursing at the University of Valencia Ferran Ballester has shown that air pollution from forest fires aggravates the respiratory health of children. The results of this work have just been published in *Environmental Geochemistry and Health*.

The study has been promoted by the Joint Research Unit in Epidemiology and Environmental Health, and has analysed the effects on the [respiratory health](#) of [children](#) of the two large wildfires that occurred simultaneously in forest areas close to the city of Valencia during the month of July 2012. The work was carried out within the framework of the INMA Project - Childhood and Environment ([www.proyectoinma.org](http://www.proyectoinma.org)), a research network created by Spanish groups to study the most important environmental contaminants in air, water and diet during pregnancy and [early life](#), as well as their effects on children's growth and development.

Lecturer Ferran Ballester explained that they examined the effects of wildfires during twelve days while these were active, compared to the twelve days before the fires. In general, one of the conclusions of the investigation, which involved telephone conversations with the parents of 460 children, proves that exposure to smoke from wildfires "was associated with increased [respiratory problems](#) in children, which affected particularly those susceptible to suffer from asthma and rhinitis".

Parents were interviewed about both the [health](#) of their children and about the measures taken to prevent exposure to smoke from fires, among other issues. 82.4% felt the smoke outside their house, 40% felt it at home and more than 90% of families observed the presence of ash.

Ballester comments that the findings of the study -led by researcher Ana Maria Vicedo, a member of the group and now at the University of Basle- reveal that exposure to smoke from wildfires "increased threefold the probability of having itchy and watery eyes and a sore throat". In addition, "a significant interaction was detected between rhinitis and asthma and episodes of sneezing, watery and itchy eyes, and between asthma and a sore throat; that is, children with asthma or rhinitis were more likely to suffer these effects associated with the smoke from wildfires", adds the lecturer of the University of Valencia.

Researchers conclude that this study provides scientific evidence that wildfires, such as those that devastated a large part of the province of Valencia in 2012, "affect the health of children, especially of those who are more susceptible".

## **Climate change and public health**

Meanwhile, considering the predictions as regards climate change that announce an increased risk of fires, according to the authors, "it is crucial that we identify the effects of [forest fires](#) on health and improve people's and managers' understanding of the problem, as well as design public health strategies in order to protect both the most vulnerable individuals and the rest of citizens". "Forest fire prevention and disaster preparedness are priority issues for the protection of the environment and of the health of the population", the scientists insist.

Besides Ana Maria Vicedo and Ferran Ballester, the study also engaged Ana Esplugues, lecturer in the Department of Nursing at the University

of Valencia; Carmen Iñíguez, researcher from the Area of Environment and Health of FISABIO, and Marisa Estarlich, researcher of CIBERESP and adjunct lecturer in the Department of Nursing at the University of Valencia.

The main strands of work of the Joint Research Unit in Epidemiology, Environment and Health made up of the University of Valencia, FISABIO and the Universitat Jaume I revolve around the relationship between environmental factors -in the broad sense including diet and the social environment- and health, especially of children. Among the projects that they carry out it is worth highlighting INMA, a study on children and the environment in which other national and international research groups participate.

**More information:** "Health effects of the 2012 Valencia (Spain) wildfires on children in a cohort study." *Environmental Geochemistry and Health*. 2015. 29 Jul. PMID: 26215426

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