- PRESS RELEASE -

Particulate Matter Takes Away 125,000 Years of Healthy Life from Europe’s Child Population

A study analyses the burden of disease of seven environmental hazards to children in the 28 countries of the European Union

*Barcelona, April 24, 2019*. A study led by the Barcelona Institute for Global Health (ISGlobal), a centre supported by “la Caixa”, has estimated the disease burden for various environmental exposure factors among the child population of Europe, and once again highlights the risk posed by air pollution. The study calculates that every year exposure to particulate matter of less than 10 micrograms (PM$_{10}$) in diameter and less than 2.5 micrograms (PM$_{2.5}$) takes away 125,000 years of healthy life from children in Europe.

This analysis, published in the *International Journal of Environmental Research and Public Health*, assessed the burden of disease for the child population of the 28 countries in the European Union for seven environmental risk factors: air pollution - PM$_{10}$, PM$_{2.5}$ and ozone - passive tobacco smoke, humidity, lead and formaldehyde.

Population and health data were compiled from several European databases and the analysis of the environmental burden of disease was conducted in line with the comparative risk assessment approach proposed by the World Health Organisation (WHO) and the Global Burden of Disease (GBD) project. The researchers calculated disability-adjusted life years (DALYs), a measure of overall burden of disease expressed as the number of years of healthy life lost to illness, disability or premature death.

The conclusions show that the environmental exposure factors included in this study take away 211,000 years of healthy life from the European population under 18 years old, accounting for 2.6% of the total. Air pollution (PM$_{10}$, PM$_{2.5}$ and ozone) was the most harmful exposure, causing up to 70% of the years of healthy life lost, followed by passive tobacco smoking at 20%.

“The environmental factors included in the study were chosen according to various criteria: they are the exposures for which the most data exist at national level and also those for which there is evidence of a causal relationship with effects on health, among others,” states David Rojas, the lead author of the study.

The researcher emphasises that “out of all the risks studied, particulate matter are those that cause the greatest burden of disease, as they are associated with respiratory, cardiovascular and neurological illnesses, among others, as well as with higher infant mortality.” “In fact, their real impact may be higher than that indicated by our estimates, as we have only taken into account their effects on infant mortality and asthma in the case of PM$_{10}$, and lower respiratory tract infections in the case of PM$_{2.5}$.”
Out of the 28 countries included in the study, 22 - the exceptions were Luxembourg, Ireland, Sweden, Estonia, Finland and Denmark - **reported PM$_{10}$ levels above those recommended by the WHO** (annual average below 20 g/m$^3$) and **all of them showed ozone levels above those considered safe** (an average of 100 g/m$^3$ over eight hours).

**Mark Nieuwenhuijsen**, coordinator of the study and of the Urban Planning, Environment and Health Initiative at ISGlobal, points out that “this study shows the pressing need to implement effective policies to reduce children’s exposure to environmental risk factors throughout Europe, paying special attention to air pollution and passive smoking”. The researcher also points out that “**Common European databases** need to be created to compile and harmonise exposure data for environmental risk factors, especially in childhood, as well as conducting epidemiological studies of multiple environmental risk factors”.

**Reference**


**About ISGlobal**

The Barcelona Institute for Global Health, ISGlobal, is the fruit of an innovative alliance between "la Caixa" 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 Clinic and the Parc de Salut MAR and in the academic sphere by the University of Barcelona and Pompeu Fabra University. The pivotal mechanism of its work model is the transfer of knowledge generated by scientific research to practice, a task undertaken by the institute’s Education and Policy and Global Development departments. ISGlobal a member of the CERCA programme of the Generalitat de Catalunya.

**ISGlobal’s Press Office**

Pau Rubio  
[mailto:pau.rubio@isglobal.org](mailto:pau.rubio@isglobal.org)  
0034 93 214 73 33 / 0034 696 912 841

Marta Solano  
[mailto:marta.solano@isglobal.org](mailto:marta.solano@isglobal.org)  
0034 93 214 73 33 / 0034 661 451 600