

EMBARGOED UNTIL 20 MAY 2020 AT 05:00 H ET

## Heat Now More Lethal Than Cold for People with Respiratory Diseases in Spain

*Women and older adults are the populations most vulnerable to high temperatures*

**Barcelona, 20 May 2020.** A new study by the Barcelona Institute for Global Health (ISGlobal), a centre supported by the "la Caixa" Foundation, has analysed deaths linked to **respiratory disease in Spain between 1980 and 2016**. The study, which analysed data on **more than 1.3 million deaths**, found that the seasonality of temperature-attributable mortality from respiratory diseases has shifted from the coldest to the **hottest months of the year**. The authors concluded that the decrease in temperature-attributable mortality during the winter months is driven not by the rising temperatures associated with climate change, but by the **adaptation of the population to lower temperatures**.

The study, published in *Nature Communications*, analysed daily temperature data and mortality counts from respiratory diseases—disaggregated by sex, age group and place of residence—from 48 Spanish provinces. Analysis of the data on **mortality due to respiratory diseases revealed an average decline in deaths of 16.5% per decade for the colder months** compared to **relatively stable figures for the warmer months of the year** over the 37-year study period. Temperature-attributable deaths from respiratory diseases went from being most frequent in January and December to reaching their peak in **July and August**.

“Two or three decades ago, respiratory diseases caused by low temperatures represented an additional risk of death in Spain,” commented lead author **Hicham Achebak**, a researcher at ISGlobal and the Autonomous University of Barcelona’s Centre for Demographic Studies. “The findings of this study show that this risk has gradually been declining. Thanks to adaptive measures, such as the more widespread use of heating and improved treatment of these conditions, **respiratory disease mortality is no longer driven by cold temperatures** and we are seeing a complete **reversal in the seasonal cycle**.”

Although this inversion was observed across all sex and age groups, there were **differences** between the groups. Vulnerability to heat increased with age and was greater in women than in men. Conversely, the effects of cold decreased with age and were less pronounced in women than in men, although the differences between groups were much less striking in this case. “In the later years of our study period, the differences in mortality risk between groups were almost imperceptible for cold temperatures, whereas the differences for the summer months were significant,” commented ISGlobal researcher **Joan Ballester**, co-author of the study. “These observations reflect a **remarkable process of adaptation to cold, but not to heat**.”

**Climate Change and Health Policy**

Climate change is associated with numerous health effects. Extreme temperatures, for example, correlate with **cardiovascular and respiratory diseases**. “This study shows that the projected decrease in the number of cold days due to global warming over the coming decades **will not contribute to a further reduction in mortality from respiratory diseases**,” commented **Achebak**.

“Deaths attributable to hot or cold temperatures are caused by a combination of exposure to extreme temperatures and the vulnerability of the population,” explained **Ballester**. “Reducing this vulnerability may require policies associated with socioeconomic development, such as those aimed at **improving health services**.”

## Reference

Hicham Achebak, Daniel Devolder, Vijendra Ingole, Joan Ballester. Reversal of the seasonality of temperature-attributable mortality from respiratory diseases in Spain. *Nature Communications*, May 2020. DOI: 10.1038/s41467-020-16273-x

## About ISGlobal

The Barcelona Institute of Global Health (ISGlobal) is the result of an innovative alliance between the “la Caixa” Foundation and academic and government institutions. The Institute was set up to contribute to the work undertaken by the international community to address global health challenges. ISGlobal has consolidated a hub of excellence in research and medical care that has its roots in work first started in the world of health care by the Hospital Clínic and the Mar Health Park 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, Policy and Global Development departments. ISGlobal is accredited as a Severo Ochoa Centre of Excellence and is a member of CERCA, the Catalan Government’s network of research centres.

## ISGlobal Press Department

Carol Pozo

[carolina.pozo@isglobal.org](mailto:carolina.pozo@isglobal.org)

669 877 850

Pau Rubio

[pau.rubio@isglobal.org](mailto:pau.rubio@isglobal.org)

696 912 841

---

Una iniciativa de:

