

IMPACT OF CLIMATE CHANGE ON HEAT-RELATED MORTALITY IN PORTUGAL: CURRENT AND FUTURE RISKS

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The observation that major causes of ill health exhibit distinct seasonal patterns suggests *a priori* that weather and/or climate influence their distribution and incidence. However, the inter-linkages between climate change and human health are complex and location specific. In this study we investigated the temperature-mortality health-related effects at local level in Portugal. We also explored possible future changes in attributable heat deaths under different climate scenarios.

The health impact assessment was done for the summer season (April – September), for Lisbon and Oporto. For each city, generalized estimating equations approach was applied to model the relationship between maximum temperature and daily mortality for all-causes, cardiovascular and respiratory diseases by age group, in the summer season. The possible future trends in heatstress were explored based on future climate scenarios.

For 1 °C increase in maximum temperature above the city-specific threshold, all-cause mortality increased by 5.6% (95% CI: 4.6; 6.6) in Lisbon and 3.0% (95% CI: 2.0, 3.9) in Oporto respectively. In both cities, stronger associations were found for respiratory diseases and the elderly group was the most vulnerable. All the future climate scenarios used indicate significant increases in days with maximum temperatures above the city-specific threshold, suggesting that the risk of dying from heatstress will very likely increase in the future.

Heatstress exposure health effects area and will remain important determinants of health in Portugal under climate change. Current and future climate change adaptation measures need to consider how effective they are/will be to reduce climate-related health risks at local level.