

and 70,000 excess deaths in Western Europe. Specific-cause mortality analysis was conducted in Portugal that year and has not been assessed since. The goal of this study is to estimate the impact of an extreme heat period in 2018 on specific-cause mortality in mainland Portugal. An ecological study was conducted comparing observed and expected deaths, from August 2 to 9, 2018, in Portugal. Two comparison periods were chosen: from July 19 to 26, 2018 (C1) and the average deaths from August 2 to 9 in 2017 and 2019 (C2). Excesses, ratios, and respective 95% confidence intervals were calculated in R. Analyses were stratified by sex, age group, and district. Consistent excess deaths were observed between comparators, showing a greater impact in circulatory diseases (C1: 283, 95% CI: 210; 356 and C2: 239, 95% CI: 164; 314) and respiratory diseases (C1: 98, 95% CI: 55; 141 and C2: 95, 95% CI: 52; 138). Regarding death ratios, with C1, the highest death ratios were observed for exposure to excessive natural heat (50.00, 95% CI: 37.11; 65.92) and ischemic stroke (4.00, 95% CI: 2.07; 6.99). With C2, the highest death ratios were observed for exposure to excessive natural heat (50.00, 95% CI 37.11; 65.92) and atherosclerosis (2.71, 95% CI 1.63; 4.24). The excesses and ratios of deaths were higher in more urbanized districts, females, and age groups above 75 years. The results suggest that the extreme heat in 2018 had an impact on mortality. Elevated death ratios and excesses were observed for various causes of death with considerable statistical magnitude and significance. These findings align with other national and international studies. Public health action is increasingly critical to mitigate the observed rise in mortality during periods of extreme heat.

Key messages:

- Specific-cause mortality analysis during extreme heat suggests a greater impact in circulatory and respiratory diseases, in residents of urbanized districts, females, and individuals of 75+ years.
- Understanding these specific causes can better inform public health actions and planning, thereby mitigating the adverse effects of extreme heat.

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Extreme Heat and Specific-Cause Mortality during Summer 2018 in Mainland Portugal

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Climate change has led to increased frequency and duration of extreme heat periods, impacting human health and mortality. During the 2003 heatwave, it was estimated that there were between 25,000