

HEAT AND CAUSE-SPECIFIC MORTALITY IN ADULTS AND INFANTS

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Background and Aims: Mortality has been shown to increase with extremely hot ambient temperatures. A fine stratification of mortality causes can be useful for improving preventive policies. Infants are often identified as a vulnerable population to extreme heat conditions; however, results on heat and infant mortality are scarce, with no studies reporting on cause-specific mortality.

Methods: The study includes all deaths in the Catalonia region (Spain) during the warm seasons of 1983-2006 (503,389 deaths). The case-crossover design was used to evaluate the association between the occurrence of extremely hot days (days with maximum temperature above the 95th percentile) and mortality. Adult and infant mortality were stratified into 66 and 8 causes of death, respectively

Results: Three consecutive hot days increased total daily mortality by 19%. The percent of all deaths that was attributable to heat was 1.59%. About 40% of those deaths did not occur during heat wave periods. The mortality causes with elevated risk included most cardiovascular and respiratory diseases, mental and nervous system disorders, some infectious and digestive system diseases, diabetes, and some external causes including suicide. In infants, the effect of heat was observed on the same day and was only detected for conditions originating in the perinatal period (Relative Risk: 1.53; 95% confidence interval: 1.16-2.02). Within perinatal causes, cardiovascular, respiratory, digestive system and haemorrhagic and haematological disorders were the causes with stronger effects.

Conclusions: Heat contributes to an increase in mortality via several causes. In infants, the first week of life is the most critical window of vulnerability.

References: