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Coastal vs continental heatwave-induced mortality: the Piraeus and Athens cases

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Background: Climate change is intertwined with excessive ambient temperatures. Humans' adaptation to wide temperature changes varies greatly for unknown reasons. Methods: This study profits from a long-lasting heatwave event of the South-eastern Mediterranean: the July 1987 event. We studied a coastal (Piraeus) and a continental city (Athens). Mortality data were collected from the Piraeus Municipality Registry, whereas Athens data were obtained from literature retrieved from PUBMED. As for Athens, we also found studies providing data for 1988 and 1992 heatwave events. Ambient temperature characteristics were obtained from the Geronikolou 1991 thesis and the National Organizations. Thom's formula was applied so as to calculate the Discomfort index for each city and event. From the death events the odds ratio and relative risk in Athens compared to the Piraeus 1987 event, were calculated. Results: the 1987 heatwave was more lethal (seven fold) in Athens than in Piraeus. The ensuing 1988 and 1992 heatwaves were less lethal, because the population learned to conform to the authorities' advice while the 1992 observed increase may be imputed to population heterogeneity due to a recent large immigration. Conclusions: The odds of dying due to a heatwave is highly dependent on lifestyle (body watering, buildings cooling, prudent circulation and walking within the city, etc), population sensitization to preventive measures and Public health policy, as well as locality and land use planning.

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