

Publication**Associations of inter- and intraday temperature change with mortality****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3472521**Author(s)** Vicedo-Cabrera, Ana M; Forsberg, Bertil; Tobias, Aurelio; Zanobetti, Antonella; Schwartz, Joel; Armstrong, Ben; Gasparrini, Antonio**Author(s) at UniBasel** [Vicedo-Cabrera, Ana Maria](#) ;**Year** 2016**Title** Associations of inter- and intraday temperature change with mortality**Journal** American journal of epidemiology**Volume** 183**Number** 4**Pages / Article-Number** 286-93

In this study we evaluated the association between temperature variation and mortality and compared it with the contribution due to mean daily temperature in 6 cities with different climates. Quasi-Poisson time series regression models were applied to estimate the associations (relative risk and 95% confidence interval) of mean daily temperature (99th and 1st percentiles, with temperature of minimum mortality as the reference category), interday temperature variation (difference between the mean temperatures of 2 neighboring days) and intraday temperature variation (diurnal temperature range (DTR)) (referred to as median variation) with mortality in 6 cities: London, United Kingdom; Madrid, Spain; Stockholm, Sweden; New York, New York; Miami, Florida; and Houston, Texas (date range, 1985-2010). All cities showed a substantial increase in mortality risk associated with mean daily temperature, with relative risks reaching 1.428 (95% confidence interval (CI): 1.329, 1.533) for heat in Madrid and 1.467 (95% CI: 1.385, 1.555) for cold in London. Inconsistent results for inter-/intraday change were obtained, except for some evidence of protective associations on hot and cold days (relative risk (RR) = 0.977 (95% CI: 0.955, 0.999) and RR = 0.981 (95% CI: 0.971, 0.991), respectively) in Madrid and on cold days in Stockholm (RR = 0.989, 95% CI: 0.980, 0.998). Our results indicate that the association between mortality and temperature variation is generally minimal compared with mean daily temperatures, although further research on intraday changes is needed.

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