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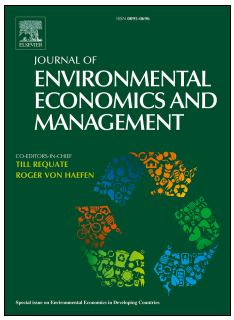

Population health effects and health-related costs of extreme temperatures: Comprehensive evidence from Germany

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Population Health Effects and Health-Related Costs of Extreme Temperatures: Comprehensive Evidence from Germany

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Abstract

This study assesses the short and medium-term impact of extreme temperatures on population health and health-related costs in Germany. For 1999 to 2008, we link the universe of 170 million hospital admissions and all 8 million deaths with weather and pollution data at the day-county level. Extreme heat significantly and immediately increases hospitalizations and deaths. This finding holds irrespective of whether we employ econometric models that are standard in economics or models that are standard in epidemiology; we compare and discuss both approaches. We find evidence for partial "harvesting." At the end of a 30-day window, the immediate health effects are, on average, one quarter lower, but this reduction is primarily evident for cardiovascular and neoplastic diseases. Moreover, aggregating at the yearly level reduces the effect size by more than 90 percent. The health-related economic costs accumulate up to €5 million per 10 million population per hot day with maximum temperatures above 30 ° C (86 ° F).

Keywords: population health effects, extreme temperatures, hot day, cold day, weather, pollution, hospital admissions, mortality, climate change
JEL classification: I12, I18, Q54, Q58

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