

# **Effects of short-term and long-term variability of weather on mortality**

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## **Abstract**

Relationships between weather and the human health have not been well understood in many aspects yet. The aims of the project are to analyze links between meteorological variables and mortality (both total mortality and mortality due to cardiovascular diseases) in the population of the Czech Republic in all seasons and on various time scales, and to determine which meteorological conditions have strong negative effects. The weather variables examined include air temperature, synthetic temperature variables, objectively determined air masses, and biometeorological indices. A special attention is devoted to the effects of sudden temperature and air pressure changes. Statistical time series models of relationships between the meteorological conditions and mortality are developed, taking into account the lags of mortality impacts after a stressful weather and their seasonal variability. The effects on mortality of the interannual variability of meteorological elements and of the recent warming trend are examined as well. Project results will have applications in predictability of health outcomes and increased mortality due to weather, and in preventive and adaptive measures to mitigate future negative impacts of weather on mortality.