

Climate change increased the number of deaths

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The increased temperatures caused by ongoing climate change in Stockholm, Sweden between 1980 and 2009 caused 300 more premature deaths than if the temperature increase did not take place. In Sweden as a whole, it would mean about 1,500 more premature deaths, according to a study from researchers at Umeå University published in the journal *Nature Climate Change*.

Global warming does not only give a general increase in temperature, but it also increases the frequency, intensity and duration of heat waves. Previous studies have shown that these changes are associated with increased [mortality](#), especially during extremely hot periods. It also speculated that mortality associated with extreme cold could decrease as a result of a [warmer climate](#).

Researchers at the Department of Public Health and Clinical Medicine, Umeå University, conducted a study in which they examined the extent to which mortality associated with extreme temperatures occurred in Stockholm during the period 1980-2009. In order to assess what can be regarded as extreme temperatures, they compared temperature data from this period with the corresponding data for the period 1900 to 1929.

The study shows that the number of periods of extremely high temperatures increased significantly over the period 1980-2009, all of which contributed to about 300 more deaths during these heat waves than had been the case without [climate change](#).

"Mortality associated with extreme heat during the relevant period was doubled, compared to if we had not had some climate change," says Daniel Oudin Åström, PhD-student in Occupational and Environmental Medicine, who conducted the study. "Furthermore, we saw that even though the winters have become milder, extremely cold periods occurred more often, which also contributed to a small increase in mortality during the winter."

Although the increase in the number of deaths due to extreme temperature overall is quite small over a 30 year period, Daniel Oudin Åström emphasises that the current study only includes the Stockholm area. If the method had been used in the whole of Sweden, or Europe, the increase in the number of deaths would have been much larger. For Sweden as a whole, it is estimated that about 1,500 extra deaths due to climate change had occurred over the past 30 years.

In addition, the researchers only examined mortality in really extreme temperatures. Therefore, the number of [premature deaths](#) caused by less extreme temperatures is not included in the study.

Daniel Oudin Åström says that despite the long-standing debate about climate change, Swedes have not changed their attitude and willingness to protect themselves against [extreme temperatures](#).

"The study findings do not suggest any adaptation of the Swedes when it comes to confronting the increasingly warmer climate, such as increased use of air conditioning in elderly housing," says Daniel Oudin Åström. "It is probably because there is relatively little knowledge in regards to increased temperatures and [heat waves](#) on health."

More information: www.nature.com/nclimate/journal/2022/11/nclimate2022.html

Provided by Umea University

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