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Global warming caused 60 percent of Swiss heat deaths in the summer of 2022

Climate change is intensifying heat, leading to a significant increase in heat-related health problems. About 60 percent of the more than 600 heat-related deaths in the summer of 2022 in Switzerland can be attributed to human-induced global warming. This is shown by a study led by the University of Bern.

The figures for the hot summer of 2022 are impressive: in Geneva, for example, it was over 30 degrees Celsius on 41 days, in Sion it was even 49 days and in Lugano 38. Switzerland has only experienced one other more extreme heatwave in recent times in the legendary summer of 2003. The high temperatures had serious consequences for health. Between June and August 2022, 623 people died due to the heat, accounting for 3.5 percent of all deaths during that period. This is the conclusion of a study led by the University of Bern and just published in the “Environmental Research Letters” journal. According to the publication, there were three times more heat-related deaths in the summer of 2022 than the average from 2009 to 2017.

Global warming caused more than 370 additional deaths

The study not only proves the excess mortality attributable to heat, it is one of the first studies worldwide to quantify the share of global warming in heat-related deaths: it is around 60 percent. “So without human-induced climate change, more than 370 people would not have died in Switzerland in the summer of 2022 as a result of the heat,” says Dr. Ana Vicedo-Cabrera, lead author of the study from the Institute of Social and Preventive Medicine (ISPM) and the Oeschger Center for Climate Research (OCCR) at the University of Bern. Researchers from ETH Zurich, the Swiss Tropical and Public Health Institute in Basel (Swiss TPH) and the University of Basel were also involved in the study.

Studies that calculate the contribution of climate change to observed heat impacts are rare. In 2021, an [international study](#) coordinated by the University of Bern and the London School of Hygiene & Tropical Medicine received considerable international attention, showing for the first time the actual contribution of human-induced climate change to heat-related deaths between 1991 and 2018 for 732 cities in 43 countries worldwide. For the heatwave summer of 2022, which affected all of Europe, there is not a single study apart from the one from Switzerland. The team led by epidemiologist Ana Vicedo-Cabrera based its calculations on so-called attribution studies. These use established statistical methods and climate simulations to estimate the contribution of human-induced climate change to the observed health burden.

Urban population suffers particularly from the heat

The study on heat-related deaths comes to different conclusions depending on the region: the urban cantons of Geneva, Vaud, Basel-Stadt and Zurich were particularly badly

affected. Not all cantons and cities are equally equipped to deal with heat. In Basel and Zurich, for example, there is no systematic and comprehensive public health strategy to combat heat. In western Switzerland and Ticino, on the other hand, heat-health action plans had already been drawn up in the wake of the 2003 summer heatwave. Among other things, they include awareness campaigns and conduct recommendations. “These action plans prevented even higher heat-related mortality rates last summer in the cantons of Geneva or Vaud, for example, where temperatures were particularly high,” explains Ana Vicedo-Cabrera.

The epidemiologist also recommends that authorities improve their existing action plans for protection against the heat. Because, according to her study, “With the current global warming rates, a hot summer like 2022 will already become an average summer in the next few decades. Moreover, without effective adaptation strategies, the progressive aging of the population and the (re)emergence of infectious diseases could lead to even greater health impacts.” The study authors also argue for increased climate action and advocate “ambitious mitigation strategies”.

Women are more affected – especially senior citizens

The study, titled “The footprint of human-induced climate change on heat-related deaths in the summer of 2022 in Switzerland” analyzed the effects of the heatwave summer not only in terms of regional differences, but also in terms of age and gender. This showed that heat-related deaths affected people over 65 years of age in nearly 90 percent of the cases. The number of deaths was generally higher among women than among men. Older women had the highest mortality rate among all the subgroups.

According to Ana Vicedo-Cabrera, it is not yet scientifically clear why older women are particularly sensitive to heat. Hypotheses include physiological causes, for example associated with menopause. It might also play a role that older women usually lead a more active lifestyle than men and are therefore more exposed to high temperatures.

Video on the subject: <https://youtu.be/rjaePOugarU>

Please see the following page for further information and contact details.

Information about the publication:

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Oeschger Center for Climate Change Research

The Oeschger Center for Climate Change Research (OCCR) is one of the strategic centers of the University of Bern. It brings together researchers from 14 institutes and four faculties. The OCCR conducts interdisciplinary research at the cutting edge of climate change research. The Oeschger Center was founded in 2007 and bears the name of Hans Oeschger (1927–1998), a pioneer of modern climate research, who worked in Bern.

Further information: www.oeschger.unibe.ch

Institute of Social and Preventive Medicine (ISPM)

The Institute of Social and Preventive Medicine (ISPM) at the University of Bern has been committed to improving the health and wellbeing of individuals and society for 50 years, since 1971. The ISPM stands for “Health for All” through high-quality research in the fields of prevention, social medicine, epidemiology, biostatistics and public health, together with numerous national and international partners.

In addition to cutting-edge research, the ISPM is dedicated to training the next generation of epidemiologists, public health researchers, and physicians, among others. The ISPM actively participates in university teaching programs for students of medicine, pharmacology, biomedical engineering and biomedicine.

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