

Factors in the severity of heat stroke in China

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Temperatures are increasing in many cities, including Hong Kong. A new study found that when temperatures exceed 36°C and relative humidity passes 58%, Chinese citizens may experience heat stroke. Credit: [Yinan Chen/Wikimedia](#)

Heat waves are predicted to be more frequent, intense, and longer lasting as the climate warms. This year, for example, India, Europe, and the United States all have experienced record-breaking heat. Not only do heat-related deaths soar during these events, but heat-related diseases are also triggered. Heat stroke, in particular, is a serious condition that can

trigger multiple organ tissue injuries, neurological morbidity, and, in some cases, death. In China, recorded data on heat stroke morbidity are lacking. Therefore, the connections between heat stroke and meteorological data, like relative humidity, are difficult to determine at larger, citywide scales.

In a new paper published in *GeoHealth*, researchers collected daily [heat stroke](#) search index (HSSI) data along with meteorological data from 2013 to 2020 for 333 Chinese cities to shed light on the relationship between heat stroke and weather conditions. Using data modeling, the team discovered that temperature and [relative humidity](#) were the most important factors contributing to the severity of heat stroke, with 62% of the HSSI changes caused by temperature and 9% caused by relative humidity. Further, the researchers determined that citizens in China may experience heat stroke when temperatures exceed 36°C and relative humidity pushes above 58%. In the southern part of the country, low-altitude regions, and coastal cities, the temperature thresholds were a bit higher.

The researchers say their work shows a connection between meteorological conditions and heat-related diseases, and geography affects those thresholds. The researchers note that their work may help policymakers and government officials create new warning systems for the public.

More information: Qinmei Han et al, Web-Based Data to Quantify Meteorological and Geographical Effects on Heat Stroke: Case Study in China, *GeoHealth* (2022). [DOI: 10.1029/2022GH000587](https://doi.org/10.1029/2022GH000587)

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