

Cocaine-related deaths rise in warm weather

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Researchers in the United States have discovered that accidental overdose deaths involving cocaine rise when the average weekly ambient temperature passes 24 degrees Celsius (75 degrees Fahrenheit).

In a study published online today in the journal *Addiction*, researchers in the United States have discovered that accidental overdose deaths involving cocaine rise when the average weekly ambient temperature passes 24 degrees Celsius (75 degrees Fahrenheit). Using mortality data from New York City's Office of the Chief Medical Examiner for 1990 through 2006, and temperature data from the National Oceanic and Atmospheric Association, researchers found that accidental overdose deaths that were wholly or partly attributable to cocaine use rose significantly as the weekly ambient temperature passed 24 degrees Celsius. The number of cocaine-related overdose deaths continued to rise as temperatures continued to climb.

Cocaine-related overdose deaths increase as the ambient temperature rises because cocaine increases the core body temperature, impairs the cardiovascular system's ability to cool the body, and decreases the sense of heat-related discomfort that ordinarily motivates people to avoid becoming overheated. Cocaine users who become overheated (hyperthermic) can overdose on lower amounts of cocaine because their bodies are under more stress.

The study's findings correct previous research that associated an increase in cocaine-related mortality with much higher temperatures (31.1 degrees Celsius, or 87.9 degrees Fahrenheit). Because cocaine-related

overdose fatalities begin to rise at lower ambient temperatures than was previously thought, it is now apparent that cocaine users are at risk for longer periods of each year. Between 1990 and 2006, the average weekly temperature in New York City rose above 24 degrees Celsius for about seven weeks per year.

The study showed no difference in the number of drug overdoses in New York City among those weeks where the average temperature was between -10 and 24 degrees Celsius. Above 24 degrees Celsius, however, there were 0.25 more drug overdoses per 1,000,000 residents per week for every two degrees increase in weekly average temperature. Given that over 8.2 million people live in New York City, the study's findings predict that at least two more people per week will die of a drug overdose in the city for each two degree rise in temperature above 24 degrees Celsius, compared to weeks with average temperatures of 24 degrees and below.

The authors of this study point out the need for public health interventions in warm weather, such as delivering health-related warnings to high-risk groups. Prevention efforts could also include making air conditioning available in locations where cocaine use is common such as urban areas with a known high prevalence of cocaine use, and within those urban areas, particular neighbourhoods with elevated numbers of cocaine-related deaths or arrests. As lead author Dr. Amy Bohnert explains, "Cocaine users are at a high risk for a number of negative health outcomes and need public health attention, particularly when the weather is warm."

More information: Bohnert A., Prescott M., Vlahov D., Tardiff K., and Galea S. Ambient temperature and risk of death from accidental drug overdose in New York City, 1990-2006. *Addiction* 2010; [doi:10.1111/j.1360-0443.2009.02887.x](https://doi.org/10.1111/j.1360-0443.2009.02887.x)

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