

Phoenix using ice immersion to treat heatstroke victims as Southwest bakes with highs well over 100

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Phoenix Fire Capt. John Prato demonstrates a new protocol that the fire department in America's hottest big city is adopting as the West braces for the first heat wave of the summer season, Monday, June 3, 2024, in Phoenix. The cold water immersion therapy already used by hospitals in the area will also now be used by Phoenix fire and paramedics personnel on every patient they encounter this season with signs of heat stroke. Credit: AP Photo/Anita Snow

The season's first heat wave is already baking the Southwest with triple-digit temperatures as firefighters in Phoenix—America's hottest big city—employ new tactics in hopes of saving more lives in a county that saw 645 heat-related deaths last year.

Starting this season, the Phoenix Fire Department is immersing heatstroke victims in ice on the way to area hospitals. The medical technique, known as cold-water immersion, is familiar to marathon runners and military service members and has also recently been adopted by Phoenix hospitals as a go-to protocol, Fire Capt. John Prato said.

Emergency crews may be using the technique sooner than expected as oppressive heat has arrived earlier than usual across much of the region. The mercury reached 108 F (42.2 C) on Wednesday in Phoenix and Las Vegas, and record highs topping 110 F (43.3 C) are forecast in both cities on Thursday.

Prato demonstrated the potentially lifesaving method earlier this week outside the emergency department of Valleywise Health Medical Center in Phoenix, packing ice cubes inside an impermeable blue bag around a medical dummy representing a patient. He said the technique could dramatically lower body temperature in minutes.

"Just last week, we had a critical patient that we were able to bring back before we walked through the emergency room doors," Prato said.

"That's our goal—to improve patient survivability."

The heatstroke treatment has made ice and human-sized immersion bags standard equipment on all Phoenix fire department emergency vehicles. It is among measures the city adopted this year as temperatures and their human toll soar ever higher. Phoenix for the first time is also keeping

two cooling stations open overnight this season.

"There's a very high-pressure system over the Southwest that's bringing the first heat wave of the summer to the region," said Sean Benedict, a lead meteorologist for the [weather service](#) based in Phoenix. He said in addition to Arizona, the extreme heat will bake areas of eastern California, northern California and Nevada and even parts of southern Texas over the next few days.

Using its Heat Risk sliding scale to measure potentially dangerous heat in a 24-hour period, the National Weather Service in Las Vegas [forecasted "extreme" heat](#) in parts of southern Nevada from Wednesday throughout the weekend.



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"Extreme" is the most dangerous heat level on the scale, and so rare that it occurs only a few times annually, the weather service said. It warned of little to no relief overnight from daytime heat, with low temperatures in the Las Vegas area expected to run 10 to 15 degrees Fahrenheit above normal.

Excessive heat warnings were in effect through Friday evening for parts of southeast California, southern Nevada and Arizona. The [unseasonably hot weather](#) was expected to spread northward and make its way into parts of the Pacific Northwest by the weekend.

In California on Wednesday, Bishop's high of 102 F (38.8 C) broke the previous record of 101 F (38.3 C) set in 2021. It topped out at 106 F (41.1 C) in Needles and 118 F (47.7 C) at Death Valley National Park, where the high of 121 F (49.4 C) forecast Thursday would tie the mark last equaled in 1996.

Other highs in Arizona on Wednesday included 111 F (43.8 C) in Kingman and Bullhead City. It was 100 F (37.7 C) in Roswell, New Mexico, and 97 F (36.1 C) in Reno, Nevada, where the normal high for the date is 81 F (27.2 C).

A warning has been issued for most of Thursday and Friday for parts of

Grand Canyon National Park for areas below 4,000 feet (1,220 meters) including Phantom Ranch and Havasupai Gardens, where forecasted temperatures ranged from 105 F (40.5 C) to 111 F (43.8 C).

In southern New Mexico, highs were expected to reach triple digits, prompting the city of Las Cruces on Wednesday to activate its cooling centers to provide residents with temporary shelter from the blistering heat. A heat advisory for the area will be in effect through Thursday.

The Albuquerque mayor announced Wednesday this year's "Operation Cooldown," which includes plans for cooling centers and the use of sprinklers at city parks for kids to keep cool.

The City Council in Arizona's second-largest city of Tucson this week adopted a heat protection ordinance to ensure that city employees have access to cool water, shade and extra breaks at their workplaces. The action comes after Pima County, home to Tucson, last year saw 176 heat-related deaths and another 51 such deaths in the five additional rural counties that the medical examiner handles.



Dr. Paul Pugsley, medical director of the emergency department at Valleywise Health Medical Center in Phoenix, explains, Monday, June 3, 2024, how his staff will be working on a new protocol being adopted by the Phoenix Fire Department across its jurisdiction this summer in hopes of preventing some deaths from heat stroke. Known as cold water immersion therapy, the technique involves placing a patient with heat stroke inside a bag of ice slurry to bring down their body temperature long before the person arrives at a hospital emergency room. Credit: AP Photo/Anita Snow

Officials in Maricopa County were stunned earlier this year when final numbers showed 645 heat-related deaths in Arizona's largest county, a majority of them in Phoenix. The most brutal period was a heat wave with 31 subsequent days of temperatures of 110 F (43.3 C) or higher, which claimed more than 400 lives.

"We've been seeing a severe uptick in the past three years in cases of severe heat illness," said Dr. Paul Pugsley, medical director of emergency medicine with Valleywise Health. Of those, about 40% do not survive.

Cooling down patients long before they get to the emergency department could change the equation, he said.

The technique "is not very widely spread in non-military hospitals in the U.S., nor in the prehospital setting among fire departments or first responders," Pugsley said. He said part of that may be a longstanding perception that the technique's use for all cases of heatstroke by first responders or even hospitals was impractical or impossible.

Pugsley said he was aware of limited use of the technique in some places in California, including Stanford Medical Center in Palo Alto, Community Regional Medical Center in Fresno, and the San Antonio Fire Department in Texas.

Banner University Medical Center in Phoenix embraced the protocol last summer, said Dr. Aneesh Narang, assistant medical director of emergency medicine there.

"This cold-water immersion therapy is really the standard of care to treat heatstroke patients," he said.

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