

# Dehydration is rampant among Florida farm workers, new study shows

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Nearly all farm workers who participated in a recent study in Florida were dehydrated at the end of their shifts, and more than half were still dehydrated the following morning.

The study, a partnership between the University of Illinois Chicago and the Farmworker Association of Florida, used [urine samples](#) collected first thing in the morning, at lunch, and at the end of a shift to assess the risk of [dehydration](#) over five days in May 2021 and May 2022 at a vegetable farm in southern Florida.

A total of 111 workers, most of them men from Mexico and Guatemala, participated in [the study, which is published in the journal \*Environmental Research\*](#).

By one measure, almost all the samples taken at the end of a shift—97%—showed probable dehydration. Of samples taken the following morning, 62% showed probable dehydration.

That means for many, "there was no recovery," said lead author Chibuzor Abasilim, a post-doctoral scholar in the Division of Environmental and Occupational Health Sciences at UIC's School of Public Health. Indeed, as the work week progressed, the morning samples showed increasingly higher levels of dehydration.

"It was getting worse every day. It's pervasive, progressive dehydration," said co-author Lee Friedman, research professor in the School of Public Health. Acute dehydration can cause fatigue, muscle cramps and dizziness. Chronic dehydration can lead to kidney dysfunction.

The researchers ran other analyses of the samples using more conservative measures of dehydration that are approved by the NCAA and U.S. military. Even using these measures, the researchers still found high rates of dehydration in end-of-shift samples, at 83% using the NCAA measure and 55% using the U.S. military measure.

Farmworkers are particularly vulnerable to dehydration. They are generally paid based on the amount of crops they pick, so there is an

incentive to work longer and faster, the researchers said. This means taking a break to drink water or to urinate can cost them money. They are also often treated as expendable and know they can be replaced if they complain or don't work fast enough, the researchers said.

Additionally, they are often housed on the farms where they're working, which can make it hard to access consistent health care or even "go to the [grocery store](#) to buy more Gatorade," explained co-author Dana Madigan, a research assistant professor at the School of Public Health who is affiliated with the UIC Great Lakes Center for Farmworker Health and Wellbeing. This study is a collaboration between the center and a similar group at the University of Florida.

The results show a range of solutions is needed to address the precarious position of these workers, the researchers said. More stringent federal regulations, such as a proposed heat standard currently under consideration by the Occupational Safety and Health Administration, would help, as would smaller interventions such as closer bathroom facilities or mobile fans and shade units in the fields.

However, the researchers caution that new rules will likely go unheeded unless larger changes are made to how both farms and [farm workers](#) are compensated.

The research team is interested in conducting future studies to examine how well workers recover from dehydration over time, whether it's during their standard one day off a week, between picking assignments as they move between farms to follow the harvest, or between seasons when they generally return to their home countries.

**More information:** Chibuzor Abasilim et al, Risk factors associated

with indicators of dehydration among migrant farmworkers,  
*Environmental Research* (2024). [DOI: 10.1016/j.envres.2024.118633](https://doi.org/10.1016/j.envres.2024.118633)

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