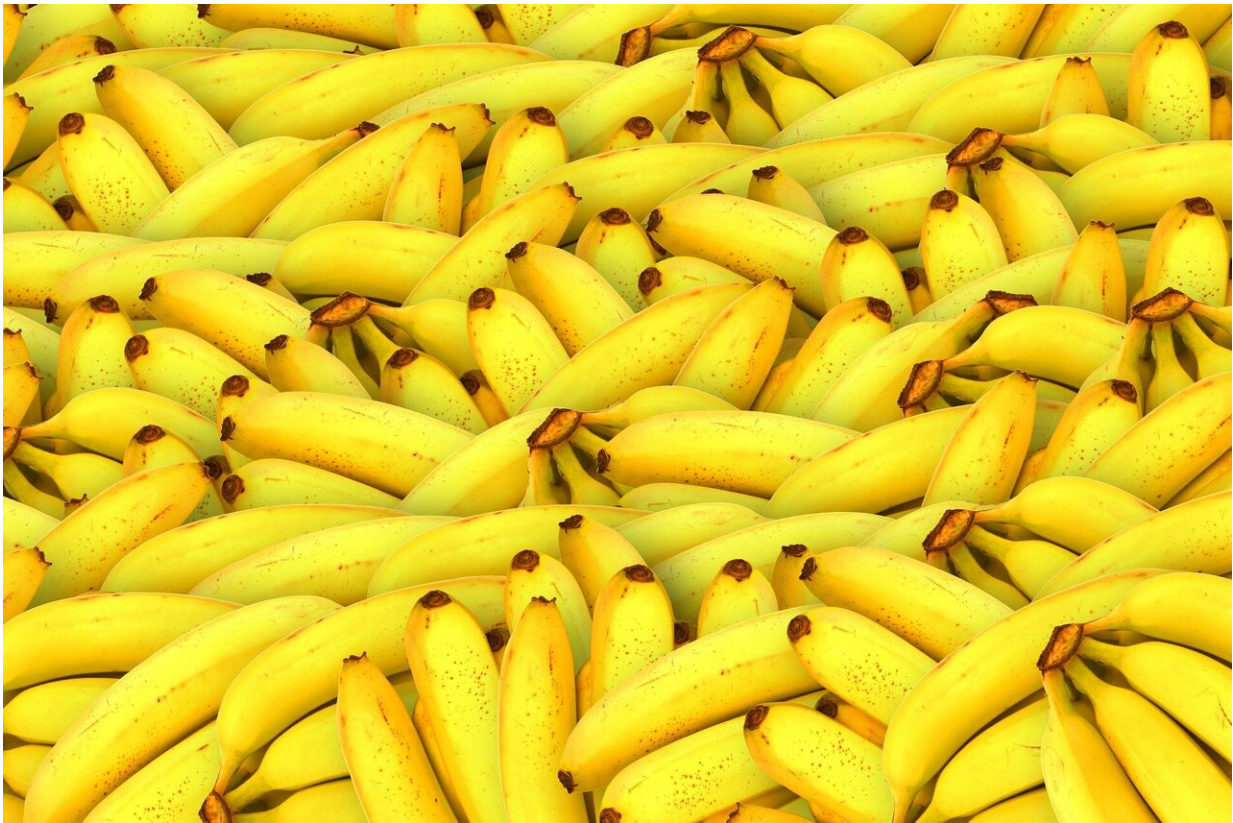


# Low potassium levels linked to water balance disorder more prevalent in women

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Credit: CC0 Public Domain

The kidneys become resistant to the water-balance hormone vasopressin within just a few days of potassium deficiency being detected in the blood, according to a new research article published in the *American*

*Journal of Physiology-Renal Physiology*. Scientists also discovered females drop blood potassium faster than males, making them more prone to develop this disorder. The research paper has been chosen as an APSselect article for May.

This study was conducted in a mice model. The purpose was to determine why and how potassium deficiency develops in humans and how to treat it. Scientists also looked at the link between low potassium levels and increased urination, as well as interference with the water balance hormone.

Potassium is the most abundant mineral in the body. It powers many of the body's critical functions, such as [nerve impulses](#), proper heart rhythm, muscle contraction and hormone release. Potassium deficiency—rare among healthy people with normal kidney function—can lead to diabetes insipidus, which causes extreme thirst, dehydration, frequent urination and the inability of the kidneys to maintain water balance. People with eating disorders, those who take diuretics, frequent vomiting and diarrhea, and those with related rare inherited diseases may be at higher risk of becoming potassium deficient.

One of the authors of this study this disorder, Paul A. Welling, MD, of Johns Hopkins University School of Medicine, said this study highlights the importance of maintaining proper potassium levels. "The water defect can be treated if potassium levels can be restored quickly," he said. "But future studies are required to test how long low [potassium](#) levels can persist before the water-handling defect becomes irreversible."

**More information:** Lama Al-Qusairi et al. Rapid development of vasopressin resistance in dietary K<sup>+</sup> deficiency, *American Journal of Physiology-Renal Physiology* (2021). [DOI: 10.1152/ajprenal.00655.2020](https://doi.org/10.1152/ajprenal.00655.2020)

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