

Test enables quick diagnosis of rare hormone disorder associated with excessive fluid intake

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Drinking excessive amounts of fluids can be a medically unremarkable habit, but it could also signify a rare hormone disorder. A new procedure now enables a fast and reliable diagnosis. Researchers from the University of Basel and University Hospital Basel reported these findings in the *New England Journal of Medicine*.

Drinking more than three liters per day with the equivalent increase in urination is regarded as too much. This [drinking](#) by the liter—known as "polyuria-polydipsia syndrome" usually develops over time through habit, or can be a side effect of a mental illness.

In rare cases, however, it may be caused by diabetes insipidus. This is when the pituitary gland lacks the hormone vasopressin, which regulates the body's [water](#) and salt content. Patients have a decreased ability to concentrate the urine, and therefore lose a lot of fluid and increase their fluid intake correspondingly to prevent dehydration.

The distinction between what is considered a "harmless" primary polydipsia and a [diabetes insipidus](#) is crucial, as their therapy is fundamentally different. Diabetes insipidus must be treated with the hormone vasopressin, while patients with primary polydipsia require behavioral therapy to reduce their habitual drinking. The wrong therapy can have life-threatening consequences, as treatment with vasopressin without indication can lead to water intoxication.

Blood test instead of water deprivation test

Previously, the differentiation between these two conditions was made using a water deprivation [test](#), in which the patient was not allowed to drink any liquid for 16 hours; doctors would then analyze the concentration of the urine. However, this test was often misleading and only provided a correct diagnosis in about half of all cases to a [correct diagnosis](#). Furthermore, a 16-hour water deprivation test is extremely unpleasant and stressful for the patients.

A study involving around 150 patients in 11 clinics compared the conventional water deprivation test with a new diagnostic method. It consists of a two-hour infusion with a hypertonic saline solution; after that, the concentration of the biomarker copeptin, which reflects the content of the hormone vasopressin in the blood, is measured in the patients' blood.

This method has a much higher diagnostic accuracy: 97 percent of all [patients](#) were correctly diagnosed and treated quickly. The new test is now available for clinical use.

More information: Wiebke Fenske et al, A Copeptin-Based Approach in the Diagnosis of Diabetes Insipidus, *New England Journal of Medicine* (2018). [DOI: 10.1056/NEJMoa1803760](https://doi.org/10.1056/NEJMoa1803760)

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