

# Can drinking alkaline water help prevent kidney stones? Not likely, study finds

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Bottled water marketed as "alkaline water" is unlikely to be an effective alternative for prevention of recurrent urinary stones, [reports a study](#) in the January issue of *The Journal of Urology*.

"While alkaline [water](#) products have a higher pH than regular water, they have a negligible alkali content—which suggests that they can't raise

urine pH enough to affect the development of kidney and other urinary stones," comments senior author Roshan M. Patel, MD, of University of California, Irvine.

## **Alkaline water as alternative to prescription drugs for stone prevention?**

Alkaline water, sometimes called high pH water, is an increasingly popular category of [bottled water](#). Compared to tap water, with a typical pH around 7.5, alkaline water is manufactured to have a higher (more alkaline) pH—in the range of 8 to 10.

Consumption and sales of alkaline water have increased sharply in recent years. Proponents claim various health benefits, including improved hydration and increased urinary pH. Raising pH is a key strategy to prevent formation of certain types of urinary stones ([uric acid](#) or cystine) in patients with previous stones.

Potassium citrate tablets are commonly prescribed to prevent recurrent stones. However, many patients do not follow recommended treatment—often related to the need to take large pills several times per day. If alkaline water could raise urinary pH, it might be an attractive alternative for stone prevention.

To assess the potential for high pH water to prevent urinary stones, Dr. Patel's team measured the pH of five commercially available [alkaline water](#) products. They also reviewed published data on other types of drinks and over-the-counter products with the potential to raise urinary pH.

## **Despite higher pH, alkaline water has 'trivial' alkali content**

The five brands tested in the study had a similar pH, in a narrow range around 10. One product contained a small amount of citrate, which was not listed on the product label. Otherwise, the tested alkaline waters had no organic anions that can be metabolized to alkali by the body—as supplied by potassium citrate tablets.

At a pH of 10, the tested products would have an alkali content of just 0.1 milliequivalent per liter (mEq/L). That's a "trivial" concentration compared to the body's typical metabolic acid production of 40 to 100 mEq/L per day, according to the authors.

In contrast, some other commercially available products do have the potential to increase pH—notably including [orange juice](#), with an alkali content of up to 15 mEq/L. Orange juice also has the lowest estimated cost to achieve the target alkali concentration of 30 mEq per day.

Baking soda was among the most effective and cost-efficient alternatives, although with potential concerns related to sodium content. Newer products dissolvable in water also appeared to provide useful and affordable options. The article includes a [graphic table](#) comparing the alkali content of various products and their costs in reaching target alkali levels.

"Our findings may help to guide the selection of other treatments, including beverages and over-the-counter products, for preventing recurrent urinary stones," adds Dr. Patel. The researchers note the limitations of their laboratory study and emphasize the need for clinical trials of the options for raising urinary pH.

**More information:** Paul Piedras et al, Alkaline Water: Help or Hype for Uric Acid and Cystine Urolithiasis?, *Journal of Urology* (2024).

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The Urology Care Foundation offers information on [kidney stone prevention](#).

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