

Prevention of Recurrent Nephrolithiasis: Dietary and Pharmacologic Options Recommended by the ACP

Key Points for Practice

- Increased fluid intake to achieve a daily urine output of 2 L or more is recommended for the prevention of nephrolithiasis.
- For patients in whom increasing fluid intake does not prevent nephrolithiasis, treatment with thiazide, citrate, or allopurinol is recommended.

From the AFP Editors

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Nephrolithiasis occurs in 13% of men and 7% of women; if not managed appropriately, it will typically recur within five years in 35% to 50% of patients. Options for managing this condition include dietary approaches and medication; however, it should be noted that adverse effects were more common with treatment vs. diet. The American College of Physicians (ACP) has provided recommendations regarding management of recurrent nephrolithiasis using diet and medication.

Recommendations

DIETARY MANAGEMENT

Increased fluid intake to achieve a daily urine output of 2 L or more is recommended for the prevention of nephrolithiasis; however, in patients who already meet the recommended intake, or if increasing fluids is contraindicated, intake should not be increased. Studies have shown that increasing fluid intake decreases the recurrence of stones by at least 50%. Additionally, there are no adverse effects of this modality; participant withdrawal was low in studies of increased fluid intake. There does not appear to be a significant difference in the effects of mineral vs. tap water.

Based on low-quality evidence, other options for managing nephrolithiasis using

diet include reduced intake of soft drinks (i.e., those acidified with phosphoric acid). Fruit-flavored drinks with citric acid are less concerning. Multicomponent diets (i.e., high calcium, low protein, and low sodium) and tailored diets are also options. It should be noted that participant withdrawal was high in long-term trials evaluating reduced intake of soft drinks and animal protein, increased intake of fiber, and multicomponent diets.

PHARMACOLOGIC MANAGEMENT

For patients in whom increasing fluid intake does not prevent nephrolithiasis, treatment with thiazide, citrate, or allopurinol (Zyloprim) is recommended; these medications cause a statistically significant reduction of stone recurrence. Combination therapy did not provide greater benefit compared with treatment with one of these medications alone. Magnesium also did not provide a significant benefit. Of note, most studies evaluated patients with calcium stones as opposed to uric acid or cystine stones, and guidance based on specific stone composition could not be determined.

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Evidence rating system used? Yes

Literature search described? Yes

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