

## Potassium Citrate to Prevent Recurrent Calcium Stones

*Long-term results support treatment with potassium citrate.*

Potassium citrate is used to prevent recurrent calcium kidney stones. It works by increasing urinary pH, which enhances urinary citrate excretion; high urinary citrate concentrations increase the solubility of stone-forming salts. To assess the value of potassium citrate therapy, researchers at Duke University's Comprehensive Kidney Stone Center conducted a retrospective cohort study of 503 patients who experienced recurrent kidney stones and who received potassium citrate therapy. Most patients had some combination of hypocitraturia, low urine volume, hypercalciuria, and gout.

On 24-hour urinary metabolic profiles at baseline and after at least 6 months of potassium citrate therapy, mean urinary citrate levels rose from 470 to 700 mg, and mean urinary pH rose from 5.9 to 6.5. During an average treatment duration of 41 months (range, 6–168 months), the stone formation rate dropped from a baseline of 1.89 stones annually to 0.46 stones annually. In a subgroup of 269 patients for whom potassium citrate was the only prescribed medication for stone disease, metabolic and stone outcomes were similar to those of the overall study population.

**Comment:** In a few small, relatively short-term, randomized trials, researchers have demonstrated that potassium citrate prevents recurrent calcium stone formation. Although this observational study lacks the authority of a randomized trial, its results suggest that long-term potassium citrate therapy is an effective intervention.

— [Allan S. Brett, MD](#)

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### **Citation(s):**

Robinson MR et al. Impact of long-term potassium citrate therapy on urinary profiles and recurrent stone formation. *J Urol* 2009 Mar; 181:1145.