



# Kidney Stones

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Kidney stones are solid masses made from substances in the urine that form in the kidneys. Typically the crystallized masses are the result of undissolved minerals and acid salts in your urine. The lifetime incidence of kidney stones is nearly 13 percent in men and 7 percent in women.<sup>1</sup> There are several types of kidney stones:

- Calcium stones are the most common, occurring in four out of five cases. These stones are in the form of calcium oxalate. Oxalate is found in some foods such as spinach, beets, coffee, chocolate and nuts.
- Struvite stones are mostly found in women who have a urinary tract infection.
- Uric acid stones are a byproduct of protein metabolism. They are commonly seen in male patients and may result due to gout.
- Cystine stones can form in people whose kidneys excrete large amounts of amino acids. This is known as a hereditary disorder called cystinuria.

The biggest risk factor for kidney stone formation is not drinking enough water. Be sure to drink 1 quart of clean filtered water per 50 lbs of body weight daily, not to exceed 3 quarts per day. Kidney stones are more likely to occur if you void less than 1 liter of urine a day. Check the color of your urine. Urine should be a pale yellow color with adequate hydration status.

Vitamin C and Calcium are two methodical scapegoats commonly blamed for kidney stone formation. Misguided articles and studies have led the public into believing false information. However, due to insufficient evidence, poorly designed studies, and lacking statistics, the causative ideas behind the suggestions of Vitamin C and Calcium have been only but a myth.

## Why Vitamin C is not the culprit

Emanuel Cheraskin, MD, Professor of Oral Medicine at the University of Alabama, explains why vitamin C does not increase oxalate stone formation: "Vitamin C in the urine tends to bind calcium and decrease its free form. This means less chance of calcium separating out as calcium oxalate stones."<sup>2</sup>

In a recent study of a group of more than 45,000 men, who were followed for 6 years, the authors found a protective role for vitamin C. They conclude, "...our findings for vitamin C, which have been consistent for women and men, do not support the practice of routine restriction of vitamin C to prevent kidney stones."<sup>3</sup>

According to the peer reviewed journal article in Orthomolecular Medical News, authors Steve Hickey, PhD and Hilary Roberts, PhD concluded that there is no evidence that Vitamin C increases stone formation. In fact, it could even have the reverse effect, for several reasons...<sup>4</sup>

- Vitamin C has a diuretic effect, increasing urine flow, which can reduce the concentration of oxalate and provide an environment less suitable for kidney stone formation.
- Vitamin C binds to calcium which decreases its availability for formation of calcium oxalate as described above.

### **Do you get sick more than once a year?**

*A comprehensive blood analysis includes many markers which can determine how severe an illness may be, if there are problematic conditions developing and what exactly the body needs to fight off those infections.*

*Underlying causes of inflammation, infection, and environmental exposures can also be recognized with a complete metabolic analysis.*

*Dosages for supplements vary according to age, weight and severity of illness.*

*Getting tested lends objective guidance to developing a lifestyle program and supplement recommendations unique to each individual.*

#### References:

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3. Lawson, Stephen. *What About Vitamin C and Kidney Stones?* Linus Pauling Institute November 1999
4. Hickey PhD, Steve and Roberts PhD, Hilary. *Vitamin C Does Not Cause Kidney Stones*. Orthomolecular Medicine News Service, July 5, 2005
5. Curhan GC, Willett WC, et.al .A prospective study of dietary calcium and other nutrients and the risk of symptomatic kidney stones. *N Engl J Med*. 1993 Mar 25;328(12):833-8.
6. National Kidney and Urologic Diseases Information Clearinghouse. *Diet for kidney stone prevention*. NIH Publication No. 13-6425 February 2013
7. *Taking Calcium Supplements? Want To Avoid Kidney Stones?* August 2004. <http://www.medicinenet.com/script/main/art.asp?articlekey=1887> Accessed on 2/27/13
8. Gordon, Gary MD,DO,MD(H) *What Really Causes Kidney Stones (And Why Vitamin C Does Not)* 15 February 2013. [www.gordonresearch.com](http://www.gordonresearch.com)

Federal Law requires that we warn you of the following:

1. Your individual health status and any required health care treatments can only be properly addressed by a professional healthcare provider of your choice.
2. The information provided in this newsletter has not been evaluated by the FDA.

- Stone formations occur around infectious conditions which vitamin C can prevent.

Evidence strongly supports the role of vitamin C as an important antioxidant. Its role in protection against age-related diseases includes heart disease, cancer, and viral infections just to name a few.

#### Why Calcium is not to blame

A diet high in calcium intake has been strongly suspected of increasing the risk of kidney stones. However, one study published in the *New England Medical Journal* by the Harvard School of Public Health concluded that a high dietary calcium intake actually decreases the risk of symptomatic kidney stones after studying the relation between dietary calcium intake and the risk of symptomatic kidney stones in a cohort of more than 45,000 men.<sup>5</sup>

Calcium binds with oxalates in your intestines, which prevents both from being absorbed into your blood and later transferred to your kidneys. The National Kidney and Urologic Diseases Information Clearinghouse suggest people should include 800mg of calcium in their diet everyday, not only for kidney stone prevention but also to maintain bone density.<sup>6</sup>

Both dietary and supplemental calcium have been compared when studying kidney stone formation. One study suggested that women taking supplemental calcium were 20% more likely to develop stones as women not taking supplemental calcium. However, the women in this study were not taking calcium supplements with their meals. The study also did not compare the diets and water intake of the women who took their supplements with meals and the women who took their supplements without meals. The calcium and oxalate in food can bind to each other only if they are present at the same time in the intestine. Be sure to take your calcium supplements with meals to avoid eliminating calcium through the urine which can cause stones to form.

#### Why you should include magnesium to avoid kidney stones

Gary Gordon MD, DO, MD(H), an internationally recognized health expert says, "Magnesium is a pivotal treatment for kidney stones. If you don't have enough magnesium to help dissolve calcium, you will end up with various forms of calcification."<sup>8</sup> Magnesium stimulates the production of calcitonin, which draws calcium out of the blood and back into the bone, preventing arthritis and kidney stones while building new bone. Magnesium converts vitamin D into its active form to assist in calcium absorption and also prevents calcium from solidifying into crystals.

In most cases, kidney stones will pass on their own. Drinking plenty of water is the safest and simplest thing you can do. Prevention is the real key. Sometimes the underlying cause is a metabolic disorder or kidney disease. With a full comprehensive blood panel we are able to detect signs of kidney function, arterial disease, levels of calcium, uric acid, phosphorus, and electrolytes to just name a few of the many responsible culprits that can be involved. Maintaining a healthy balanced diet with proper guide on supplementation recommendations can be done with your experienced nutritionist. Call and schedule an appointment today to identify toxicities and deficiencies which can be improved with a detailed personal program.