

Centre for Natural Medicine

KIDNEY STONES

by Dean Schrader ND

If you have had one kidney stone attack in your life, you hope that it is your last. Kidney stones can cause an excruciating intermittent radiating pain originating in the flank or kidney. Some individuals have compared the intensity of the pain to giving birth. Women; however, are affected less so than men regarding kidney stone incidence. Four out of five kidney stone sufferers are men, usually between the ages of 20 to 60 years old.

Kidney stones are responsible for 7 to 10 of every 10,000 hospital admissions. Kidney stones are associated with substantial economic costs to society. They can not only cause great suffering; they can also damage the kidneys if not treated promptly. It is for these reasons that prevention and treatment of kidney stones is imperative.

There are 5 common types of kidney stones. The most common types are calcium oxalate and calcium phosphate (often mixed with calcium oxalate) stones. It is important that a person collects a stone if it is passed. This is important to identify the stone to prevent recurrences.

UNDERLYING CAUSES AND PREVENTION:

As with most conditions, prevention is the key. Kidney stones are no exception. The high frequency of kidney stones are directly associated with the modern diet and lifestyle. The main factor is chronic dehydration. Very hot weather, heavy sweating, or too little fluid (particularly water) consumption contribute to the formation of kidney stones. The incidence of kidney stones has tripled in Japan since World War II – at the same time the Japanese diet has become similar to our own. Low fiber, highly refined carbohydrates, high alcohol consumption, large amounts of animal protein, high fat intake, low magnesium, and vitamin D enriched milk products have all been linked to kidney stone formation. High animal protein can lead to high levels of uric acid. Uric acid stones account for 5-13% of all stones. Vegetarians and omnivores that have a higher fruit and vegetable intake have a lower incidence of stones. Individuals that are obese and/or have insulin insensitivity may excrete more urinary calcium and are at high risk for stone formation. High sugar intake is associated with kidney stone formation in approximately seventy percent of people with recurrent kidney stones. A high sugar diet can lead to an exaggerated increase in urinary calcium oxalate. Deficiencies of B vitamins (especially B-6) can lead to an excess of oxalate in the urine. Inherited metabolic disorders, endocrine imbalances such as an overactive parathyroid or Cushings, and certain pharmaceutical medications, such as furosemide (a diuretic), antacids, and steroids, may all cause an overload of calcium in the urine.

CONTROVERSY IN MEDICINE:

For several years many individuals have been told that high amounts of vitamin C can cause an increase in kidney stones. This was based on one study whereby vitamin C was mixed with urine (outside of the body) and oxalate was formed. Several studies, including an April 1999 (J. Am Soc Nephrol 10: 4: 840-845) study, have refuted this concern. Vitamin C may prevent stone formation, particularly two types of stones. One type of stone (struvite) is associated with bacterial urinary infections. Another is cystine stones. Since vitamin C has anti-microbial properties and can help to prevent the conversion of cysteine to cystine, it may prove to be protective against these two types of stones. In fact, Dr. Cathcart, MD in California, has been recommending very high doses of vitamin C to his patients over many years. He states that he has not seen one case of kidney stones in his patients that are on high dose vitamin C therapy.

Other controversy exists with the use of calcium supplements. Some practitioners have worried that calcium supplements may increase the incidence of calcium oxalate stones. A 1997 study in the American Journal of Clinical Nutrition, demonstrated that high supplemental calcium could decrease the absorption of oxalate excretion. My recommendation is to use the calcium citrate form, since citrate has the ability to reduce urinary saturation of calcium oxalate and calcium phosphate and inhibit the seeding and growth of calcium salts. Do not forget the magnesium when calcium is taken. Calcium:magnesium ratio should be anywhere between 1:1, to 2:1, depending on an individual's biochemic individuality and health issues. Magnesium has the ability to increase the solubility of calcium oxalate and inhibit both calcium phosphate and oxalate stone formation. Again, I recommend the citrate form of magnesium.

TREATMENT:

If I could suggest the most important factor for preventing a kidney stone or a recurrence of a kidney stone, it would be to DRINK WATER. A good rule of thumb for adequate water consumption (not total fluids, strictly water) is the following formula:

Weight in pounds divided by two = number of ounces of water to drink daily. Another method is to assure that your urine is always clear, with the exception of a pale yellow urine in the morning.

Identifying the type of stone is often vital to preventing future stone formation. Different stones may require a different diet or supplement regime. For example, a uric acid stone former would benefit from a diet low in purines. Organ meats, shellfish, yeast, herring, sardines, and mackerel are examples of foods high in purine.

Other considerations include adequate fiber, green leafy vegetables (ie. broccoli and kale high in vitamin K), low simple carbohydrates, moderate complex carbohydrates, limiting dairy products and oxalate-containing foods, such as black tea, cocoa, spinach, beet leaves, rhubarb, and some nuts.

Nutritional and herbal supplementation may be necessary as well. Vitamin B6, magnesium, calcium and folate are beneficial to prevent some stones. One of my favorite herbs for kidney stones is an herb called Phyllanthus niruri. Studies from Brazil have demonstrated that this herb has the ability to aid in the elimination of stones. In a 2002 in vivo study, researchers seeded the bladders of rats with calcium oxalate crystals and treated them for 42 days with a water extract of Phyllanthus niruri. Their results indicated that the botanical medicine "strongly inhibited the growth of the matrix calculus and reduced the number of stone satellites compared with the group receiving water." Researchers have previously reported both antispasmodic and smooth muscle relaxing properties associated with this herb. Since the pain of a kidney stone is partly due to the spasm of the urinary tract and the inability of the muscle to relax to allow passage of the stone, Phyllanthus niruri is ideal for both the acute and sub-acute stages of kidney stone formation and expulsion. Incidentally, one of the common names for the herb is "stone breaker."

As with many conditions, kidney stones are often a result of diet and lifestyle indiscretions. Many people do not make changes until they have significant pain or disruption of their activities of daily life. If you have ever experienced a kidney stone, then you will likely agree that there is a high motivational factor to make the necessary changes in one's life to prevent a recurrence!