



Patient Diagnosis Resource for KIDNEY STONES (CALCIUM)

Your Diagnosis

Your doctor has determined that you have one or more kidney stones, one of the most common disorders of the urinary tract. Your particular type of kidney stone is called a calcium stone, which occurs in about 80% of all kidney stone cases. Nearly 1 million Americans are treated for kidney stones each year, with men developing the condition about 4 times more often than women.

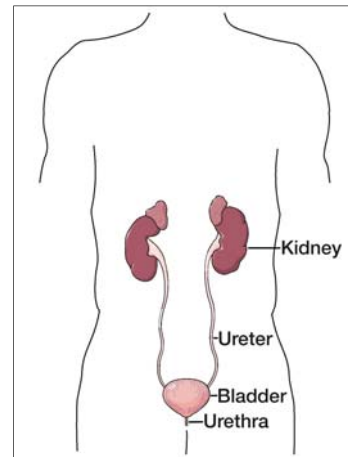
About the Condition

The kidneys are two bean-shaped organs located toward the middle of the back that are part of the urinary tract, which also includes the ureters, bladder and urethra. Their main purpose is to remove extra water and wastes from the blood and convert them to urine. The ureters are narrow tubes that transport urine from the kidneys to the bladder, a stretchable oval chamber in the lower abdomen. Urine is emptied out of the body from the bladder through the urethra.

Kidney stones occur when certain minerals and other chemicals in the urine form crystals that bind together in a hard mass. They may range in size from a grain of sand to a golf ball and can be either smooth or jagged.

There are 4 different types of kidney stones, each containing specific chemical/mineral combinations. The most common is made of calcium combined with oxalate or phosphate. Other kidney stone types include struvite stones, which are caused by urinary tract infection, uric acid stones and cystine stones, which are made of the amino acid cystine.

Kidney stones often cause severe pain, especially when they block urine flow; however, they can be present without causing symptoms. These “silent” stones are often discovered on X-rays.



Treatment Options

Deciding on a treatment plan for your kidney stones can depend upon a variety of factors such as their type, location and size. The following treatment possibilities are available:

Watchful Waiting – About 90% of kidney stones pass through the urinary system on their own within a short period of time, especially when 2 to 3 quarts of water is consumed daily to help move them along. This process often takes place at home, with pain medication prescribed as needed. Patients are often asked to collect the stones so their composition can be analyzed by a laboratory.

Medication – Some types of kidney stones may be dissolved using medications; however, calcium-based stones cannot be treated by this method. Drugs such as diuretics, citrates, phosphates and cholestyramine can be used to prevent more stones from forming.

Extracorporeal Shockwave Lithotripsy – The most often used treatment procedure for kidney stones is extracorporeal shockwave lithotripsy (ESWL), which is usually done on an outpatient basis and has a short recovery period. ESWL uses shock waves created outside the body to focus on and disintegrate the stones. The waves are harmless to the skin and other tissues, and break down kidney stones into sand-like fragments that are easily passed in the urine.

Percutaneous Nephrolithotomy – When a kidney stone is very large or in a location that prohibits the use of ESWL, a procedure called percutaneous nephrolithotomy is often performed. It involves making a very small incision in the back and inserting a camera (nephroscope) into the kidney to see and remove the stone. An energy probe (ultrasonic or electrohydraulic) may be required to break larger stones into pieces before they can be removed.

Ureteroscopic Removal – In cases when kidney stones are located in the middle or lower ureter, ureteroscopy may be necessary. This procedure is performed using a small fiber-optic camera (ureteroscope) passed through the urethra and bladder into the ureter to see and remove the stone. A small, cage-like device captures the stone for removal, or it can be shattered with a shock wave into smaller pieces if needed.

In very rare cases, invasive open surgery, called nephrolithotomy, may need to be performed.

What You Can Do

People who have had more than one kidney stone or with a family history of the condition are likely to develop more stones. You can help prevent new kidney stones. One of the key steps is to drink more liquids throughout each day and night – a minimum of 10 full glasses – with at least half being water. Because you have calcium kidney stones, your doctor may also suggest that you do one or more of the following:

- ◆ Limit your intake of sodium
- ◆ Maintain normal to high levels of dietary calcium (milk, cheese, etc.)
- ◆ Consume meat, seafood and poultry in moderation
- ◆ Limit your intake of beets, coffee, tea, cola, cocoa and chocolate, pepper, nuts, spinach, rhubarb, strawberries, wheat bran and grapefruit juice
- ◆ Take daily vitamin B6 supplements

Depending on your urine chemistry, your doctor may also suggest that you avoid eating foods with added vitamin D and taking calcium-based antacids and vitamin C supplements. You may also be advised to use calcium citrate supplements, drink lemon juice and eat a low-fat diet. Be sure to talk with your doctor about what specific dietary changes, medications and supplements are best for your individual situation.

Additional Resources

American Foundation for Urologic Disease, 800.828.7866, www.afud.org
National Kidney Foundation, 800.622.9010, www.kidney.org
Urology Channel, www.urologychannel.com

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