

# KIDNEY STONES

(Renal Calculi; Urinary Calculi)

NOLENSVILLE FAMILY MEDICINE

JOHN R. THOMPSON M.D.

615-776-8088



## BASIC INFORMATION

### DESCRIPTION

Small, solid particles that form in one or both kidneys. They sometimes travel into the ureter (slender muscular tubes that carry urine from the kidneys to the urinary bladder). Stones vary from the size of a grain of sand to a golf ball, and there may be one or several. Kidney stones usually affect adults of both sexes over age 30, but they occur more often in men.

### FREQUENT SIGNS AND SYMPTOMS

• Episodes of severe, off and on pain every few minutes. The pain usually appears first in the back, just below the ribs. Over several hours or days, the pain follows the stone's course through the ureter toward the groin. Pain stops when the stone passes.

- Frequent nausea.
- Cloudy or dark urine or blood in urine.

### CAUSES

Stones are made up of crystals that form in the urine. Normally, the urine contains chemicals that stop crystals from forming. These chemicals do not seem to work for everyone, and some people form stones. Why this occurs is unknown. Kidney stones contain various chemicals. They may be made up of calcium (most common), struvite, uric acid, or cystine.

### RISK INCREASES WITH

- Family history of kidney stones.
- Hyperparathyroidism (excess parathyroid hormone).
- Urinary-tract infections (UTI) or blockage.
- Gout (uric-acid stones).
- Kidney disorders.
- Certain inherited disorders.
- Excess vitamin C or D intake.
- Drugs such as diuretics (water pills), calcium-based antacids, or protease inhibitors (used for AIDS).
- Chronic bowel inflammation or bowel surgery.
- Bed rest for a long period of time.
- Too little fluid intake.

### PREVENTIVE MEASURES

No specific measures to prevent a first kidney stone. If you have had one kidney stone, you are more likely to have another and should take preventive measures. These will depend on the type of stone formed.

### EXPECTED OUTCOMES

Most kidney stones will pass out of the body on their own. Stones that cause symptoms or complications can be treated successfully. Stones often recur.

### POSSIBLE COMPLICATIONS

- Urinary-tract infection.
- Kidney damage or scarring.
- Kidney function may be lost or reduced.



## DIAGNOSIS & TREATMENT

### GENERAL MEASURES

• Your health care provider will do a physical exam and ask about your symptoms and activities. Medical tests may include urinalysis, urine culture, x-rays, and other tests to confirm the diagnosis.

• Small stones may need no specific treatment. They usually pass within 72 hours. Strain all urine and save the stone for analysis of type of stone.

• Treatment may be done to remove larger stones if they don't pass on their own and are causing complications, infection, or severe pain. Options include chemical dissolution, endourologic stone extraction, percutaneous nephrolithotomy, extracorporeal shock wave lithotripsy, and rarely, open surgery. Other, new approaches are also being studied. Your health care provider will discuss these options with you.

• Stones due to excess calcium in the body may require surgical removal of abnormal parathyroid tissue.

• To learn more: National Kidney & Urologic Diseases Information Clearinghouse, 3 Information Way, Bethesda, MD 20892, (800) 891-5390; website: [www.kidney.niddk.nih.gov](http://www.kidney.niddk.nih.gov).

### MEDICATIONS

- Pain relievers may be prescribed.
- Antispasmodics to relax the ureter muscles and help the stone pass may be prescribed.
- Drugs may be prescribed that will stop the growth of new or existing stones.

### ACTIVITY

During a kidney-stone episode, stay as active as possible. Activity may help the stone pass.

### DIET

Drink lots of fluids (water is best). Eating less red meat may be helpful. You may be advised to make other diet changes to help prevent more stones.



## NOTIFY OUR OFFICE IF

- You or a family member has symptoms of a kidney stone.
- Symptoms of a kidney infection develop (stinging, burning on urination, or a frequent urge to urinate).

Special notes:

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More notes on the back of this page