



# Kidney Stones

## *What You Should Know*

*Urology Care*  
**FOUNDATION™**  
*The Official Foundation of the  
 American Urological Association*

### WHAT ARE KIDNEY STONES?

Urine contains many dissolved minerals and salts. When the urine has high levels of minerals and salts, it can help to form stones.

### WHAT ARE THE DIFFERENT TYPES OF KIDNEY STONES?

Kidney stones come in many different types and colors. There are four main types of stones:

#### Calcium stones

Calcium stones are the most common type of kidney stone. There are two types of calcium stones: calcium oxalate and calcium phosphate.

#### Uric acid stones

Having acidic urine increases your risk for uric acid stones. Acidic urine may come from being overweight, chronic diarrhea, type 2 diabetes, gout, and a diet that is high in animal protein and low in fruits and vegetables. This is not a common type of stone.

#### Struvite/infection stones

These stones are related to chronic urinary tract infections (UTIs). Struvite stones are not common.

#### Cystine stones

Cystine is an amino acid that is in certain foods; it is one of the building blocks of protein. When high amounts of cystine are in the urine, it causes cystine stones to form. Cystine stones often start to form in childhood. These are a rare type of stone.

### WHAT ARE THE SYMPTOMS OF KIDNEY STONES?

Stones in the kidney often do not cause any symptoms and can go undiagnosed. However, if a stone blocks the flow of urine out of the kidney, it can cause a lot of pain. Other symptoms of stones include:

- A sharp, cramping pain in the back and side, often moving to the lower abdomen or groin.
- A feeling of intense need to urinate.
- Urinating more often or a burning feeling during urination.
- Urine that is dark or red due to blood.
- Nausea and vomiting.
- For men, you may feel pain at the tip of the penis.

**More than 1 million Americans will  
 get a kidney stone this year.**

## HOW ARE KIDNEY STONES TREATED?

Treatment of your kidney stone depends on the type of stone you have, how bad it is and the length of time you have had symptoms. There are different treatments to choose from. It is important to talk with your health care provider about what is best for you.

### Wait for the stone to pass by itself

Often you can simply wait for the stone to pass. Smaller stones are more likely than larger stones to pass on their own.

### Medication

Certain medications have been shown to improve the chance that a stone will pass.

### Surgery

Surgery may be needed to remove a stone from the ureter or kidney if:

- The stone fails to pass.
- The pain is too great to wait for the stone to pass.
- The stone is affecting kidney function.

## HOW CAN I PREVENT STONES?

Once your health care provider finds out why you are forming stones, he or she will give you tips on how to prevent them in the future. There is no “one-size-fits-all” for preventing kidney stones. Everyone is different. You may have to change your diet or take medications. Below are some tips to help prevent stones.

- Drink enough fluids each day (about 3 liters or ten 10-ounces glasses).
- Reduce the amount of salt in your diet.
- Eat the recommended amount of calcium.
- Eat plenty of fruits and vegetables.
- Eat foods with low oxalate levels.
- Eat less meat.

To understand how these tips apply to you, talk to your healthcare provider.

## RESOURCES

### *Academy of Nutrition and Dietetics: “Nutrition Care Manual”*

Review evidence-based diet manuals from registered dietitians, dietetic technicians and allied health professionals.

<http://www.nutritioncaremanual.org/>

### *National Library of Medicine*

In English:

<http://www.nlm.nih.gov/medlineplus/kidneystones.html>

In Spanish:

<http://www.nlm.nih.gov/medlineplus/spanish/kidneystones.html>

### *National Kidney and Urologic Disorders Information Clearinghouse (NKUDIC)*

Kidney Stones in Adults:

<http://kidney.niddk.nih.gov/kudisorders/pubs/stonesadults/>

### *Urology Care Foundation*

#### **UrologyHealth.org**

You may download this fact sheet and print it yourself at **UrologyHealth.org/StonesFS**. For copies of printed materials about stones and other urologic conditions, visit **UrologyHealth.org/Order** or call 800-828-7866.

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