

# Kidney Stones

*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, hard stones can form. These stones can be “silent” or very painful.

## 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 may 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. For men, you may feel pain at the tip of the penis.
- An intense need to urinate, or urinating more often.
- A burning feeling during urination.
- Urine that is dark or red due to blood.
- Nausea and vomiting.

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

## HOW ARE KIDNEY STONES TREATED?

Treatment depends on the type of stone you have, its size, location, and how long you've had symptoms. There are different treatments to choose from. It helps to talk with your health care provider about which option is best for you.

### *Wait for the stone to pass by itself*

Often you can simply drink more water and 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 on its own.
- 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" remedy 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.

## ABOUT UROLOGY CARE FOUNDATION

The Urology Care Foundation is the world's leading urologic Foundation—and the official Foundation of the American Urological Association. We provide information for those actively managing their urologic health and those ready to make healthy changes in their lives. Our information is based on the American Urological Association resources and is reviewed by medical experts.

To learn more about different urologic issues visit **[UrologyHealth.org/UrologicConditions](http://UrologyHealth.org/UrologicConditions)**. Go to **[UrologyHealth.org/FindAUrologist](http://UrologyHealth.org/FindAUrologist)** to find a doctor near you.

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This information is not a tool for self-diagnosis or a substitute for professional medical advice. It is not to be used or relied on for that purpose. Please talk to your urologist or health care provider about your health concerns. Always consult a health care provider before you start or stop any treatments, including medications.

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