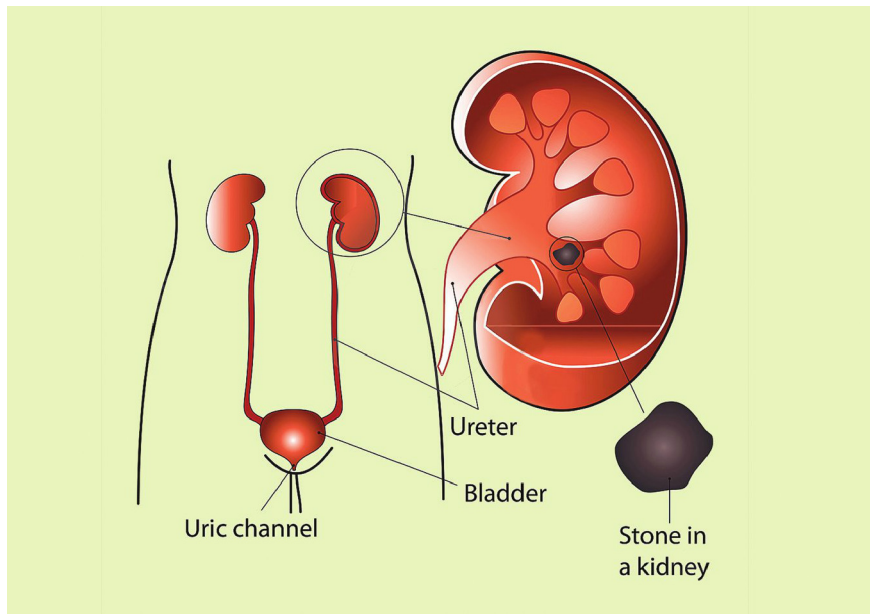


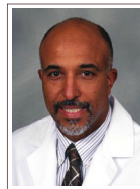
## EDUCATION LEARN THE SYMPTOMS & TREATMENTS



# Stone Cold Facts

## OVERVIEW

By Herbert James, MD  
Board-Certified Urologist



**K**idney stones have bothered humans for a very long time. When examined by scientists a 7,000-year-old mummy showed evidence that ancient Egyptians suffered from this complaint. But what are kidney stones? Your doctor might refer to them as “calculi” or to the condition as “renal stone disease.” These Latin-based names are clues as to what they are (a stone—or “calculus” in Latin—made from mineral deposits) and where they form (“renes” is Latin for “kidneys”).

Normally, your kidneys filter waste from your blood, producing urine that passes through a narrow tube (the “ureter”) and into your bladder. Sometimes, minerals from food and drink don’t stay completely dissolved in the kidneys. These minerals can stick together to form stones. Often, kidney stones are tiny and have no trouble passing through the ureter, despite its mere 2-mm diameter at the bladder. But larger stones can become stuck in this tube, causing severe pain.

If a stone is small enough to pass on its own (most are), the average time it takes to pass is between one and four weeks. Larger stones that have become stuck probably will need medical attention.

There are several kinds of stones, made from different chemicals that signal different kinds of imbalances. Stones made when the body cannot eliminate excess calcium are by far the most common (some types of calcium stones are actually caused by

metabolic or hormonal disorders). Those comprised of uric acid—a by-product of digesting meat—account for about 10% of stones. These are the only type that can be dissolved with medication. Doctors can prescribe potassium citrate or sodium bicarbonate to help neutralize the acid.

When it comes to kidney stone symptoms, it can be all or nothing. You may have one and never know it. So-called “silent stones” either remain in the kidney or are small enough to pass unnoticed. But if one blocks the ureter, the spasm—felt either in the lower back, belly, or groin—can be excruciating. The severity of the pain, though, has nothing to do with the size of the stone. Accompanying symptoms include hematuria (blood in the urine), nausea, and fever.

To diagnose kidney stones, your doctor will ask you about your medical history and lifestyle habits, call for an X-ray and/or blood tests, and perform a physical examination. Your doctor might lightly tap your skin near your kidneys to see if they are tender, a tell-tale sign.

Men are at more risk for kidney stones than women, and in men the risk is greatest between 40 and 70 years old. It appears that men of European descent have the highest incidence of stones, followed by Mexican-Americans. African-Americans are the ethnic group at least risk.

Among women, those in their 50s have the highest risk of developing stones. Young women in the late stages of pregnancy also can be prone, although their rate is still only 1 in 1,500. Pregnant women typically have a higher calcium intake and kidneys that are not functioning as well as they could be.

There is some evidence that a tendency toward kidney stones runs in families and that a family history of gout (also caused by excess uric acid) is a predictor. Perhaps the clearest risk factor for getting stones is if you’ve had one already. Without preventative measures, almost half of those who have had a kidney stone will get another within five years.

## PREVENTING KIDNEY STONES

### Water, Water Everywhere

The most common cause of kidney stones is not drinking enough water. To prevent stones, it is recommended that you drink around eight glasses a day, enough to keep your urine pale and odor-free. Dark, strong-smelling urine indicates dehydration, putting you at risk for stones.



A high body mass index (BMI) is another factor that you can control. Heavier people tend to be resistant to insulin (a hormone that regulates blood sugar levels) and have increased calcium in the urine, both of which can lead to kidney stones. Increasing physical activity is a way to lower body weight and has the added benefit of helping to move small stones.

Sensible diet choices can prevent stones, although your doctor or dietician can give you the best advice about this. Maintaining a correct balance of minerals in your body can be a complex task.

For instance, it might seem that lowering your calcium intake is recommended as most stones are made of calcium. However, reducing calcium often causes problems with other minerals, resulting in a higher possibility of getting stone disease. In general, a low-sodium, low-protein diet is the best way to avoid stones.

## THE LOW DOWN

### Points to Remember About Kidney Stones

- ▶ Kidney stones are made from minerals that have not remained dissolved in your kidneys.
- ▶ Most stones are small enough to pass on their own, although large stones can become stuck, causing severe pain.
- ▶ To help prevent and pass stones, always drink plenty of water.
- ▶ Sound waves, percutaneous surgery, and ureteroscopy are treatment options for stuck stones.
- ▶ Men are more prone than women, and dehydration, obesity, lack of exercise, poor diet, and a family history of stones are other risk factors.

For more information visit, [www.ampofny.com/education](http://www.ampofny.com/education)

## KIDNEY STONE TREATMENT

### What Options Work for My Symptoms?

For small kidney stones, your doctor will write a very simple prescription: drink lots of water, as much as two to three quarts a day to help flush your urinary system.

As you wait for a stone to pass, your doctor will request that you strain your urine to see if the stone can be captured in a sieve and examined. Knowing what type of stone you have helps your doctor create a personalized prevention regimen.

If it turns out you have a uric acid stone, you might have to take potassium citrate or sodium bicarbonate. Only this type of stone responds to medication; however, medications called alpha blockers have been shown to aid the passage of small stones by relaxing the ureter.

If you present to your doctor with the painful symptoms of a stuck stone, there are a number of treatment options:

**Sound Waves**—In “extracorporeal shock wave lithotripsy” (ESWL) your doctor will use equipment to send a sound pulse through your body that’s so strong, it can break up a large stone

into tiny bits that are then passed in your urine.

**Surgery**—If a stone is too large for ESWL, a surgical procedure—called “percutaneous nephrolithotomy”—might be necessary. This involves removing a kidney stone through a small incision in your back.

**Scope**—To remove a stone in your ureter, your doctor may pass a thin tube (ureteroscope) linked to a camera through your urethra (the tube through which urine passes out of your body) and bladder to your ureter. Once the stone is located, special tools can grab the stone or a laser can be used to break it up.



**Uric acid stones respond to simple medications.**