



# Kidney Stones

## ► What is a kidney stone?

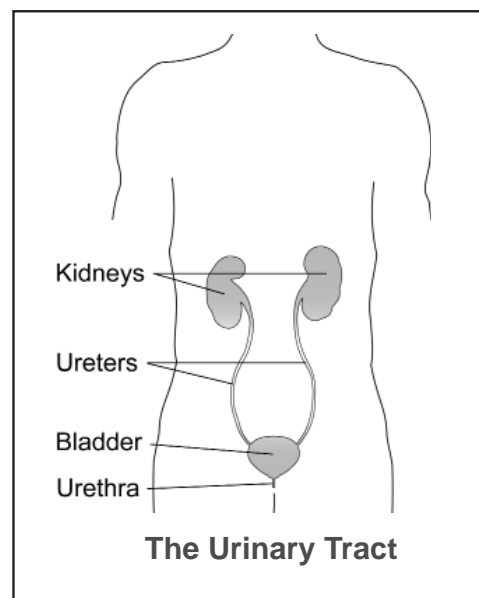
A kidney stone is like a small rock that forms in the kidney. Stones form when certain chemicals in the body clump together. A stone can either stay in the kidney or travel through the urinary system (see picture).

## ► Who gets kidney stones?

Anyone can have a kidney stone, but it may be more likely if you:

- Are male
- Are Caucasian
- Are very overweight
- Have had kidney infections
- Have a family member with kidney stones
- Have had kidney stones before
- Eat a lot of animal protein (such as meat and eggs)
- Do not drink enough liquids

Other conditions and medicines can also put you at greater risk for kidney stones.



## ► What are the symptoms?

Very small stones might pass through the urinary system without causing much pain. Larger stones can block the flow of urine if they get stuck in the ureters or urethra. Kidney stones do not usually cause any symptoms until they start to pass. Some symptoms might include:

- Extreme pain in your back or side that will not go away
- Throwing up
- Blood in your urine
- Fever and chills

## ► How are kidney stones treated?

Treatment depends on the location and size of the kidney stone. Drinking plenty of water and taking some medicines can help a small stone to pass more easily. For problem stones, there may be a few options:

- **ESWL (Extracorporeal Shock Wave Lithotripsy)** uses shock waves to break a large stone into smaller pieces that can pass.
- **Ureteroscopic Stone Removal** uses a small tool to get and remove stones stuck in the ureters.
- **Percutaneous Nephrolithotomy** uses surgery to remove large stones from the kidneys.

To learn more about any of these treatments, talk to your doctor.



## ► Are there different types of kidney stones?

Yes. There are four main kinds of kidney stones. Each type has a different cause. Each may need a different kind of treatment or prevention. The four types are:

- **Calcium-Oxalate:** These are the most common kidney stones. They can be caused by eating too much calcium or vitamin D, some medicines, genetics and other kidney problems. Talk to your doctor about ways to stop these stones from forming. Do NOT limit calcium unless your doctor tells you to.
- **Struvite:** These stones affect women more than men. They can grow very large and may harm the kidneys more than other stones. Having kidney infections often may cause struvite stones.
- **Uric Acid:** These stones may be caused by eating too much animal protein or by genetics. To stop uric acid stones, try eating less red meat.
- **Cystine:** These stones are very rare. They are caused by cystinuria, a genetic kidney disease.

Ask your doctor about what kind of kidney stones you have.

## ► How can I prevent future kidney stones?

If you have had kidney stones before, you are more likely to have kidney stones again. To help keep stones from forming, try to:

- Drink 6 to 8 glasses of water each day
- Eat less salt (sodium), meat and eggs
- Find out what type of stone you have
- Ask your doctor for a urine test
- Talk to your doctor about your medicines and other tests for kidney stones



Do NOT reduce the calcium in your diet without talking to your doctor first! Studies show that limiting calcium in your diet may not stop kidney stones from forming and may harm your bones.

## ► Where can I learn more?

For more information about kidney stones and chronic kidney disease, talk to your doctor. You can also call our toll-free HelpLine at 866.300.2900 or visit our website at [www.kidneyfund.org](http://www.kidneyfund.org).