

Kidney stones in adults

SUMMARY

- A kidney stone can form when there are normal or high levels of certain substances in the urine. These substances can form crystals. Crystals become attached to the kidney and gradually increase in size, forming a stone.
- Eventually, the stone moves through the urinary tract and is passed in the urine. Or, the stone can remain in the urinary tract, blocking urine flow, which can cause pain.
- Certain diseases and habits can affect a person's risk for developing kidney stones. These include a past history or family history of kidney stones, certain dietary habits, underlying medical problems, certain medications, and dehydration.
- The most common symptom of a kidney stone is pain; other symptoms include hematuria (blood in the urine), passing small stones, nausea, vomiting, pain with urination, and an urgent need to urinate. Many patients with kidney stones have no symptoms.
- Testing is usually needed to diagnose a kidney stone. Computed tomography (CT scan) is the preferred test for most patients.
- Treatment usually includes pain medication and increased fluids (to drink) until the stone is passed. Over the counter pain medication (eg, ibuprofen, Advil, Motrin) may be helpful. If the pain is not controlled, a stronger medication (narcotic) may be needed.
- Small stones (less than 5 millimeters) usually pass without treatment. Larger stones (greater than 9 millimeters) rarely pass on their own. Treatment for larger stones is usually done in a hospital.
- Further testing is recommended for patients who have kidney stones several times in their life. Tests help to determine if an illness is causing kidney stones to form. Medications may be prescribed to prevent future stones. Drinking more fluids and changing the diet can help to prevent future kidney stones.

KIDNEY STONE PREVENTION

After you have a kidney stone, you should have blood and urine tests to determine if you have certain health problems that increase the risk of kidney stones.

If you passed and saved the stone, it should be analyzed to determine the type of stone. Based upon these test results, one or more of the following may be recommended:

- You may be given a medication to reduce the risk of future stones.
- Drink more fluids to decrease the risk of another stone. The goal is to increase the amount of urine that flows through your kidneys and also to lower the concentrations of substances that promote stone formation. One expert recommends drinking enough fluid that you make about 2 liters of urine per day.
- You may be advised to make changes in your diet; the changes recommended will depend upon the type of kidney stone you have

WHERE TO GET MORE INFORMATION

- [National Library of Medicine](#)
- [National Institute of Diabetes and Digestive and Kidney Diseases](#)
- [National Kidney Foundation](#)
- [Patient information: Kidney stones in adults \(Beyond the Basics\)](#)