

Simple Kidney Cysts

National Kidney and Urologic Diseases Information Clearinghouse



U.S. Department
of Health and
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**ADULT UROLOGY &
PEDIATRIC
UROGYNECOLOGY**

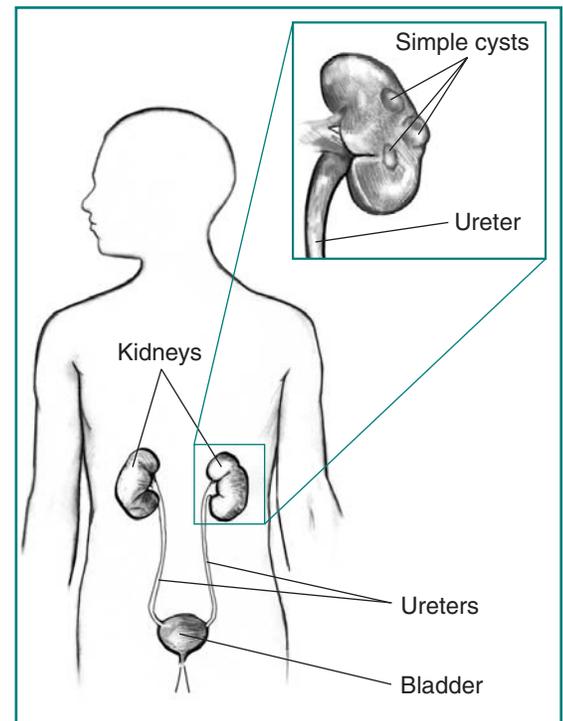
What are simple kidney cysts?

Simple kidney cysts are abnormal, fluid-filled sacs that form in the kidneys. Simple kidney cysts are different from the cysts that develop when a person has polycystic kidney disease (PKD), which is a genetic disorder. Simple kidney cysts do not enlarge the kidneys, replace their normal structure, or cause reduced kidney function like cysts do in people with PKD.

Simple kidney cysts are more common as people age. An estimated 25 percent of people 40 years of age and 50 percent of people 50 years of age have simple kidney cysts.¹

What are the kidneys and what do they do?

The kidneys are two bean-shaped organs, each about the size of a fist. They are located near the middle of the back, just below the rib cage, one on each side of the spine. Every day, the two kidneys process about 200 quarts of blood to filter out about 1 to 2 quarts of urine, composed of waste products and extra water. The urine flows from the kidneys to the bladder through tubes called ureters. The bladder stores urine until releasing it through urination.



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What causes simple kidney cysts?

The cause of simple kidney cysts is not fully understood. Obstruction of tubules—tiny structures within the kidneys that collect urine—or deficiency of blood supply to the kidneys may play a role. Diverticula—sacs that form on the tubules—may detach and become simple kidney cysts. The role of genetic factors in the development of simple kidney cysts has not been studied.

¹Torres VE, Grantham JJ. Cystic diseases of the kidney. In: Brenner BM, ed. *Brenner & Rector's The Kidney*. Vol. 2. 8th ed. Philadelphia: Saunders Elsevier; 2008: 1451–1453.

What are the symptoms of simple kidney cysts?

Simple kidney cysts usually do not cause symptoms or harm the kidneys. In some cases, however, pain can occur between the ribs and hips when cysts enlarge and press on other organs. Sometimes cysts become infected, causing fever, pain, and tenderness. Simple kidney cysts are not thought to affect kidney function, but one study found an association between the presence of cysts and reduced kidney function in hospitalized people younger than 60 years of age.¹ Some studies have found a relationship between simple kidney cysts and high blood pressure. For example, high blood pressure has improved in some people after a large cyst was drained. However, this relationship is not well understood.²

How are simple kidney cysts diagnosed?

Most simple kidney cysts are found during imaging tests done for other reasons. When a cyst is found, the following imaging tests can be used to determine whether it is a simple kidney cyst or another, more serious condition. These imaging tests are performed at an outpatient center or hospital by a specially trained technician, and the images are interpreted by a radiologist—a doctor who specializes in medical imaging. Ultrasound may also be performed in a health care provider’s office. Anesthesia is not

needed though light sedation may be used for people with a fear of confined spaces who undergo magnetic resonance imaging (MRI).

- **Ultrasound.** Ultrasound uses a device, called a transducer, that bounces safe, painless sound waves off organs to create an image of their structure. An abdominal ultrasound can create images of the entire urinary tract. The images can be used to distinguish harmless cysts from other problems.
- **Computerized tomography (CT) scan.** CT scans use a combination of x rays and computer technology to create three-dimensional (3-D) images. A CT scan may include the injection of a special dye, called contrast medium. CT scans require the person to lie on a table that slides into a tunnel-shaped device where the x rays are taken. CT scans can show cysts and tumors in the kidneys.
- **MRI.** MRI machines use radio waves and magnets to produce detailed pictures of the body’s internal organs and soft tissues without using x rays. An MRI may include the injection of contrast medium. With most MRI machines, the person lies on a table that slides into a tunnel-shaped device that may be open ended or closed at one end; some newer machines are designed to allow the person to lie in a more open space. Like CT scans, MRIs can show cysts and tumors.

²Zerem E, Imamovic G, Omerovic S. Simple renal cysts and arterial hypertension: does their evacuation decrease the blood pressure. *Journal of Hypertension*. 2009;27(10):2074–2078.

How are simple kidney cysts treated?

Treatment is not needed for simple kidney cysts that do not cause any symptoms. Simple kidney cysts may be monitored with periodic ultrasounds.

Simple kidney cysts that are causing symptoms or blocking the flow of blood or urine through the kidney may need to be treated using a procedure called sclerotherapy. In sclerotherapy, the doctor punctures the cyst using a long needle inserted through the skin. Ultrasound is used to guide the needle to the cyst. The cyst is drained and then filled with a solution containing alcohol to make the kidney tissue harder. The procedure is usually performed on an outpatient basis with a local anesthetic.

If the cyst is large, surgery may be needed. Most surgeries can be performed using a laparoscope—a special tool with a small, lighted video camera. The procedure is usually done under general anesthesia in a hospital. The surgeon drains the cyst and then removes or burns away its outer tissue. This type of surgery allows for a smaller incision and quicker recovery.

Eating, Diet, and Nutrition

Eating, diet, and nutrition have not been shown to play a role in causing or preventing simple kidney cysts.

Points to Remember

- Simple kidney cysts are abnormal, fluid-filled sacs that form in the kidneys.
- Simple kidney cysts usually do not cause symptoms or harm the kidneys.
- Most simple kidney cysts are found during imaging tests done for other reasons.
- Treatment is not needed for simple kidney cysts that do not cause any symptoms.
- Simple kidney cysts that are causing symptoms or blocking the flow of blood or urine through the kidney may need to be treated using sclerotherapy or surgery.

Hope through Research

In recent years, researchers have learned a great deal about kidney disease. The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) sponsors several programs aimed at understanding kidney problems. The NIDDK's Division of Kidney, Urologic, and Hematologic Diseases supports basic research into normal kidney function and the diseases that impair normal function at the cellular and molecular levels, including diabetes, high blood pressure, glomerulonephritis, and cystic kidney diseases.

Participants in clinical trials can play a more active role in their own health care, gain access to new research treatments before they are widely available, and help others by contributing to medical research. For information about current studies, visit www.ClinicalTrials.gov.

For More Information

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Internet: www.kidney.org

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You may also find additional information about this topic by visiting MedlinePlus at www.medlineplus.gov.

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