

# Acquired Cystic Kidney Disease

National Kidney and Urologic Diseases Information Clearinghouse



## What is acquired cystic kidney disease?

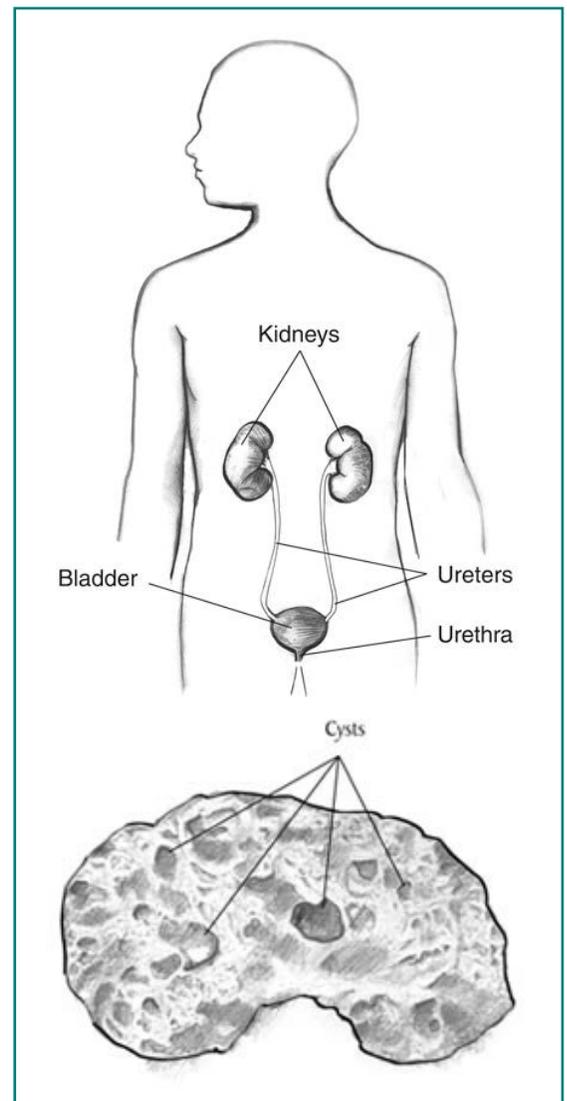
Acquired cystic kidney disease happens when a person's kidneys develop fluid-filled sacs, called cysts, over time. Acquired cystic kidney disease is not the same as polycystic kidney disease (PKD), another disease that causes the kidneys to develop multiple cysts.

Acquired cystic kidney disease occurs in children and adults who have

- chronic kidney disease (CKD)—a condition that develops over many years and may lead to end-stage kidney disease, or ESRD. The kidneys of people with CKD gradually lose their ability to filter wastes, extra salt, and fluid from the blood properly.
- end-stage kidney disease—total and permanent kidney failure that requires a kidney transplant or blood-filtering treatments called dialysis.

The cysts are more likely to develop in people who are on kidney dialysis. The chance of developing acquired cystic kidney disease increases with the number of years a person is on dialysis. However, the cysts are caused by CKD or kidney failure, not dialysis treatments.

Read more about kidney failure and dialysis at [www.kidney.niddk.nih.gov](http://www.kidney.niddk.nih.gov) and [www.nkdep.nih.gov](http://www.nkdep.nih.gov).



Acquired cystic kidney disease happens when a person's kidneys develop fluid-filled sacs called cysts.

## What are the differences between acquired cystic kidney disease and polycystic kidney disease?

Acquired cystic kidney disease differs from PKD in several ways. Unlike acquired cystic kidney disease, PKD is a genetic, or inherited, disorder that can cause complications such as high blood pressure and problems with blood vessels in the brain and heart.

The following chart lists the differences:

### People with Polycystic Kidney Disease

- are born with a gene that causes the disease
- have enlarged kidneys
- develop cysts in the liver and other parts of the body

### People with Acquired Cystic Kidney Disease

- do not have a disease-causing gene
- have kidneys that are normal-sized or smaller
- do not form cysts in other parts of the body

In addition, for people with PKD, the presence of cysts marks the onset of their disease, while people with acquired cystic kidney disease already have CKD when they develop cysts.

Read more in Polycystic Kidney Disease at [www.kidney.niddk.nih.gov](http://www.kidney.niddk.nih.gov).

## How common is acquired cystic kidney disease?

Acquired cystic kidney disease becomes more common the longer a person has CKD.

- About 7 to 22 percent of people with CKD already have acquired cystic kidney disease before starting dialysis treatments.
- Almost 60 percent of people on dialysis for 2 to 4 years develop acquired cystic kidney disease.<sup>1</sup>
- About 90 percent of people on dialysis for 8 years develop acquired cystic kidney disease.<sup>1</sup>

## What causes acquired cystic kidney disease?

Researchers do not fully understand what causes cysts to grow in the kidneys of people with CKD. The fact that these cysts occur only in the kidneys and not in other parts of the body, as in PKD, indicates that the processes that lead to cyst formation take place primarily inside the kidneys.<sup>2</sup>

## What are the signs and symptoms of acquired cystic kidney disease?

A person with acquired cystic kidney disease often has no symptoms. However, the complications of acquired cystic kidney disease can have signs and symptoms.

<sup>1</sup>Torres VE, Grantham JJ. Cystic diseases of the kidney. In: Taal MW, ed. *Brenner & Rector's The Kidney*. 9th ed. Philadelphia: W.B. Saunders; 2011: 1626–1667.

<sup>2</sup>Chapman AB, Rahbari-Ouskoui FF, Bennett WM. Acquired cystic disease of the kidneys in adults. UpToDate website. [http://www.uptodate.com/contents/acquired-cystic-disease-of-the-kidney-in-adults?source=search\\_result&search=acquired+cystic+kidney+disease&selectedTitle=1%7E13](http://www.uptodate.com/contents/acquired-cystic-disease-of-the-kidney-in-adults?source=search_result&search=acquired+cystic+kidney+disease&selectedTitle=1%7E13). Updated January 14, 2014. Accessed August 8, 2014.

## What are the complications of acquired cystic kidney disease?

People with acquired cystic kidney disease may develop the following complications:

- an infected cyst, which can cause fever and back pain.
- blood in the urine, which can signal that a cyst in the kidney is bleeding.
- tumors in the kidneys. People with acquired cystic kidney disease are more likely than people in the general population to have cancerous kidney tumors. However, the chance of cancer spreading is lower in people with acquired cystic kidney disease than that of other kidney cancers not associated with acquired cystic kidney disease, and the long-term outlook is better.<sup>1</sup>

## How is acquired cystic kidney disease diagnosed?

A health care provider may diagnose a person with acquired cystic kidney disease based on

- medical history
- imaging tests

### Medical History

Taking a medical history may help a health care provider diagnose acquired cystic kidney disease. A health care provider may suspect acquired cystic kidney disease if a person who has been on dialysis for several years develops symptoms such as fever, back pain, or blood in the urine.

## Imaging Tests

To confirm the diagnosis, the health care provider may order one or more imaging tests. A radiologist—a doctor who specializes in medical imaging—interprets the images from these tests, and the patient does not need anesthesia.

- **Ultrasound** uses a device, called a transducer, that bounces safe, painless sound waves off organs to create an image of their structure. A specially trained technician performs the procedure in a health care provider's office, an outpatient center, or a hospital. The images can show cysts in the kidneys as well as the kidneys' size and shape.
- **Computerized tomography (CT) scans** use a combination of x rays and computer technology to create images. For a CT scan, a nurse or technician may give the patient a solution to drink and an injection of a special dye, called contrast medium. CT scans require the patient to lie on a table that slides into a tunnel-shaped device where an x-ray technician takes the x-rays. An x-ray technician performs the procedure in an outpatient center or a hospital. CT scans can show cysts and tumors in the kidneys.
- **Magnetic resonance imaging (MRI)** is a test that takes pictures of the body's internal organs and soft tissues without using x-rays. A specially trained technician performs the procedure in an outpatient center or a hospital. Although the patient does not need anesthesia, a health care provider may give people with a fear of confined

spaces light sedation, taken by mouth. An MRI may include the injection of contrast medium. With most MRI machines, the patient will lie on a table that slides into a tunnel-shaped device that may be open-ended or closed at one end. Some machines allow the patient to lie in a more open space. During an MRI, the patient, although usually awake, must remain perfectly still while the technician takes the images, which usually takes only a few minutes. The technician will take a sequence of images from different angles to create a detailed picture of the kidneys. During the test, the patient will hear loud mechanical knocking and humming noises from the machine.

Sometimes a health care provider may discover acquired cystic kidney disease during an imaging exam for another condition. Images of the kidneys may help the health care provider distinguish acquired cystic kidney disease from PKD.

### **How is acquired cystic kidney disease treated?**

If acquired cystic kidney disease is not causing complications, a person does not need treatment. A health care provider will treat infections with antibiotics—medications that kill bacteria. If large cysts are causing pain, a health care provider may drain the cyst using a long needle inserted into the cyst through the skin.

When a surgeon transplants a new kidney into a patient's body to treat kidney failure, acquired cystic kidney disease in the damaged kidneys, which usually remain in place after a transplant, often disappears.

A surgeon may perform an operation to remove tumors or suspected tumors. In rare cases, a surgeon performs an operation to stop cysts from bleeding.

### **Have Regular Screenings to Look for Cyst or Tumor Growth**

Some health care providers recommend all people with end-stage kidney disease get screened for kidney cancer using CT scans or MRIs after 3 years of dialysis. People with acquired cystic kidney disease should talk with their health care provider about when to begin screening.

### **Eating, Diet, and Nutrition**

No specific diet will prevent or delay acquired cystic kidney disease. In general, a diet designed for people on hemodialysis or peritoneal dialysis reduces the amount of wastes that accumulate in the body between dialysis sessions.

Read more in *Eat Right to Feel Right on Hemodialysis and Nutrition for Adults with Advanced Chronic Kidney Disease* at [www.kidney.niddk.nih.gov](http://www.kidney.niddk.nih.gov).

## Points to Remember

- Acquired cystic kidney disease happens when a person’s kidneys develop fluid-filled sacs, called cysts, over time.
- Acquired cystic kidney disease occurs in children and adults who have
  - chronic kidney disease (CKD)
  - end-stage kidney disease (ESRD)
- People with acquired cystic kidney disease may develop the following complications:
  - an infected cyst, which can cause fever and back pain
  - blood in the urine, which can signal that a cyst in the kidney is bleeding
  - tumors in the kidneys
- To confirm the diagnosis, the health care provider may order one or more imaging tests:
  - Ultrasound
  - Computerized tomography (CT) scan
  - Magnetic resonance imaging (MRI)
- If acquired cystic kidney disease is not causing complications, a person does not need treatment.
- A health care provider will treat infections with antibiotics—medications that kill bacteria.
- If large cysts are causing pain, a health care provider may drain the cyst using a long needle inserted into the cyst through the skin.
- A surgeon may perform an operation to remove tumors or suspected tumors. In rare cases, a surgeon performs an operation to stop cysts from bleeding.

## 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 failure and finding treatments to stop its progression. 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.

Clinical trials are research studies involving people. Clinical trials look at safe and effective new ways to prevent, detect, or treat disease. Researchers also use clinical trials to look at other aspects of care, such as improving the quality of life for people with chronic illnesses. To learn more about clinical trials, why they matter, and how to participate, visit the NIH Clinical Research Trials and You website at [www.nih.gov/health/clinicaltrials](http://www.nih.gov/health/clinicaltrials). For information about current studies, visit [www.ClinicalTrials.gov](http://www.ClinicalTrials.gov).

You may also find additional information about this topic by visiting MedlinePlus at [www.medlineplus.gov](http://www.medlineplus.gov).

This publication may contain information about medications and, when taken as prescribed, the conditions they treat. When prepared, this publication included the most current information available. For updates or for questions about any medications, contact the U.S. Food and Drug Administration toll-free at 1-888-INFO-FDA (1-888-463-6332) or visit [www.fda.gov](http://www.fda.gov). Consult your health care provider for more information.

## For More Information

**American Association of Kidney Patients**  
2701 North Rocky Point Drive, Suite 150  
Tampa, FL 33607  
Phone: 1-800-749-2257 or 813-636-8100  
Fax: 813-636-8122  
Internet: [www.aakp.org](http://www.aakp.org)

### Life Options

c/o Medical Education Institute, Inc.  
414 D'Onofrio Drive, Suite 200  
Madison, WI 53719  
Phone: 608-833-8033  
Fax: 608-833-8366  
Internet: [www.lifeoptions.org](http://www.lifeoptions.org)

### National Kidney Foundation

30 East 33rd Street  
New York, NY 10016-5337  
Phone: 1-800-622-9010  
Fax: 212-689-9261  
Internet: [www.kidney.org](http://www.kidney.org)

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The National Kidney Disease Education Program (NKDEP) is an initiative of the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, U.S. Department of Health and Human Services. The NKDEP aims to raise awareness of the seriousness of kidney disease, the importance of testing those at high risk, and the availability of treatment to prevent or slow kidney disease.

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