



Kidney Biopsy

What is a kidney biopsy?

A kidney biopsy is a procedure that involves taking a small piece of kidney tissue for examination with a microscope. A pathologist—a doctor who specializes in diagnosing diseases—examines the kidney tissue sample in a lab. The pathologist looks for signs of kidney disease or infection. If the kidney has been transplanted and is not working, a kidney biopsy may help identify the cause.

One of the following specialists will perform the kidney biopsy at a hospital or an outpatient center:

- a nephrologist—a doctor who specializes in treating kidney disease
- a urologist—a doctor who specializes in treating urologic and sexual problems
- a transplant surgeon—a doctor who specializes in performing organ transplants
- an interventional radiologist—a doctor who performs procedures using imaging equipment

Why is a kidney biopsy performed?

A health care provider will perform a kidney biopsy to evaluate any of the following conditions:

- hematuria—blood in the *urine*, which can be a sign of *kidney disease* or other urinary problems.
- albuminuria—a condition in which the urine has more-than-normal amounts of a protein called albumin. Albuminuria may be a sign of kidney disease.
- changes in kidney function, which can cause the buildup of waste products in the blood.

The kidney tissue sample can show inflammation, scarring, infection, or unusual deposits of a protein called immunoglobulin. If a person has chronic kidney disease—any condition that causes reduced kidney function over a period of time—the biopsy may show how quickly the disease is advancing. A biopsy can also help explain why a transplanted kidney is not working properly.

Health care providers may use a kidney biopsy to diagnose cancer. If cancer is present, there is a small chance that the biopsy needle will spread the cancer. In addition, the biopsy specimen is very small and may miss the cancer and, therefore, may not provide the right diagnosis.

What should a person do days before a kidney biopsy?

Days before the procedure, a person should prepare for a kidney biopsy by

- talking with a health care provider
- arranging for a ride home

Talking with a Health Care Provider

People should talk with their health care provider about medical conditions they have and all prescribed and over-the-counter medications, vitamins, and supplements they take, including

- aspirin or medications that contain aspirin
- nonsteroidal anti-inflammatory medications such as ibuprofen and naproxen
- blood thinners
- arthritis medications

People should also tell their health care provider about any allergies they have to medications or foods.

The health care provider should discuss the risks of the procedure, and the person should ask questions or bring up concerns. Two weeks before the biopsy, the health care provider may instruct a person to stop taking certain medications that cause thinning of the blood because this may increase the risk of bleeding after the kidney biopsy. The health care provider may also tell the person not to eat or drink anything for 8 hours before the biopsy.

Arranging for a Ride Home after the Procedure

For safety reasons, people can't drive for 24 hours after the procedure because they are given a sedative to help them relax just before the procedure. A health care provider will ask a person to make advance arrangements for getting home after the procedure.

What can a person expect on the day of the kidney biopsy?

A person should arrive 90 minutes to 2 hours before the kidney biopsy to have time for several preliminary procedures, including

- signing a consent form
- having blood tests
- receiving intravenous (IV) fluids and medications

Signing a Consent Form

A health care provider will ask the person to sign a consent form that states that he or she understands the risks of the procedure and gives permission for the health care provider to perform the kidney biopsy.

Having Blood Tests

Shortly before the procedure, a health care provider will perform blood and urine tests to make sure the person doesn't have a condition that would make having a biopsy risky, such as a bleeding problem or high blood potassium.

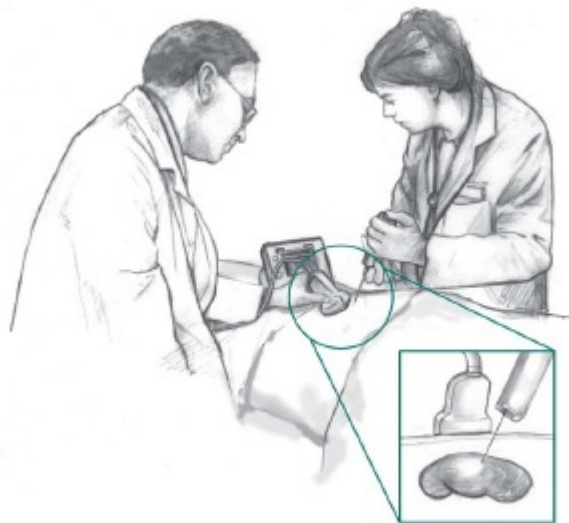
Receiving IV Fluids and Medications

A nurse or technician will insert an IV line into a vein in the person's arm to give fluids and medications, including sedatives.

How is a kidney biopsy performed?

The procedure typically takes about an hour and includes the following steps:

- Most people will lie on their abdomen on an examination table. The technician will place a firm pillow or sandbag under a person's body to support the abdomen and help push the kidneys up toward the person's back and the surface of the skin. People who have a transplanted kidney lie on their backs because surgeons place transplanted kidneys in the front-lower part of the abdomen, to one side of the bladder.
- A nurse or technician will give the person sedatives through the IV.
- The health care provider will mark the point where the needle will enter the skin, clean the area, and inject a local anesthetic to numb the area.
- Next, the health care provider uses imaging techniques, such as ultrasound, to guide the biopsy needle into the kidney. Ultrasound uses a device called a transducer that bounces safe, painless sound waves off organs to create an image of their structure. Sometimes the health care provider uses a computerized tomography scan or magnetic resonance imaging to guide the needle into the kidney.
- The health care provider will ask the person to hold his or her breath and stay still as the health care provider inserts the biopsy needle and removes the kidney tissue. When the health care provider takes the biopsy, the instrument will make a clicking or popping noise. The health care provider may need to insert the needle three or four times. People most often will need to hold their breath for about 30 seconds or a little longer for each insertion.



The health care provider uses imaging techniques such as ultrasound to guide the biopsy needle into the kidney.

For people with bleeding problems, the health care provider uses a laparoscope—a thin tube with a video camera. This procedure is surgery that requires general anesthesia. The surgeon makes a small incision into the back and inserts the laparoscope to see the kidney. The surgeon can insert tiny tools through the laparoscope to collect tissue samples and can watch after the procedure through the camera to make sure that if there is any bleeding, he or she can stop it.

What can a person expect after a kidney biopsy?

After a kidney biopsy, a person can expect to

- lie on his or her back in the clinic or hospital for a few hours. During this time, the staff will monitor the person's blood pressure, pulse, urine, and blood test results.
- go home the same day, in most cases; however, a person will need to rest at home for 12 to 24 hours after the biopsy. Sometimes a person may need to stay overnight at the hospital.
- have some pain or soreness near the point where the needle went through the skin.
- receive written instructions for ensuring a healthy recovery from the procedure. Most people need to wait 2 weeks before resuming strenuous activities, such as heavy lifting or participating in contact sports.

A health care provider most often receives the complete biopsy results from the pathologist in about a week. In urgent cases, a person may receive a preliminary report within 24 hours. The health care provider will review the results with the person during a follow-up visit.

What are the risks of a kidney biopsy?

The risks of a kidney biopsy include

- bleeding—the most common complication of a kidney biopsy. Bleeding may come from the kidney or the puncture site. Bleeding from the kidney rarely requires a blood transfusion.
- infection—a rare complication of a kidney biopsy. Health care providers prescribe bacteria-fighting medications called antibiotics to treat infections.

Seek Immediate Care

People who have any of the following symptoms after a kidney biopsy should seek immediate medical attention:

- unable to urinate.
- frequent or urgent need to urinate.
- burning sensation when urinating.
- urine that is dark red or brown. Blood that makes the urine pink or slightly cloudy is normal for 24 hours after the procedure.
- blood or pus from the biopsy site that saturates the bandage.
- worsening pain at the biopsy site.
- fever.
- feeling faint or dizzy.

Points to Remember


- A kidney biopsy is a procedure that involves taking a small piece of kidney tissue for examination with a microscope.
- A health care provider will perform a kidney biopsy to evaluate any of the following conditions:
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 - albuminuria—a condition in which the urine has more-than-normal amounts of a protein called albumin. Albuminuria may be a sign of kidney disease.
 - changes in kidney function, which can cause the buildup of waste products in the blood.
- Before the kidney biopsy, a person should
 - talk with their health care provider about medical conditions and allergies they have and all medications they take.
 - understand the risks of the procedure.
 - follow their health care providers' instructions about food or medication restrictions.
 - arrange for a ride home.
- On the day of the kidney biopsy, a person should expect to
 - sign a consent form.
 - have blood tests.
 - receive intravenous (IV) fluids and medications.

- After the kidney biopsy, most people need to wait 2 weeks before resuming strenuous activities.
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Clinical Trials


The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and other components of the National Institutes of Health (NIH) conduct and support research into many diseases and conditions.

What are clinical trials, and are they right for you?

Clinical trials are part of clinical research and at the heart of all medical advances. Clinical trials look at 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. [Find out if clinical trials are right for you](#) NIH .

What clinical trials are open?

Clinical trials that are currently open and are recruiting can be viewed at www.ClinicalTrials.gov NIH .

This information may contain content about medications and, when taken as prescribed, the conditions they treat. When prepared, this content 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 . Consult your health care provider for more information.

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