

# Biopsy of the Kidney: What You Need to Know

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## What is a renal (kidney) biopsy?

A renal biopsy is a procedure in which a sample of kidney tissue is obtained. The tissue is then examined under a microscope to give information needed to diagnose, monitor or treat a kidney disorder.

**Why do I need a biopsy?** Your nephrologist (kidney doctor) has recommended that you have a biopsy. Not every person with kidney disease needs a biopsy. It is most commonly performed when the cause of damage to your kidneys is uncertain. The following are examples of the most common reasons for biopsy:

- ❖ **Hematuria with renal disease.** Hematuria (blood in the urine) can occur with a number of conditions that affect the kidneys and urinary tract.
- ❖ **Proteinuria.** Proteinuria (protein in the urine) occurs in many patients with kidney conditions. Renal biopsy is usually reserved for people with relatively high or increasing levels of protein when the cause is unclear.
- ❖ **Nephrotic syndrome.** If you have nephrotic syndrome (significant proteinuria, low blood albumin level, and edema (swelling) of the arms and legs) you may need a renal biopsy.
- ❖ **Acute renal failure.** Acute renal failure refers to sudden kidney injury that hurts function. The cause of acute renal failure can usually be determined without a biopsy. Biopsy is sometimes

needed in cases when the cause is uncertain.

- ❖ **Acute nephritic syndrome.** People with acute nephritic syndrome have hematuria, proteinuria, high blood pressure, and kidney damage. A biopsy may be recommended to determine the cause of nephritic syndrome unless it can be determined through blood testing.

## What is involved with a biopsy?

**Preparation.** Testing may be done before the biopsy to be sure that there is no evidence of infection or a blood clotting abnormality. The biopsy is usually performed while you are awake, after receiving an injection of local anesthesia (numbing medicine) to minimize pain.

**To decrease your risk of bleeding,** you should avoid medicines that increase the risk of bleeding (such as aspirin or nonsteroidal anti-inflammatory drugs (ibuprofen, naproxen)) for one to two weeks before the biopsy. If you take warfarin (Coumadin) or heparin (drugs that impair clotting and increase the risk of bleeding), you will be given specific instructions about the dose and time to take these medications before surgery.

**Biopsy procedure.** In most cases, an ultrasound or computed tomography (CT scan) is done to guide the physician inserting the needle. The needle is inserted through the skin in the back and into the kidney. Then a sample of kidney tissue is withdrawn.

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**After the biopsy.** Following the biopsy, you will be kept in the post-operative recovery unit for several hours to monitor for potential complications, including pain and bleeding.

### What are potential complications?

Serious complications of renal biopsy are rare.

- ❖ **Bleeding.** Bleeding is the most common complication of renal biopsy. Most people who have a renal biopsy notice blood in the urine for several days after the procedure. If you notice urine that is bright red or brown for longer than one week please consult with your healthcare provider. Rarely, bleeding is severe enough to require a blood transfusion or surgery.
- ❖ **Pain.** Pain is a common problem, although it is usually mild to moderate and resolves within a few hours. Medications can be given to reduce pain after the procedure. If you experience severe or prolonged pain please call your healthcare provider; this can be a sign of a blood clot that is obstructing the ureter (tube that leads to the bladder) or a large hematoma (a mass of clotted blood) that stretches the kidney.
- ❖ **Arteriovenous fistula.** Damage caused by the biopsy needle to the walls of an adjacent artery and vein can lead to a fistula (a connection between the two blood vessels). Fistulas usually do not cause problems and most often close on their own over time.

**When will I hear the results?** Usually your nephrologist (kidney doctor) will be called with preliminary results in 48-72 hours. However, many tests are run on the kidney tissue, so a final report will not be sent to your nephrologist for several business days.

### Where can I get more information?

Your healthcare provider is the best source of information for questions and concerns related to your medical problem. Because no two patients are exactly alike and recommendations can vary from one person to another, it is important to seek guidance from a provider who is familiar with your individual situation.

**Web Sites.** Information provided by the National Institutes of Health, national medical societies and some other well-established organizations are often trustworthy sources of information.

**National Library of Medicine**  
([www.nlm.nih.gov/medlineplus/healthtopics.html](http://www.nlm.nih.gov/medlineplus/healthtopics.html))

**National Institute of Diabetes and Digestive and Kidney Diseases**  
([www.niddk.nih.gov](http://www.niddk.nih.gov))

**National Kidney Foundation**  
([www.kidney.org](http://www.kidney.org))



*References: Up-to-Date 2007, Patient information and Nathan Chamberlain, MD.*