

Preparation for a Kidney Biopsy

How will a Kidney Biopsy help my child?

Sometimes, the only way to diagnose a kidney disease is to look at a tiny piece of the kidney under a microscope. There are 2 ways to get this tiny piece: having a surgeon open up the back or by sticking a needle through the back into the kidney. Most kidney diseases affect both kidneys, so the biopsy only needs to be done on one kidney.

Preparing for the Biopsy

Before the procedure, your pediatric kidney doctor will discuss the reasons for the biopsies and the risks and benefits. A parent must read, understand, and sign the consent form which will be reviewed by the doctor. Your child also will have an ultrasound of the kidneys and blood drawn from a vein to make sure blood clotting is working normally. On the day of your child's biopsy, he or she may have nothing to eat or drink six hours before the biopsy is scheduled. Your child must also not take ibuprofen or naproxen in the 3 days prior to the biopsy.

The Actual Biopsy

Children will receive anesthesia to induce sleep and lessen pain. This will be given through an IV. The pediatric anesthesiologist will monitor your child's breathing, heart rate, blood pressure, and oxygen levels during the procedure. Once your child is sleeping, the child is placed on their stomach and a rolled blanket is placed under their belly to straighten out the back. The radiologist looks at the kidneys with an ultrasound machine to mark the safest spot on the back. The back is then cleaned with an antiseptic liquid and the doctors put on sterile gloves. Sterile drapes are placed over the back. Using an ultrasound machine to guide them, the doctor inserts a small needle through the skin and down to the edge of the kidney. Numbing medicine is then injected at the edge of the kidney and then through the path of the needle as the needle is removed.

A small ¼ inch nick is made with a scalpel at the needle entrance. Then, using the real-time ultrasound as a guide, the biopsy needle is inserted through the skin down the path to the edge of the kidney. A tiny button on the needle is pushed to capture a tiny piece of kidney tissue about one centimeter long and slightly thinner than a pencil lead. The needle is then taken out and the piece is given to a microscope specialist (pathologist) to determine if the sample is good enough to determine the cause of your child's kidney condition. This process of inserting the biopsy needle and taking a tiny piece of kidney tissue is done at least twice, but may be done up to 5 times to make sure the pathologist has enough glomeruli (tiny filters which make up the kidney) to make a diagnosis with the microscope. Your child has about 2 million of these tiny filters and the procedure only takes about 30 of them.

When the pathologists tells the team that the sample is good, pressure is held for 5 minutes on the back and the skin is cleaned of the very tiny amount of blood from the nick in the skin. A pressure dressing is placed over the nick. The anesthesiologist begins the process of waking up the child who is then brought to the recovery room or to a hospital room on the pediatric floor.

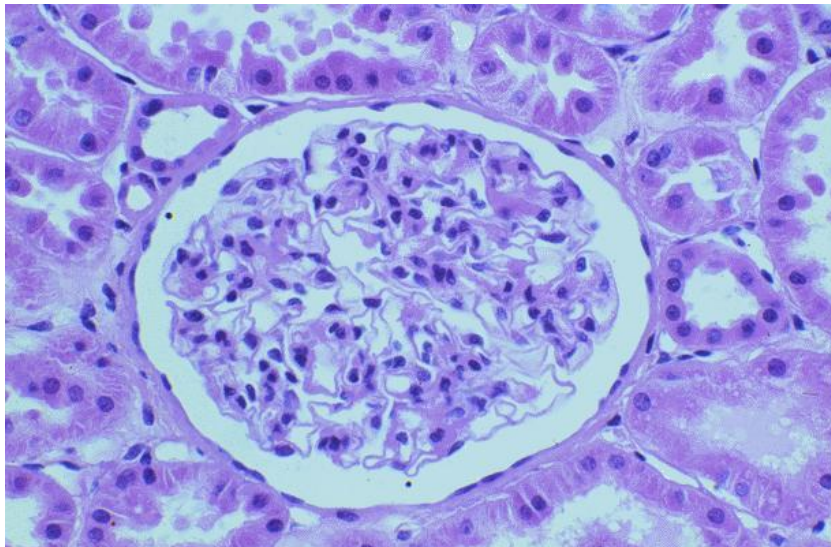
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After the Biopsy

After the biopsy, eating and drinking is allowed, but staying in bed and following the orders of doctors and nurses is very important. Your child will lie on his or her back or sit with the back against the bed as much as possible. The IV will stay in until it is safe to take it out. If there are no complications, your child can go home the next morning. Often, there will be visible blood in the urine that clears over night. Pain is usually mild and acetaminophen (Tylenol) usually helps. Your doctors will prescribe stronger pain medication if your child needs it.

For one week after your biopsy, it is important for your child to not participate in contact sports such as football, lacrosse, horseback riding, rodeo, or trampoline. Normal everyday things are okay, and your child can return to school. If your child experiences discomfort in his or her back, they can take some acetaminophen (Tylenol).

The nick in the skin at the biopsy site does not require any special care. If any concerns arise, such as increasing back or abdominal pain or increasing blood in your child's urine, let your family doctor know. When the results of the kidney biopsy are known, your child's nephrologist will discuss them with you.



An example of what the kidney biopsy provides. This is a microscope picture of a **glomerulus**, one of the 2 million tiny filters in the kidneys, surrounded by **tubules** that fine-tune the urine. A pathologist can tell why the kidney is not working properly from studying these filters and the tubules around them.