

Percutaneous Nephrolithotomy (PCNL)

What is a percutaneous nephrolithotomy?

Percutaneous Nephrolithotomy (PCNL) is the most effective of the commonly performed procedures for kidney stones. It is the best procedure for large and complex stones.

To perform this surgery, the urologist makes a ½ **inch incision** in your back, and places a hollow tube that provides access to the inside part of your kidney that contains the stones. The urologist inserts a stiff metal telescope through the tube and removes the stones directly or by breaking them into fragments which are removed.

What are the risks?

Because of the incision in the skin and the tube placed into the kidney, PCNL carries more risk than the other commonly performed procedures for kidney stones. This surgery requires at least an overnight stay in the hospital. It cannot be performed in patients taking anticoagulation medications or those with uncorrected bleeding disorders.

What steps should I take to prepare for the procedure?

1. **Do not eat any solid food** (including gum, hard candy or mints) after 12am (midnight) the night before surgery.
2. **Do not drink any milk products** after 12am (midnight). **You may drink water** only and any routine medications up to 4 hours before your surgery.
3. Wear loose, simple clothing which can easily be changed. Leave all jewelry and valuables at home.
4. **Bring along to the hospital a responsible adult companion who will:** remain in the hospital, be available to hospital personnel during your

procedure, and assist you upon discharge by driving you home with close observation of your condition.

What should I expect before the procedure?

1. You will have lab tests and X-rays to ensure your safety during the procedure.
2. Arrive at the Information Desk, first floor, Main Hospital at the time requested. Please allow time to register and change your clothing. Hospital personnel will assist you and escort you to the designated area.
3. You will receive an antibiotic, either by mouth or through an IV, right before the procedure.
4. The anesthesia team attaches monitoring devices to you. In almost all cases, they place you under general anesthesia (medication that blocks pain and puts you to sleep) for this procedure.
5. You will be taken to the Radiology Suite, where the entire procedure will be performed.

What will happen during the procedure?

1. After you are asleep, the surgical team places you very carefully on your stomach.
2. The urologist and radiologist work together to place the hollow tube in the part of the kidney that provides the best access to your stones.
3. Your urologist then removes the stones, either directly or after breaking them into smaller fragments.
4. The procedure can take as little as an hour or as long as several hours.
5. A temporary plastic tube is left inside you at the end of the procedure.
 - One type of tube, called a “**nephrostomy tube**,” exits out of the small incision that was made in your back.
 - Another type of tube, called a “**stent**,” is completely internal.
 - Your urologist will decide which tube to use based on many factors.
 - A **Foley catheter** is also placed in your urethra. A Foley catheter is a tube that is passed through the urethra and into the bladder to drain urine.

6. After the procedure, you will be moved to the post-operative recovery area, usually for about 2 hours.

What should I expect after the procedure?

After waking up adequately, you are taken to the Surgical Short Stay Unit. Family members in the waiting room are notified of your transfer and are allowed in to see you once we have you settled. You can usually expect to stay in the Surgical Short Stay Unit for 1-2 nights after your procedure.

Will I have my own room?

The Surgical Short Stay Unit does not have individual patient rooms. It is set up similar to the pre- and post-op rooms, with beds separated by curtains, which allows the nursing staff to closely observe you and to respond quickly to your needs. Please note that cell phone reception in the Surgical Short Stay Unit is poor.

When will my tubes be removed?

Your urine will drain out of the tube in your urethra and the tube coming out of the incision in your back. You will notice some blood mixed with the urine in one or both tubes. The morning after surgery, if the blood in the urine has decreased enough, the tubes might be removed.

Nephrostomy (back) tube:

- The tube coming out of the incision in your back (if present) is removed in the Radiology Suite after taking an X-ray.

Internal Tube (stent):

- If an internal tube (“stent”) has been inserted the stent will be removed 1 or 2 weeks after you are discharged from the hospital with a minor procedure in your Urologist’s clinic.

Urethra Tube:

- The tube in the urethra is removed following nephrostomy (back) tube removal, by deflating the balloon holding it in place, allowing it to gently slide out.

If the tubes are not removed on the day after surgery, because there was too much blood in the urine or for some other reason related to your procedure, they are usually removed the following week.

- After tubes are removed, and after you have been able to urinate, you are discharged from the hospital.
- In some cases, you will be discharged with one or more tubes still in place. We will teach you and your family how to care for those tubes, and home nursing assistance will be provided if needed.

How will I manage my pain at home?

You will receive oral opioid (narcotic) tablets for pain relief at home. Opioids are medications that are used for moderate to severe pain.

You may or may not receive antibiotic pills, depending on a number of factors.

What are my activity instructions?

You should avoid strenuous activity or heavy lifting for the week following the procedure or until the tubes come out. After that week, most people can resume normal activities without pain.

- Do not drive any motor vehicle or operated motorized equipment for at least 24 hours after your procedure.
- Do not make any complex decisions, sign legal documents, or participate in activities potentially harmful to others, e.g., cooking, nursing infants, without supervision for at least 24 hours after your procedure.
 - This is to allow time for the anesthetic to leave your body.
- Do not drink alcohol for at least 24 hours after your procedure.

- Begin eating food slowly. Start with sips of liquids, followed by the addition of solid foods as tolerated.
 - If you do not feel like eating solids, take liquids
 - Nausea and/or vomiting commonly occurs during this period and is not considered abnormal unless severe or persistent beyond the first day.

When is my follow up visit?

- You will have a follow up visit with your urologist approximately 6 weeks after surgery.
 - At that time, we will take an X-ray to determine the procedure's success and to assess for any complications.
- Depending on your risk of recurrence, your doctor may order further testing to help prevent future stones.

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