

## KIDNEY STONE—TREATMENT

### How are kidney stones treated?

For people suffer from kidney stones options available are :

- Wait & Watch
- Lithotripsy
- Endoscopic stone treatment
- Open Surgery .

If & how your stone needs to be treated will depend on various factors like size, number, hardness of stone & its effects.

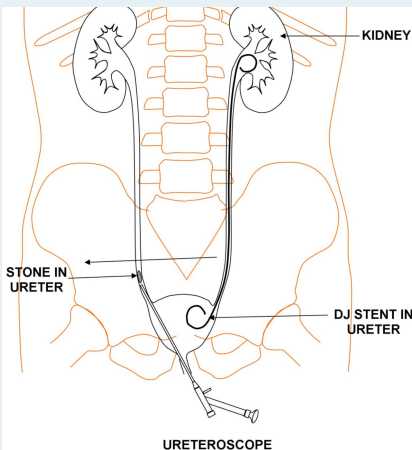
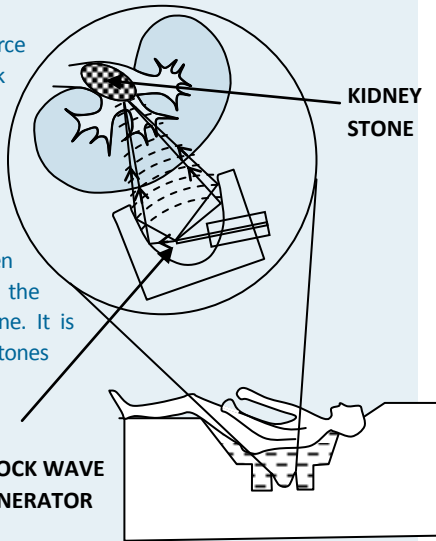
### What is lithotripsy ?

An energy source generates a shock wave that is focused on the stone. The shock waves break the stone into small pieces. These small stone particles then harmlessly pass down the ureter along with urine. It is not advised for stones larger than 1.5 cm.

Sometimes, a stent (tube) may be placed in the ureter just prior to ESWL for patient comfort when difficulty is anticipated in passage of stone fragments.

### What is Ureterscopy ?

Under anesthesia a very thin endoscope is inserted through the urethra & bladder up into the ureter. The stone can be seen



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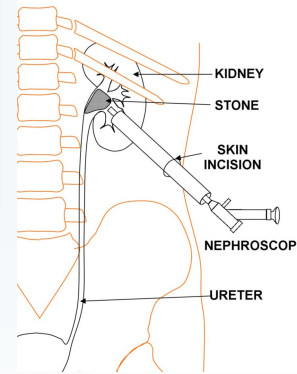
through the endoscope. While smaller stones can be grasped & removed larger Large stone need to be fragmented before removal. Subsequently, a stent may be placed within the ureter.

### What is the expected time to recovery after URS?

Patients normally go home after 1-2 days. They can resume normal activity almost immediately. If a stent has been placed, it will need to be removed in 3-6 weeks. In some Stents are usually well tolerated by patients. In an occasional patient it can cause some frequent & urgency in urination, blood in urine.

### What is Percutaneous nephrolithotomy (PCNL)?

PCNL is used to remove large stones lodged in the kidney. General anesthesia is required to perform a PCNL. A small 1-centimeter incision is made in the patient's back and a passage is made through to the kidney up till the stone. The endoscope is then passed directly into the kidney. While smaller stones may be extracted as a whole but the large ones need to be broken into smaller pieces before they can be extracted. Once the procedure is complete, a tube is left in the body to drain the kidney for a few days.



### What is the expected time to recovery after PCNL?

After PCNL, patients usually spend 4-5 days in the hospital. After the operation, X-rays will be done to confirm that no sizable stone fragment is remaining inside. If all the stones have been removed, the tube coming out of the back is removed & the patient can be discharged. Normal activity can be resumed after approximately 1 to 2 weeks.

### What is the chance of stones remaining behind after PCNL/URS?

**URS:** In URS the stone is fragmented into small 1-2 mm particles which will pass off harmlessly in urine.

**PCNL:** In 90- 95% cases there will be no stone remaining behind or the stone will be so small (1-2 mm) that it will pass out with urine without any problem.

### Is open surgery needed to tackle kidney stones?

A large incision (about 15-20 cm) is required in order to expose the kidney or portion of ureter that is involved with the stone. The

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portion of kidney overlying the stone or the ureteral wall is then cut open and the stone extracted out. At present, open surgery is used only for complicated cases of stones.

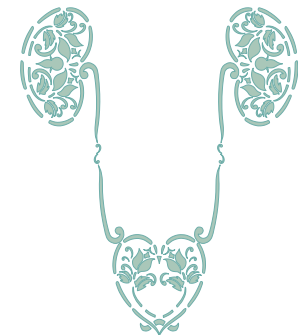
### What are the risks or potential complications of the various treatments?

Each treatment has its own risks. Risks that are associated with all operations are bleeding & infection. This least for patients undergoing ESWL or URS. The chance of this happening is more with PCNL & open surgery. In most cases, patients do not require transfusion unless the procedure is unusually difficult.

With ESWL, patients must avoid aspirin, non-steroidal anti-inflammatory drugs such as brufen or other blood thinners, as these can cause significant bleeding around the kidney. It is important that these medications be stopped at least one week prior to treatment if possible. ESWL is a very safe treatment. A few people may have an increase in blood pressure after many years.

In URS, there is a small possibility that the ureteral wall could be damaged or torn during the procedure. If this occurs, placement of a stent for two to three weeks is usually sufficient to allow the damaged area to heal. A complete tear of the ureter is very rare and requires open surgery to repair.

With PCNL risk of bleeding is higher. Other rare complications include injury to the lungs, bowel and injury to blood vessels within the kidney.



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