

Kidney Stone Surgical Treatment

Treatment of Kidney Stones

There are many treatment options for kidney stones and the best option depends on the size, location, type of stone, and severity of symptoms. Sometimes your child may be unable to pass the stone after attempting medical expulsive therapy at home. In addition, stones larger than 6 millimeters are less likely to pass on their own. In these instances, your child may require more invasive treatments to eliminate the stone.

Surgical Treatment of Kidney Stones

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Surgical treatment for your child's stone is typically a minimally invasive procedure in an outpatient setting.

- **Extracorporeal Shockwave lithotripsy (ESWL)**

For ureteral stones in the kidney or upper ureter. An outpatient procedure done under sedation. Outpatient procedure where high energy shockwaves are sent through water and aimed at the stone's location. This causes the stone to break apart into multiple small pieces that can be easily passed through the urinary tract.

- **Ureteroscopy and laser lithotripsy**

A procedure performed under general anesthesia where a small, thin scope is passed up the urethra, into the bladder, and up into one or both ureters (the tubes that connect the kidneys to the bladder) until it reaches the stone. If small enough, a tool will be used to grab the stone and remove it. Sometimes, a small laser can be used to break a larger stone into smaller fragments. After this, a small tube, called a stent, may be left in the ureter to prevent obstruction and swelling, and to aid in passage of the stone fragments. A second procedure under general anesthesia is done to remove the stent.

- **Percutaneous nephrolithotomy**

Indicated for larger stones, complex stones, cystine stones (resistant to ESWL) or stones that have failed other therapies. A procedure performed under general anesthesia where a needle is placed into the kidney through the back and instrument is used to remove the stone. A laser may be used to break the stone into smaller pieces. A small tube may be placed in your kidney and exiting out your back, draining to a bag. This tube drains urine and any small pieces of stone into a urine bag. In some cases, a small tube (stent) may also be left in the ureter to help with urine flow and stone passage. A second procedure under general anesthesia is done to remove the stent.

What can I expect after surgery?

- Your child's doctor may ask that you strain the urine to see if you catch any stone material. This can be collected and saved and brought to a lab or a next appointment for stone analysis.
- Encourage your child to drink plenty of fluids, clear liquids are the best. This will help flush out small stone fragments and promote good hydration.
- Some blood in the urine is expected. It may clear up and begin again depending on how hydrated your child is or how active they become.

Will my child be in pain?

Some discomfort is to be expected after any of the above stone procedures. Certain pain medications may be prescribed. If your child is in pain, pain medicine can help. You may alternate Acetaminophen (Tylenol® or another brand) and Ibuprofen (such as Advil® or Motrin®). Do not give aspirin because it may cause bleeding. Other medications may be prescribed to help manage bladder discomfort during urination and recovery, especially if a stent is in place. There may be other medication to help with stone or stone fragment expulsion. Follow your surgeon's specific instructions following surgery for medication management.

Diet after surgery:

Your child may return to a regular diet as tolerated. Depending on the type of kidney stone, dietary changes may be recommended to prevent future stone formation, such as reducing sodium intake or managing calcium levels.

Again, hydration is key and they should drink plenty of fluids after surgery!

Activity:

Your child may resume their normal physical activity as tolerated.

What to call the surgeon for?

- Fever greater than 100.5 degrees F
- Heavy bleeding or clots
- Inability to urinate
- Severe sudden belly or back pain that does not go away
- Persistent nausea and vomiting

We ask that you call your child's primary care provider for other concerns.

Follow-up care:

Follow up with your child's doctor/surgeon as directed.

Call your surgeon's office at (612) 813-8000 option #3 to schedule an appointment.

Questions?

This information is not specific to your child but provides general information.

If you have any concerns or further questions, please call the clinic at (612)813-8000, option #6 for the nurse message line.

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