During lithotripsy, a special machine called a *lithotripter* sends shockwaves harmlessly through the skin and muscles of your back and focuses them directly on the kidney stone. The force of the repeated shockwaves ultimately breaks the stone into tiny pieces, which pass naturally from the body during urination.

**Kidney Stones**

- Pain
- Blood in urine
- Burning sensation while urinating
- Fever
- Nausea
What are kidney stones?

Kidney stones, also called urinary stones or renal calculi, are mineral deposits formed in the kidneys—the two bean-shaped, fist-sized organs located beneath and on each side of your mid-back muscles.

As blood flows through your kidneys, they filter impurities, excess minerals and waste products produced by cells throughout your body.

The cleansed blood continues circulating while the trapped impurities remain behind, eventually mixing with water and leaving your body as urine. Sometimes, though, the filtered minerals build up in the kidneys where they crystallize and develop into stones.

What causes kidney stones?

People develop kidney stones for many reasons. Urine consists mostly of water. If we don’t drink enough water, our bodies can’t produce a sufficient amount of urine to dilute mineral concentrations in the kidneys. That’s why urologists, doctors who specialize in treating kidney disease, recommend that we drink at least eight glasses of water a day.

Some people develop kidney stones because they eat an excess of spinach, chocolate or dairy products. These foods contain minerals such as calcium and salts such as oxalate.
People can also develop kidney stones due to a family history of this illness, or from a recent infection and/or urine flow obstruction. Men between the ages of 20 and 50 stand a higher risk of developing kidney stones than women and children.

**Pain is often the first sign**

Kidney stones can cause numerous problems, including severe pain. For many people, pain resulting from kidney stones sends them to the doctor in the first place.

A kidney stone may cause pain when it moves out of the kidney and into the ureter, the narrow tube transporting urine from the kidney to the bladder. If a stone lodges in the ureter, it can block both the ureter and kidney. However, small stones and sand resulting from lithotripsy tend to pass through the ureter and wash out of the body during urination.

Some stones grow so large they can never leave the kidney. Occasionally a single stone will grow so large it will fill the entire kidney, causing blockage, fever and pain.

Kidney stones can also cause some people to see blood in their urine, feel a burning sensation when urinating, run a fever or feel nauseated.

**Diagnosing kidney stones**

Your doctor may have sent you to get an X-ray or other radiologic test such as an ultrasound or CT scan. These tests help the doctor visualize the actual stone. This information is also very useful when determining which form of treatment for kidney stones suits you best.
A small stone may grow no larger than a grape seed, and drinking lots of water may help flush it from your system. Consuming large amounts of water will definitely increase your urine volume, which helps to dilute mineral and salt concentrations in the kidneys.

Drinking lots of water, diet modifications and certain medications can help prevent stones from forming. However,
such interventions typically dissolve fewer than 10 percent of the stones a person’s body develops.

If stones are causing pain or blockage, your doctor will discuss treatment options with you.

Years ago, urologists would surgically access kidney stones by first making a large incision extending from the patient’s back to their side. Then they’d cut into the kidney or ureter to remove the stone. Following such surgery, the patient spent weeks recovering.

Fortunately, today, for most types of stones, patients benefit from various noninvasive options—particularly lithotripsy.

**Lithotripsy**

Lithotripsy is sometimes called ESWL, which stands for Extracorporeal Shock Wave Lithotripsy. Lithotripsy is a noninvasive treatment. Unlike formal surgery, it does not require an incision, which greatly reduces discomfort, complications and recovery time.

During lithotripsy, a special machine called a lithotripter sends shockwaves harmlessly through the skin and muscles of your back and focuses them directly on the kidney stone. The force of the repeated shockwaves ultimately breaks the stone into tiny pieces, which pass naturally from the body during urination.
Our lithotripsy machines are state-of-the-art, and our caring, attentive staff is highly trained.

More than 30,000 patients have been treated for kidney stones at our conveniently located facilities in Manhattan, East Meadow, White Plains, East Setauket and Queens. We provide free parking at each site.

At whichever facility you choose, your own urologist will treat you.

Today's state-of-the-art lithotripter systems facilitate the fast and extremely efficient treatment of kidney stones. Noninvasive lithotripsy spares patients the pain, discomfort and long recovery time associated with open surgery.

ESWL

- Extracorporeal
- Shock Wave
- Lithotripsy
• Prior to your appointment, we will send you procedure instructions, insurance forms and other paperwork. Be sure to bring these materials with you on the day of your appointment.
• Remember, do not eat or drink anything the day of your lithotripsy. And seven to ten days before your appointment, avoid taking aspirin, ibuprofen or other drugs that interfere with blood clotting. Such medications increase the chance of bleeding when shockwaves pass through the kidney.
• In addition to your urologist, another physician, a board certified anesthesiologist, will remain by your side during the 15-25-minute procedure. The anesthesiologist will administer medication through an intravenous line to sedate you and keep you completely comfortable. Actually, you will be sound asleep during the procedure.

Shortly after your lithotripsy procedure, we’ll bring you to a comfortable recovery room where you can rest and relax before going home.
• When you lie down on the lithotripsy table prior to the procedure, we will position you so your kidney receiving treatment is above and against a water-filled treatment port.

• The computer-controlled shockwave generator directs the pulses of energy through the treatment port directly to your kidney stone.

• During the procedure, your urologist will intermittently evaluate the stone's fragmentation. In approximately 90 percent of all cases, kidney stones break up after one treatment, but occasionally a second treatment is necessary at another time.

• After the procedure, we will take you to the recovery room to rest before going home. You must have an adult family member or friend available to escort you home.

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**What to expect after lithotripsy**

As a result of the treatment, your stone will have been broken into many small pieces, some the size of sand. The nurse will give you a special strainer called a stone interceptor cup. We will show you how to use it to strain your urine during the next several days.

Bits of stone will naturally pass out of your body when you urinate. You must drink at least one to two quarts of water each day, but avoid alcohol during the first 24 hours.

When you strain your urine, it might look red. This is perfectly normal. It means some blood has mixed with the urine as a result of the shockwaves passing through the kidney.
If you begin to pass clots each time you urinate, or if the urine looks thick and bright red, call your urologist.

Following ESWL, you might notice bruises on your back or along your side. If they become uncomfortable, applying an ice pack to the bruises can help. If your doctor gave you a prescription for pain medication, you may take it as prescribed. However, for the next 48 hours, avoid aspirin-containing products or drugs such as ibuprofen.

## Treatment for prostate enlargement

Through our affiliate, Metropolitan Urological Specialist, we perform state-of-the-art minimally invasive treatments for men suffering from prostate enlargement, which is commonly called benign prostatic hyperplasia or BPH.

If you are a man and are experiencing troublesome urinary frequency, speak to your doctor about BPH.

For more information about lithotripsy or BPH, please call any of our treatment centers.
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