

**ROCKFORD UROLOGICAL ASSOCIATES, LTD.  
351 EXECUTIVE PARKWAY  
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**EXTRACORPOREAL SHOCK WAVE LITHOTRIPSY (ESWL)**

**WHAT IS LITHOTRIPSY?**

It is a medical procedure used to break up stones in the kidney and urinary tract. Lithotripsy is not open or invasive surgery. Lithotripsy uses shock waves generated outside the body. These shock waves crumble the stone into tiny particles. The particles can then be passed out of the body into the urine.

**HOW DOES LITHOTRIPSY WORK?**

The equipment that is used is called a lithotripter. It is made up of a comfortable treatment table, image intensifiers to provide clear digital x-ray images to observe the stones as they are located and disintegrated, and an energy source contained in a water cushion to generate the shock waves.

The patient is positioned on the table against the water cushion. The stone is located by the x-ray systems and then the energy source is precisely aimed. The energy source is "fired" generating shock waves that travel through the water in the cushion. The shock waves focus their energy on the stone. Repeated shock waves break the stone into sand-like particles.

**WHO CAN UNDERGO LITHOTRIPSY?**

Just about anyone. However, there are some restrictions due to the nature of the equipment. In general, patients must weigh less than 300 pounds. Lithotripsy is not recommended for patients with certain conditions, including pregnancy, bleeding disorders, obstructions below the stone, and no kidney function.

Lithotripsy is considered safe, with significantly fewer risks than open, invasive surgery. It is less painful than surgery. Since no incisions are made, the risk of infection and bleeding are greatly reduced. It is very effective as most patients only need one treatment. For most patients, lithotripsy means a quicker recovery than open, invasive surgery.

**WHY DO I NEED AN ANESTHETIC?**

The shock waves entering the body do cause pain, a sharp pain, and at an effective treatment intensity, are not tolerable. When this procedure is described as "painless" it is because there is an anesthetic given to make it painless.

**Type of Anesthetics**

We use:

- **Deep IV sedation** – most commonly, a continuous propofol infusion combines with a narcotic. This provides for pain relief and lets patients lie still and comfortable.
- **Sedation** – Sedation pain relief is adequate if stones are located in the kidney and are not too large. The urologist and the anesthesiologist will discuss the possibilities of sedation only.

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**WHY IS A STENT OR CYSTOSCOPY SOMETIMES NECESSARY?**

When large stones are crushed in the kidney they have a tendency to clog up the tract as they exit the kidney. This causes severe pain when the urine flow is stopped.

To prevent this obstruction, a small, soft, flexible catheter, called a stent, is inserted up to the kidney through the opening in the bladder. The end of the catheter will be coiled in the bladder and not visible to you. This stent is hollow and allows for urine drainage from the kidney to the bladder as the stone pieces are passing. When all the pieces have been eliminated, the stent will be removed. This could take from two to three days to a week or more, depending on the size of the stone.

Some stones are smaller and hard to see on x-rays. In this case it is important for their position to be identified with a marker such as a catheter before they can be successfully located and pulverized. Cystoscopy will be done to insert this temporary catheter up to the level of the stone for easy localization. Of course with the sedation, this is painless and takes about 20 minutes to half an hour. This type of catheter is temporarily connected to a drainage bag and is usually removed in the recovery room.

**DO I NEED MY X-RAYS?**

Usually it will be the responsibility of the patient to bring with them the most recent IVP or other films pertinent to this stone episode. You should ask your doctor who will bring the x-rays on the day of your procedure. Your x-rays are helpful for stone evaluation and localization.

**WHY IS ANOTHER X-RAY NEEDED BEFORE THE TREATMENT WHEN I'VE HAD SO MANY ALREADY?**

Stones move around and on the day of the procedure it is important to know the exact location of the stone(s). This cuts down on time and x-ray exposure if needed to locate a stone that has moved once on the treatment table.