



Extracorporeal Shock Wave Lithotripsy (ESWL)



What is Extracorporeal Shock Wave Lithotripsy (ESWL)?

Extracorporeal shock wave lithotripsy (ESWL) uses shock waves to break kidney stones into small pieces so that the fragments can be passed out in the urine.



This procedure usually is not used if you:

- Are pregnant. The shock waves and X-rays may be harmful to the fetus.
- Have a bleeding disorder.

Are all stones treatable by ESWL?

NOT all stones can be treated.

90% of urinary stone can be treated by ESWL and this includes stones that are not too large and not causing obstruction or infection.

How does ESWL work?

- The shock wave from an energy source are transmitted through the patient's skin and pass harmlessly through the patient's soft tissue.
- The shock wave passes through the kidney and strikes the stone. At the stone boundary, energy is lost, and this causes small cracks to form on the edge of the stone. The same effect occurs when the shockwave exits the stone. With successive shocks, the cracks open up, and in turn, smaller cracks form within the large cracks. Eventually, the stone is reduced to small particles, which are then flushed out from the kidneys or ureter during urination.
- The process generally takes about 1 hour during which up to 4,000 to 5,000 shocks are administered.
- The patient may experience some discomfort during the treatment depending on the patient's pain tolerance. Analgesics may be administered to make the patient more comfortable.

How do I prepare for the examination?

- This can be done as an inpatient or an outpatient basis.
- No overnight fasting is necessary, although a heavy meal before the procedure is not advisable.
- If sedation is required, you need to fast for 6 hours
- If you are on medication, please let your doctor know, as some medicines may need to be stopped temporarily for the treatment.

What happens during the treatment?

- The patient lies on a water-filled cushion, X-rays or ultrasound imaging are used to locate the stone. High-energy sound waves pass through the body and shatter the stone into small pieces. These small pieces move through the urinary tract and out of the body in the urine.
- The process takes about an hour.
- Sedatives or painkillers may be used.

What happens after the treatment?

- Blood may be seen in the urine for a few days after ESWL.
- The stone fragments may slowly passed out over a few days or weeks. Some people may have pain as the small stone fragments pass through the urinary system.
- You are encouraged to drink plenty of fluids to flush out the stone fragments.
- Some patients may develop fever. You should get in touch with your doctor if this happens.

Benefits & Risks of ESWL

BENEFITS

- ESWL is a safe procedure and may be used on children and on individual with only one working kidney. ESWL may still be used if you have a pacemaker but a cardiologist has to check that it is safe for you.
- ESWL can also be used to break up a stone that is in the ureter.

RISKS

About 10% or less of people who are treated with ESWL have complications. These include:

- Pain caused by the passage of stone fragments.
- Blocked urine flow as a result of stone fragments becoming stuck in the urinary tract. The fragments may then need to be removed with a ureteroscope.
- Urinary tract infection.
- Bleeding around the outside of the kidney.

Alternative

Whether ESWL is suitable for you or not may depend on other factors too e.g., stones which are too big, visibility of the stone on x-rays or ultrasound.

Your doctor will advise you on other alternative procedures if ESWL is not suitable.



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