

**The Oxford Stone Group
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Extracorporeal shockwave disintegration of stones (ESWL)

What does the procedure involve?

This involves the administration of shockwaves through the skin to fragment urinary tract stones into small enough fragments to pass naturally. The procedure involves either x-ray or ultrasound scanning to localise the stone(s).

What are the alternatives to this procedure?

Telescopic or endoscopic surgery (also called ureteroscopy), percutaneous surgery, or observation to allow spontaneous passage of the stone.

What should I expect before the procedure?

You will usually be admitted on the same day as your treatment. On arrival, an X-ray may be taken to confirm the presence of your stone(s). You may have a light meal on the morning of your treatment but you should drink only clear fluid in the 2-4 hours before the treatment. We will give you an injection of a strong pain-killer and some oral pain killers once you arrive in the clinic. Please be sure to inform your specialist in advance of your procedure if you have any of the following:

- an artificial heart valve
- a coronary artery stent
- a heart pacemaker or defibrillator
- an aortic aneurysm
- an artificial blood vessel graft
- a neurosurgical shunt
- any other implanted foreign body
- a prescription for Warfarin, Aspirin or Clopidogrel (Plavix®)
- a previous or current MRSA infection

What happens during the procedure?

No anaesthetic is necessary and you will be awake throughout the procedure. Treatment is normally carried out after the administration of painkillers. The treatment will be monitored by the lithotripsy radiographer. The shock waves can cause deep discomfort in the kidney and a sensation of being flicked with an elastic band on the skin of your back. Treatment normally lasts between 30 and 45 minutes, depending on the size of your stone(s).

What happens immediately after the procedure?

Immediately after the treatment, you may feel quite drowsy. You will normally be taken back to a cubicle to recover with a cup of tea or coffee. The Specialist Nurse will also perform routine post-operative checks. As soon as you have recovered from the treatment, you will be able to go home but you must bring someone with you to escort you home; you should not attempt to drive yourself because of the effects of the sedation. Antibiotics and painkillers will be given to you before your discharge. The average hospital stay is 2 to 3 hours.

What should I expect when I get home?

When you get home, you should drink twice as much fluid as you would normally to flush your system through and minimise any bleeding or infection. Painkillers should be taken as necessary and you must complete the course of antibiotics. Some blood in the urine is normal for 48-72 hours.

What else should I look out for?

If you develop a fever, severe pain on passing urine, inability to pass urine or worsening bleeding, you should contact your doctor immediately. Small blood clots or stone fragments may also pass down the ureter from the kidney, resulting in renal colic. If this pain is not controlled with painkillers you should contact your doctor immediately.

Are there any other important points?

You will be informed before your discharge of any follow-up arrangements. This will usually involve either further lithotripsy, operative surgery or a simple follow-up outpatient appointment when a further X-ray will be taken. If you have a stent in place, you may be given an appointment for removal of the stent under local anaesthetic. You can prevent further stone recurrence by implementing changes to your diet and fluid intake. If you have not already received a written leaflet about this, tell your specialist.

Are there any side-effects?

Most procedures have a potential for side-effects. You should be reassured that, although all these complications are well-recognised, the majority of patients do not suffer any problems after ESWL.

Common (greater than 1 in 10)

- Bleeding on passing urine for a short period after the procedure
- Pain in the kidney as small fragments of stone pass after treatment (20%)
- Urinary tract infection due to bacteria released from the stone during fragmentation, requiring antibiotic treatment (10%)
- Bruising or blistering of the skin in the loin or on the front of the abdomen
- Need for repeated ESWL treatments (15-20%)
- Failure to fragment very hard stone(s) requiring an alternative treatment
- Recurrence of stones

Occasional (between 1 in 10 and 1 in 50)

- Severe infection requiring intravenous antibiotics (less than 1%) and sometimes drainage of the kidney by a small drain placed through the back into the kidney
- Stone fragments occasionally get stuck in the tube between the kidney and the bladder requiring hospital attendance and, occasionally, surgery to remove the stone fragments

Rare (less than 1 in 50)

- Kidney damage (bruising) or infection needing further treatment.