



**University
Hospitals Sussex**
NHS Foundation Trust



**Sussex
Lithotripter
Centre**

Lithotripsy

Patient information

What is ESWL / lithotripsy?

Extracorporeal shockwave lithotripsy (ESWL) is the application of special sound waves (shockwaves) which are directed through the skin and on to urinary tract stones. These shockwaves are produced by a machine called a lithotripter and are guided on to stones using either ultrasound or x-rays. The stones are broken up into tiny fragments which can then be passed out in the urine. The advantage of lithotripsy is that most (~80%) stones can be treated this way avoiding surgery and general anaesthesia.



A patient lying on a lithotripter machine

What are the risks / side effects?

Lithotripsy is generally a very safe procedure with a few well recognised side effects. The majority of patients do not suffer any problems afterwards.

Common (greater than 1 in 10)

- Passing blood in the urine temporarily afterwards is normal
- Pain as small fragments pass out (20%)

- Urinary tract infection requiring antibiotics (10%)
- Failure to break the stone needing an alternative treatment
- Recurrence of stones
- Bruising on the skin where the shockwaves pass through.

Occasional (between 1 in 10 and 1 in 50)

- Stone fragments getting stuck in the ureter (tube connecting the kidney to the bladder) causing pain and hospital admission, and occasionally requiring surgery to unblock the kidney with an internal tube called a stent.

Rare (less than 1 in 50)

- An infection requiring hospital admission and intravenous antibiotics (<1%). Occasionally the kidney has to be drained by a small tube passed through the back and into the kidney.
- Bleeding or bruising in and around the kidney called a haematoma (<1%).

What are the alternatives?

Some stones may be observed and pass spontaneously. This is usually aided by taking medication to relax the tubes. Alternatively surgery maybe considered requiring a general anaesthetic:

- **Ureterscopy.** This is where a small telescope is passed up through the natural tubes to the stone, which is destroyed and removed with a laser.
- **PCNL.** This is a keyhole operation where a telescope is passed through a small cut on the back and into the kidney. This is used for very large stones.
- **Open surgery.** This has all but disappeared with advances in minimally invasive surgery.

Which patients should not have lithotripsy?

There are certain patients for whom lithotripsy is contra-indicated:

- Patients who are pregnant
- Patients on anticoagulants (blood thinners) such as: warfarin, clopidogrel, high dose Aspirin, Apixaban or Rivoroxaban.
- Patients with pacemakers or internal defibrillators
- Patients who have recently had a heart attack
- Patients with untreated / uncontrolled high blood pressure
- Patients with abdominal aneurysms or an artificial blood vessel graft.

Before treatment

Foods to try and avoid 2 days before treatment begins as the build-up of bowel gas can obstruct the vision of the x-rays in seeking the stone. **Please read the following:**

Food to avoid

Weetabix, Shredded Wheat,
All Bran, Bran Cereals,
Wholemeal flour, wholemeal bread.
Cakes and pastries made with wholemeal.
Lentils, pulses, beans, baked beans.
All types of vegetables.
Dried fruit, spicy food, pickles and
Fizzy drinks.

Foods Allowed

Cornflakes, rice krispies, rice
white bread, cakes, biscuits and pastry
Pastries made with white flour. Potatoes
Root vegetables, tinned fruit, butter
Margarine, clear soups, gravy, Oxo
Marmite, Bovril, tea, coffee, coco
Horlicks, sugar, jelly and honey.

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Brighton & Sussex University Hospitals NHS Trust

Consent Form 1

Patient details (or pre-printed label)

Surname/family

name.....Male.....Female.....

First Names..... Special Requirements.....

Date of Birth..... (e.g other language, other communication method)

NHS number (or other identifier)..... Responsible health professional.....

Job title.....

Name of proposed procedure or course of treatment

Lithotripsy (Treatment of Renal Stones)

Statement of health professional (to be filled in by health professional with appropriate knowledge of proposed procedure, as specified in consent policy – see also guidance on cover of consent pad, in Junior Doctor’s Handbook and on intranet)

I have explained the procedure to the patient. In particular, I have explained:

The intended benefits: **To fragment the renal calculi.**

Serious or frequently occurring risks: **1. Discomfort 2. Pain 3. Blood in the urine 4. Urine Infection (sepsis) 5. Renal Colic 6. Kidney damage if stone is within the kidney (haematoma) 7. Bruising 8. Surgery (Ureteroscopy)**

Any extra procedures which may become necessary during the procedure

Blood transfusion.....

Other procedure (please specify).....

I have also discussed what the procedure is likely to involve, the benefits and risks of any available alternative treatments (including no treatment) and any particular concerns of this patient.

The following tape/leaflet has been provided: **Information sent/given to patient prior to appointment and/or on arrival in the department.**

This procedure will involve;

Signed.....Date.....

Name (PRINT).....Job Title.....

Contact details (if patient wishes to discuss options later).....

Statement of interpreter (where appropriate)

I have interpreted the information above to the patient to the best of my ability and in a way in which I believe s/he can understand.

Signed.....Name (PRINT).....Date.....

Where do I go?

You will be asked to attend the Lithotripsy centre at Princess Royal Hospital at Hayward's Heath. When you arrive at the hospital follow the signs to the first floor and Ansty ward. Once checked in at the reception desk at urology Out patient department. Please take a seat in the comfortable waiting area specifically for lithotripsy patients (The first door on the right as you enter the ward). You will be given appointment times however some previous patients treatment may take longer than expected so please do allow time for this.

Take painkillers an hour before treatment begins. (Such as paracetamol, Ibuprofen, diclofenic also known as Volatrol suppositories). Please bring spare pair of underwear.

You will be met by the lithotripsy nurse on Ansty Ward who will go through some questions including medication and allergies. You will be asked to provide a urine sample and blood pressure will be noted plus medical history. Once this is complete you will need an x-ray to see the position of the stone each time you come.

It is important to eat and drink as normal – do not come starved. Please see advice sheet above on page 5.

What will happen before the treatment?

Please bring someone with you for your first treatment as we do not advise driving afterwards. After your first treatment most patients find that an escort is unnecessary. Once you scan is performed please return to Ansty ward.

What happens during treatment?

You will be walked around to the lithotripsy suite which is based just inside the theatre complex on the first floor. You will be provided with a gown and asked to change behind a curtain. The treatment takes place on a special couch filled with a shallow puddle of warm water, so your back will get wet, and you will be given a towel to dry off at the end. Each session lasts around 30-45 minutes. Stones will be identified using an x-ray or ultrasound scan and normally 3000 'shocks' are delivered into a stone. The machine starts at a very low power and feels like someone gently flicking your back. The power is gradually built up, and it may be slightly uncomfortable. The machine makes a loud clicking noise. There will always be someone there with you, and if the treatment becomes too uncomfortable the power can be turned down or switched off.

What should I expect after treatment?

Patients usually feel back to normal after the treatment is finished, but generally we advise you to take the day off and rest at home. Many people will return to normal activities straight away once they get used to the treatment.

It is important to drink plenty of water afterwards (aim for around 2 litres a day) in order to flush the small fragments of stone out. This can be painful, and it is important that you have a supply of paracetamol and ibuprofen at home in case of pain. If pain becomes unbearable please attend A+E for more advice.

It is normal to pass blood in the urine for a few days afterwards, which should get lighter as days go by. Occasionally you will be given antibiotics to take home for a few days. Lithotripsy may take up to three treatment sessions which are usually spaced about 3-4 weeks apart. Before leaving the department you be given another appointment, as you may need 2-3 treatments for each stone if you have more than one.

If you have a stent, you may be given an appointment to have this removed under local anaesthetic.

**Any queries please do not hesitate to contact the
Lithotripsy unit 01444 441881 Ext. 68569**

Monday to Thursday 08.00 – 15.30

answer machine service available

**This leaflet is intended for patients receiving care
in Brighton & Hove or Haywards Heath**

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The information in this leaflet is for guidance purposes only and is in no way
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