

Name of Operation: **Extra-corporeal Shock-Wave Lithotripsy
(ESWL, ultrasound treatment to shatter urinary stones)**

Main issues:

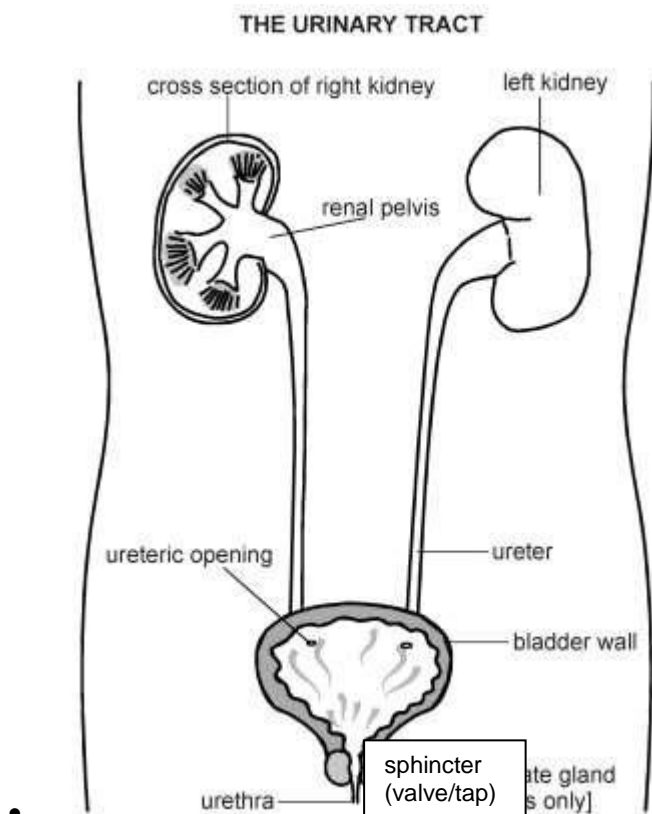
- Non-invasive (ie, no cuts or wounds).
- Dull ache in the area of the stone for several days afterwards (paracetamol helps).
- Blood and/or grit in the urine, and maybe sore to pee, for a few days afterwards.
- It is unusual for 1 session to clear a stone completely: most people need 3 sessions.

Intended benefits:

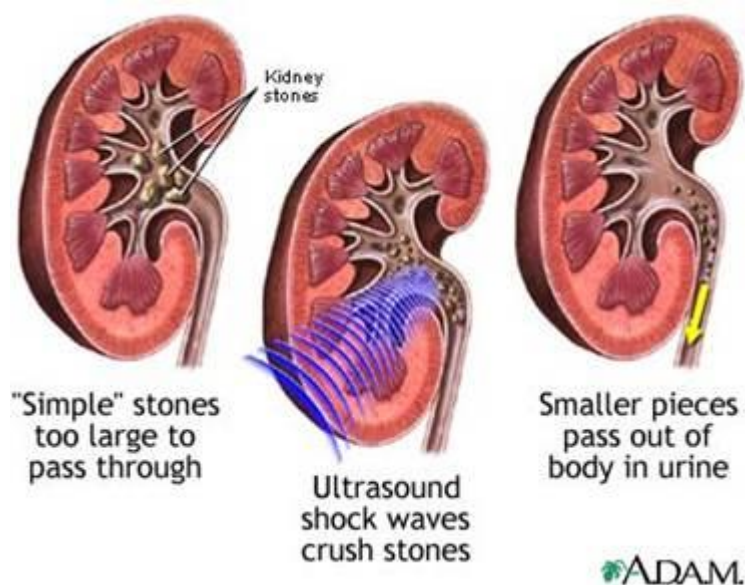
- To break up stone(s) in the kidneys, ureters (urine-pipe from kidney to bladder), or bladder into smaller pieces that can (hopefully) be passed out on their own.
- To reduce the risk of damage in the area of the stone, and of urine infection, pain, or bleeding into the urine.
- To avoid the increased risks of minimally-invasive or open surgery to remove the stone(s).

Common or serious risks:

- Being unable to carry on with (or to finish) the procedure, due to unexpected technical problems with the equipment on the day. The treatment may then need repeated another day.
- Bleeding: rarely serious, but a little blood may appear in the urine over the next day or two. It usually settles if your child drinks plenty. If blood appears in the urine a week or so later, a urine sample should be checked for infection via your family-doctor.
- Infection: usually prevented by drinking plenty for a few days afterwards, or by the antibiotics sometimes given in hospital, or by any preventative antibiotics your child may already be on (if so, please give a double-dose on the evening of the operation). If you are worried, a urine sample should be checked for infection via your family-doctor or, if your child is very unwell, via your local hospital (sometimes such an infection can be quite serious).
- Damage to the kidney, ureter, bladder, urethra (pee-pipe), lung, or seminal vesicles (part of a boy's sperm-tubes): rarely serious.
- Stone fragments can become stuck in the waterworks as they travel outwards over the next few days, and may need urgent surgery (sometimes open) to clear them.
- Some stones are so tough, or in so awkward a position, that the treatment doesn't shatter them at all. Surgery will then be needed on another day.
- Anaesthetic problems (rarely serious, but around 1 in 250,000 general anaesthetics in children can be fatal).



1. A diagram of normal waterworks (based on www.fermelumic.com/urinary.html#)



2. A diagram of how ESWL works (from <https://medlineplus.gov/ency/imagepages/19246.htm>)