

# Extracorporeal Shock Wave Lithotripsy

SUNA Postoperative Care Task Force

## Overview

Extracorporeal shock wave lithotripsy (ESWL) is a procedure that uses shock waves to break a kidney stone into smaller pieces. The smaller pieces (as small as grains of sand) should be easier to pass through the body along with urine. The treatment is done outpatient in a hospital, and you will usually go home the same day. Not all kidney stones can be treated with ESWL. The most common method of ESWL is the patient lies on top of a soft cushion or membrane. The waves pass through the cushion to crush the stones. The complete treatment takes about 45 to 60 minutes.

## Indications

The size, number, location, and type of the stones need to be considered to discuss treatment options. In addition, the stones must be clearly viewed by the X-ray monitor so the shock waves can be targeted accurately.

Shock wave lithotripsy usually works best to treat smaller stones inside the kidney or upper part of the ureter (urine tube). Your provider will consider a stone's size, your medical problems (including medications), and your body structure before deciding what is best for you.

Providers often use shock wave lithotripsy to treat kidney stones that:

- Are too large to pass on their own (larger than 5 millimeters in diameter – about the size of a pencil eraser).
- Block urine flow.
- Are very painful.

## What to Expect with ESWL

### Risks

Potential risks of shock wave lithotripsy include, but are not limited to:

- Blockage in the ureter.
- Blood in the urine or bleeding around the kidney.
- Infection.
- Mild discomfort or bruising on the back (near the treated area).
- Painful urination.
- Failure to break the stone or failure to break the stone into small enough pieces to pass.

### Expectations

- **You may feel sore for a day or two:** Right after shock wave lithotripsy, you may feel sore or stiff near the treatment area. Some people notice slight bruising along their side.

- **You may see blood in your urine:** It's common to see small amounts of blood in your urine. (Your pee may look pink.) It may hurt to urinate. These symptoms usually go away after a few days.
- **Drink plenty of water:** Staying hydrated helps stone fragments move through your body.
- **Passing the stone pieces:** It can take several weeks to pass the pieces of stone through your urine.
- **You should collect stone pieces that you pass:** Testing the stone may tell your provider what caused your kidney stones (and how to prevent new stones). Your provider may give you a urine strainer. It looks like a funnel with mesh at the bottom. It collects stone fragments when you pee.
- **You should drop off the stone sample for testing:** You can store the stone fragments you collect in a specimen cup your provider gives you or a plastic bag. Follow your provider's instructions. You may need to take it to your next follow-up visit or drop the sample off at a lab.

## Complications/When to Call the Provider

Call your doctor or go to the emergency room if you have sudden, severe belly or back pain that does not go away, or persistent nausea or vomiting. These symptoms are signs that a kidney stone may be blocking urine flow. Rarely, a blockage can lead to a serious infection (that causes fevers or chills) that may pose a danger to your health.

### Acknowledgment

We would like to especially thank the following SUNA members for their valuable contributions to these special focus issues. They either acted as a peer reviewer, author of the educational handouts, or both.

Michele Boyd, MSN, RN, NPD-BC  
Lynn Huck, ANP  
Christopher T. Tucci, MS, RN, BC, CURN, NE-BC, FAUNA  
Gwendolyn Hooper, PhD, APRN, CUNP  
Anthony R. Lutz, MSN, NP-C, CUNP  
Margaret (Amy) Hull, DNP WHNP-BC  
Annemarie Dowling-Castronovo, PhD, RN, GNP-BC, ACHPN  
Lais Heideman, RN, CURN  
Susanne A. Quallich, PhD, ANP-BC, NP-C, CUNP, FAUNA, FAANP  
Michelle J. Lajiness, FNP-BC, FAUNA  
Marc M. Crisenbery, MSN, APRN, FNP-BC

*We hope you and all your family members may benefit from these handouts.*

Call your provider anytime you have concerns, especially if you have:

- Blood clots in your urine.
- Fever of 101 degrees F or higher.
- Pain that gets worse, even after taking pain medication.
- Problems peeing (you feel the urge to pee but cannot).
- Nausea or vomiting.
- Dizziness or light-headedness.

### Resources

- Assimos, D., Krambeck, A., Miller, N.L., Monga, M., Murad, M.H., Nelson, C.P., Pace, K.T., Pais, V.M., Pearle, M.S., Preminger, G.M., Razvi, H., Shah, O., & Matlaga, B.R. (2016). Surgical management of stones: American Urological Association/Endourological Society guideline, part I. *Journal of Urology*, 196(4), 1153-1160. <https://doi.org/10.1016/j.juro.2016.05.090>
- National Kidney Foundation. (2020). *Lithotripsy*. <https://www.kidney.org/atoz/content/lithotripsy>
- Urology Care Foundation. (n.d.). *What are kidney stones?* <https://www.urologyhealth.org/urology-a-z/k/kidney-stones>
- U.S. Department of Health and Human Services. (n.d.). *Kidney stones*. <https://www.niddk.nih.gov/health-information/urologic-diseases/kidney-stones>

---

This material is for educational purposes only and should in no way be taken to be the practice or provision of medical, nursing or professional healthcare advice or services. The information should not be used in place of a visit, call, consultation or advice of your physician, nurse or other health care provider. The information obtained herein is not exhaustive and does not cover all aspects of the specific disease, ailment, physical condition or their treatments. Should you have any health care related questions, please call or see your physician, nurse or other health care provider promptly.

The Society of Urologic Nurses and Associates, Inc. is a professional organization committed to excellence in patient care standards and a continuum of quality care, clinical practice, and research through education of its members, patients, family, and community.