Extracorporeal shock wave lithotripsy (ESWL) is a non-invasive treatment option for the management of kidney or ureteral stones. Other options include expectant management (particularly for small stones), percutaneous antegrade nephrostoneolithotomy, retrograde ureteroscopy with or without intracorporeal lithotripsy, laparoscopic ureterolithotomy, and open ureterolithotomy. The choice of treatment is primarily based on size, location, and composition of the stone. ESWL consists of high-intensity shock waves that are produced electrically, and focused radiographically or ultrasonically on the treatment area. More than one treatment may be required. General, spinal, or epidural anesthesia is usually administered with this procedure.

Following ESWL, most kidney stone fragments are eventually eliminated in the urine. Adjunctive procedures (e.g., pre-ESWL stent placement or stone manipulation, and post-ESWL endoscopy or surgery) are estimated to be required in 7%–15% of patients to ensure the complete removal of the stone fragments.

**Policy**

The use of extracorporeal shock wave lithotripsy is medically necessary for the treatment of kidney stones.

Indications for extracorporeal shock wave lithotripsy for kidney stones are listed under Policy Guidelines.
- uncontrolled infections are managed;
- renal tract obstructions (not related to the stone) are corrected;
- stone can be visualized after imaging study;
- patient anatomy allows for proper focusing of the shock wave;
- treated kidney is functional;
- absence of any signs of renal artery calcification or aneurysm.

Stones up to 2 cm are generally treated in a single procedure; larger stones may require multiple procedures. Larger stones will often require adjunctive procedures. ESWL should be used with extreme caution in pregnant women and children.

Rationale

A search of literature was completed through the MEDLINE database for the period of January 1992 through April 1995. The search strategy focused on references containing the following Medical Subject Headings:

- Kidney Calculi
- Lithotripsy

Research was limited to English-language journals on humans.

See also:

TEC Evaluation and Coverage 1988: p. 502

TEC Strategies: Extracorporeal Shock Wave Lithotripsy: Clinical Assessment, Utilization and Cost Projection; May 1985

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</tr>
</tbody>
</table>
## Index

<table>
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<th>Outpatient</th>
</tr>
</thead>
</table>

Extracorporeal shock wave lithotripsy for kidney stones  
Kidney stones, extracorporeal shock wave lithotripsy for  
Lithotripsy, extracorporeal shock wave, for kidney stones