

# THE UROLOGY GROUP

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## STAGHORN KIDNEY STONES

### Staghorn Stones

Staghorn kidney stones are large stones that take up more than one branch of the collecting system of the kidney. These can be seen in people with a long stone history, metabolic defects or repeated urinary tract infections with certain bacteria. If the stone is a result of infection, the infections tend to recur until the stone is removed.

### Recommendations

A newly diagnosed patient should be actively treated. Renal deterioration has been shown to occur in 28% of patients with staghorn calculi who were treated without surgery or "conservatively." Over time, an untreated staghorn calculus is likely to destroy the kidney and/or cause life-threatening sepsis. Complete removal of the stone is an important goal in order to eradicate any causative organisms, relieve obstruction, prevent further stone growth and any associated infection, and preserve kidney function.

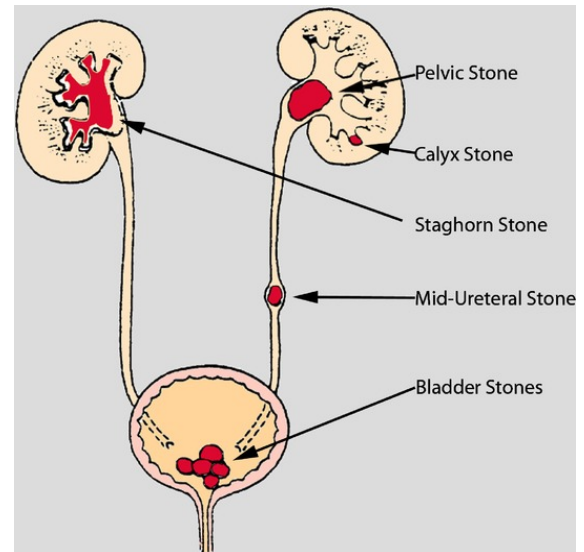
### Types of treatment

Types of treatment include: Percutaneous nephrolithotomy (PNL), combinations of PNL and shock-wave lithotripsy (SWL), SWL alone and open surgery. If there is question whether or not the kidney functions, this may be investigated with a **Lasix renal scan**. If the kidney does not work and chronic infection or pain, removal of the kidney may be recommended.

### Stone-free Rates

The overall estimated stone-free rate following treatment is highest for PNL (78%) and lowest for SWL (54%).

Comparing PNL with combination therapy, stone-free rates are higher with PNL (78% versus 66%, respectively) and that PNL requires fewer total procedures (1.9 versus 3.3, respectively). On average, PNL requires 1.9 total procedures while combination therapy and SWL require 3.3 and 3.6 total procedures, respectively



## **Complications**

Estimated rates for overall significant complications are similar for the four therapeutic modalities and range from 13% to 19%.

*For PNL:* loss of kidney; colon injury; fluid in the lung; perforation; air in the lung lining; urine leak; blood infection; stone in the kidney tube; injury to a blood vessel.

*For SWL:* loss of kidney; kidney pain requiring admission; kidney bleed; blockage of urinary tract; kidney infection; blood infection; need for emergent stent placement; blockage of the kidney tube.

*For combination therapy:* any listed for the above plus blood clot in the leg; connection between urinary tract and skin; stones blocking the kidney tube; kidney damage.

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Reference: AUA Guideline on the Management of Staghorn Calculi. Copyright © 2005 American Urological Association Education and Research, Inc.