

## **Kidney Stones**

At Methodist Urology, we specialize in treating complex kidney stones using advanced, minimally invasive procedures. Urologists around the Midwest refer their patients to us because they trust our expertise. We also place great emphasis on preventing return of stones after removal.

In 2006, Methodist Urology partnered with Clarian Health Partners to establish the International Kidney Stone Institute, an organization committed to researching the causes of kidney stones and improving stone prevention and treatment. Visit the website at [www.iksi.org](http://www.iksi.org).

### **What causes kidney stones?**

Kidney stones form when the urine has high concentration of certain elements that form crystals in the urine. When those crystals exist in high enough quantity and concentration, they can stick together and form stones.

Stones are caused in some cases by heredity, but diet can impact greatly the tendency to form stones. For a summary of dietary recommendations for stone formers, go to [http://www.iksi.org/patient\\_prevent\\_dietary.asp](http://www.iksi.org/patient_prevent_dietary.asp).

### **Symptoms of kidney stones**

Most of us know someone who has suffered the excruciating pain of a kidney stone. Stones that aren't moving usually do not cause pain. But when a stone moves into the ureter and blocks the flow of urine, back pain, nausea and vomiting can occur. The pain is often described as cramping. Blood may appear in the urine, though actual blood loss from stones is unusual.

### **Treatment of stones**

Though everyone is different, generally stones up to 5 millimeters in size can be passed on their own. Larger stones must be retrieved surgically.

The least invasive procedure is shock wave lithotripsy. Dr. James Lingeman of Methodist Urology saw the potential of this technology in the early 1980s, and encouraged Methodist Hospital to purchase the device from German manufacturers. Dr. Lingeman performed the first shock wave lithotripsy treatment in the United States.

Endoscopy, or the use of long instruments to "look inside" without an incision, allow surgeons to remove stones in a minimally invasive fashion. Flexible endoscopic instruments allow retrieval of stones from the ureter and kidney during ureteroscopy, where a tiny telescope is inserted through the natural urinary outlet up into the ureter or kidney. At that point, a laser fiber can break the stone into small pieces, which are removed with a stone basket.

One of our specialties is removal of very large stones (greater than 2 centimeters) using a procedure called percutaneous nephrolithotripsy, also called PERC or PNL. In PNL, a small incision is made below or between the ribs of the back, allowing placement of instruments to view, break up and remove large stones.

### **Prevention of stones**

At Methodist Urology, we believe an important part of caring for patients with stones is helping them prevent stone recurrence. Using specialized urine tests and chemical analysis of kidney stones, our providers help patients identify ways to keep stones from coming back. Once the cause of stone formation has been identified, medication and diet changes can be prescribed.

We have a long history of not only treating stones, but helping our patients avoid the pain and expense of multiple treatments for recurrent stones. We use a special lab, LithoLink, which offers in-depth urine testing to identify abnormalities and monitor improvement. The LithoLink Corporation is located in Chicago; you may visit their website at [www.litholink.com](http://www.litholink.com).

Links:

[www.iksi.org](http://www.iksi.org)

[www.litholink.com](http://www.litholink.com)