

# Pediatric Urology Associates, Ltd.

## & Pediatric Enuresis Center of Arizona

Robert B. Bailey, MD  
Luis R. Argueso, MD  
Michael L. Ritchey, MD  
Michael T. Nguyen, MD  
Zachary V. Zuniga, MD

Marilyn L. Tigges, PA-C  
Kelly M. Parker, PA-C  
Karen R. Dunivant, CPNP  
Diana L. Braskett, CPNP

### **KIDNEY STONES**

A kidney stone is a solid piece of material that forms in the kidney from the precipitation (crystallization of previously dissolved particles) of certain substances in the urine. Stones usually form in the kidney and will either remain there or break loose and subsequently travel down the urinary tract.

Kidney stones vary in size and shape. They can range from the size of sand particles to golf ball size. Some stones, known as staghorn stones, can fill the entire kidney. Kidney stones may be smooth or jagged.

Not all kidney stones cause symptoms. A small stone may pass all the way out of the body without causing too much pain. In some cases, the stone may get stuck in the ureter, bladder or the urethra, causing pain and possibly obstruction, blocking the flow of urine out of the kidney.

Kidney stones may be caused by a number of factors, including dehydration, infection, diet, metabolic diseases, family history, medications, limited activity level, and conditions that result in an increased concentration of calcium or other substances, including oxalate and uric acid, in the urine. The most common type of stone contains calcium.

#### Symptoms of kidney stones:

- \* extreme pain in the back or flank area (pain is usually excruciating and comes in spasms and may radiate to the inguinal area)
- \* blood in the urine
- \* fever and chills (if an infection is present)
- \* vomiting
- \* urinary frequency or urgency
- \* pain/burning when urinating

Treatment for kidney stones varies, depending on the type and size of stone and location. Stones that can't be treated with more conservative measures may need surgery. This can include shock wave therapy (ultrasound waves break the stone), endoscopy (use of a laser to break the stone), or placing a tube into the kidney. Rarely an open incision is used to remove the stone. Treatment for your child's stone will be determined by your doctor at the time of your office visit.

It's important to determine the underlying cause so that more stones aren't formed in the future. This is done by performing tests on the blood and urine to look for factors predisposing to stone formation.

In most cases, prevention of kidney stones is simply done by increasing water intake and occasionally by making a few dietary changes. In some cases, medication may be needed.