

Let's Talk About...

Kidney stones with colic

A kidney stone is a hard clump of minerals and salt that forms in the kidneys. It can cause severe pain, called **renal colic**, if it moves around in the kidney or blocks a ureter [you-REE-ter], one of two tubes to the bladder.

How do kidney stones form?

Kidney stones form when your child's urine has too much calcium, uric acid, or other minerals and not enough fluid to dilute these substances. Your child will usually have a **calcium stone** or **uric acid stone**.

When there is too much struvite (mineral formed by bacteria in the urine), your child can develop a **struvite stone**. This type of stone usually forms because of a kidney or urinary tract infection (UTI).

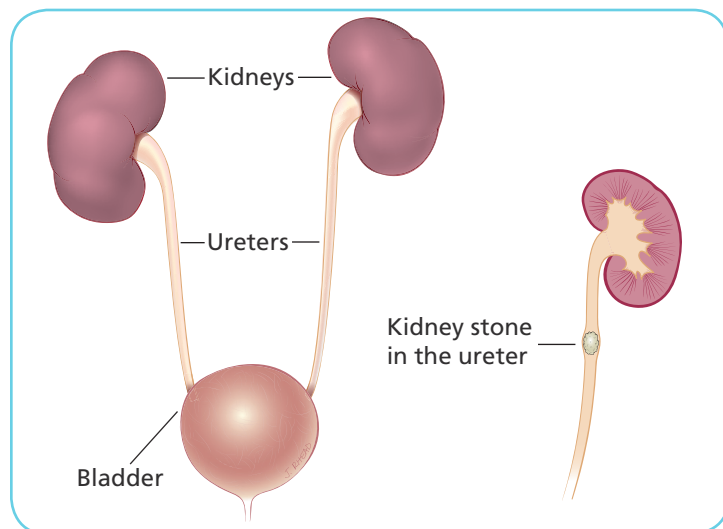
Your child can also develop a **cystine stone** if they have too much cystine (an amino acid) in their urine. This happens if your child has an inherited disease called cystinuria [siss-tin-YOU-ree-uh]. However, cystine stones are rare.

What causes kidney stones?

Kidney stones in children are usually caused by another health condition, but sometimes no one knows what causes them.

Your child may also have a higher risk of kidney stones if they:

- Have a family member who gets kidney stones
- Don't drink enough fluids and become dehydrated
- Are taking certain medicines
- Have a urinary tract defect
- Drink too many sugary drinks and eat foods high in sodium
- Are obese



What are the signs my child has kidney stones?

Signs your child is trying to pass a kidney stone through a ureter may include:

- Severe pain in the lower back, side, or groin
- Nausea (feeling like vomiting) and vomiting
- Hematuria [hee-muh-TOO-ree-uh], or blood in the urine
- Urinating (peeing) more than normal or feeling the need to urinate often
- Pain while urinating

If you think your child has a kidney stone, take them to their doctor as soon as possible.

How are kidney stones diagnosed?

Your child's doctor will ask about your child's symptoms, diet, and medical history, including any other health problems that could cause kidney stones. They will do a physical exam and may test your child's urine and blood and order an x-ray so the doctor can see if there is a stone.

How are kidney stones treated at home?

Eight out of 10 kidney stones smaller than 4 millimeters (mm) will pass through the ureter on their own. To help your child pass the kidney stone at home:

- Have your child drink lots of water
- Give them ibuprofen (Advil) or acetaminophen (Tylenol) to manage the pain (or prescription medicine if their doctor orders it)

Your child's doctor may ask you to collect the kidney stones your child passes for a few days. They can look at the stones and decide whether your child needs more treatment.

How are kidney stones treated in the hospital?

If your child's kidney stone is 4 mm or larger, they may need a procedure with anesthesia to help it pass. Treatments may include:

- **ESWL:** Extracorporeal [EX-truh-cor-POR-ee-ul] shock wave lithotripsy [LYTH-oh-trip-see], or ESWL, is a procedure that uses focused shock waves to break up kidney stones into pieces. It works best for stones smaller than 10 mm in the kidney or high in the ureter. Your child can usually go home the same day and pass the stone pieces on their own.

- **Uteroscopy** [you-tur-AH-sko-pee]: A healthcare provider enters your child's bladder and ureter with a tiny camera to find and remove the stone. They may use a stone laser to break up a larger stone before removing it with a small basket. Your child will also need a stent (small tube) inside the ureter to hold it open, prevent severe pain after surgery, and widen it so small stone pieces can pass more easily. They will remove the stent several weeks later. Risks of uteroscopy include bleeding, infection, or ureter injury (this is rare).
- **PCNL:** Percutaneous [per-cyoo-TAY-nee-us] nephrolithotomy [NEFF-ro-lith-AH-toh-mee] is a surgery to remove the stone directly from the kidney. This is best for large stones (10 to 20 mm or more). The surgeon will also insert a stent in the kidney and remove it later. Your child usually has to stay in the hospital 1 or 2 days to drain urine from the kidney and let the swelling go down. Risks of PCNL include kidney tearing, bleeding from the hole in the kidney, and intestine, liver, or spleen injury. These are rare but may require another procedure.

How can I prevent kidney stones?

Once your child has had a kidney stone, the following tips can help prevent another stone:

- Drinking plenty of fluids to prevent dehydration
- Avoiding soda and sports drinks
- Limiting salty foods



Questions for my child's doctor

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