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- Kidney Stones—What you should know about this tiny structure that can cause so much abdominal pain

That Damn Kidney Stone.

A kidney stone is a hard crystalline mass that is composed of calcium, oxalate or phosphate. These crystals separate from the urine

within the urinary tract and lodge itself within the calyces of the kidneys,

or they may travel to the ureters or the urinary bladder. Normally, urine contains chemicals that prevent or inhibit the crystals from forming. These inhibitors do not seem to work for everyone, however, so some people form stones. If the crystals remain tiny enough, they will travel through the urinary tract and pass out of the body in the urine without being noticed.

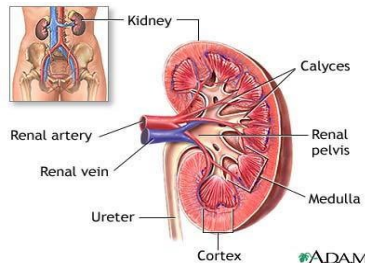


Cause

Kidney stones form when there is a decrease in urine volume and/or an excess of stone-forming substances in the urine. Dehydration from reduced fluid intake or strenuous exercise without adequate fluid replacement increases the risk of kidney stones.

Incidence and Risk Factors

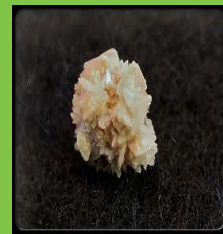
Kidney stones are common. A person who has had kidney stones often gets them again in the future. Kidney stones often occur in premature infants. Some types of stones tend to run in families.



(Continued on page 2)

Some Interesting Facts about Kidney Stones

The largest known kidney



stone weighed 1.36 kilograms. The smallest kidney stones are microscopic crystals; it is

possible to analyze stones weighing less than 0.1 mg.

Louis Napoleon, nephew of Napoleon Bonaparte, lost the Franco-Prussian War of 1870 due wholly or in part from impaired kidney function resulting from kidney stone formation.

Hippocrates (470/460 B.C.-380/360 B.C.) makes reference to kidney stones in the Hippocratic Oath as follows: "I will not cut persons labouring under the stone, but will leave this to be done by men who are practitioners of this work."

Types of Stones

The exact cause depends on the type of stone.

Calcium stones are most common. They occur more often in men than in women, and usually appear between ages 20 - 30. They are likely to come back. Calcium can combine with other substances, such as oxalate (the most common substance), phosphate, or carbonate to form the stone. Oxalate is present in certain foods. Diseases of the small intestine increase the risk of forming calcium oxalate stones.

Cystine stones can form in people who have cystinuria. This disorder runs in families and affects both men and women.

Struvite stones are mostly found in women who have a urinary tract infection. These stones can grow very large and can block the kidney, ureter or bladder.

Uric acid stones are more common in men than in women. They can occur with gout or chemotherapy.

Symptoms

Kidney stones may not produce symptoms until they begin to move down ureters through which urine empties into the bladder. When this happens, the stones can block the flow of urine out of the kidneys. This causes swelling of the kidney or kidneys, causing pain. The pain is usually severe.

When symptoms do occur, the main symptom is severe pain that starts suddenly and may go away suddenly:

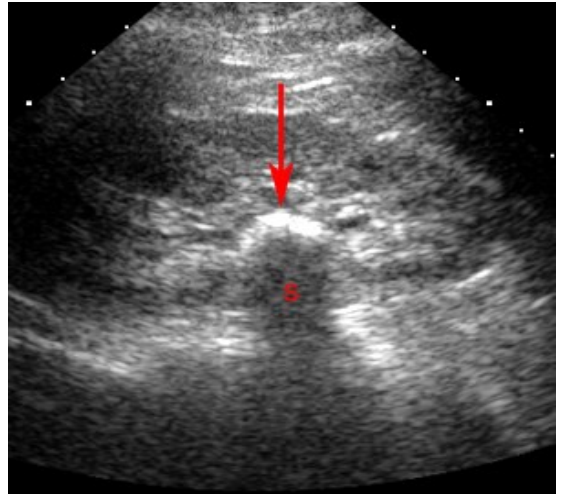
Pain may be felt in the belly area or side of the back

Pain may move to groin area (groin pain) or testicles (testicle pain)

Other symptoms can include:

- Abnormal urine color
- Blood in the urine
- Fever

People who take the protease inhibitor indinavir, a medicine used to treat HIV infection, may also be at



increased risk of developing kidney stones.

Diagnosis

Urine Tests

Uric acid level - a 24 hour urine sample collection is needed

Urinalysis - the physical, chemical, and microscopic examination of urine to see crystals and red blood cells in urine

Imaging Studies

Abdominal X ray

Kidney Ultrasound - ultrasound of the kidneys and the bladder. The transabdominal transducer is used to produce images of the abdominal organs

IntraVenous Urogram - A dye is injected into your blood vessels to highlight the kidneys, ureter and bladder and to assess how the dye is being excreted from the urinary system. Please inform health care provider if you are allergic to shell fish or if you are diabetic or hypertensive and is on the medication to glucophage or metformin. These conditions can make you have an allergic reaction to the dye as such you will be pre medicate to prevent the allergic reaction

Fun & Games

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**"Your kidney stone test came back.
You didn't pass."**

Word Search Game

Joke

A kidney stone walks into a bar.
The bartender says, "What'll you have?"
The kidney stone says, "No thanks, I'm
just passing through."



The
bar-
tender
says,

"AAAAHHHHHHHHH!!!!!!!" [As, in pain.]

References

1. E-medicine Health (2011). Kidney Stones. Retrieved from http://www.emedicinehealth.com/kidney_stones/page2_em.htm#Kidney%20Stones%20Causes
2. Luis C Herring & Co. Laboratory (2011). Interesting Facts About Kidney Stones. Retrieved from <http://www.herringlab.com/a.html>
3. PubmedHealth (2011). Kidney Stones. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001493/>
4. US Department of Health and Human Services (2011). Kidney Stones in Adults. National Kidney & Urologic Diseases Information Clearinghouse (NKUDIC). Retrieved from <http://kidney.niddk.nih.gov/Kudiseases/pubs/stonesadults/#who>

Treatment

Treatment varies depending on the type of stone and how severe the symptoms are. People with severe symptoms might need to be hospitalized.

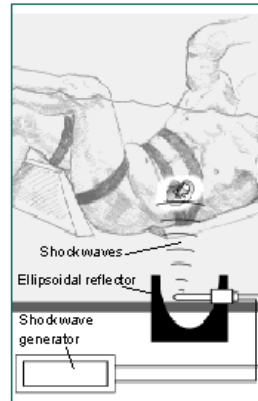
When the stone passes, the urine should be strained and the stone saved and tested to determine the type.

Drink at least 6 - 8 glasses of water per day to produce a large amount of urine. Some people might need to get fluids through a vein

Pain relievers can help control the pain of passing the stones. For severe pain, you may need to take narcotic pain killers or nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen.

Depending on the type of stone, your doctor may prescribe medicine to decrease stone formation or help break down and remove the material that is causing the stone

Extracorporeal shock-wave lithotripsy is used to remove stones slightly smaller than a half an inch that are located near the kidney. This method uses ultrasonic waves or shock waves to break up stones. Then, the stones leave the body in the urine.



Percutaneous nephrolithotomy is used for large stones in or near the kidney, or when the kidneys or surrounding areas are incorrectly formed. The stone is removed with an endoscope that is inserted into the kidney through a small opening.

Ureteroscopy may be used for stones in the lower urinary tract.

Standard open surgery (nephrolithotomy) may be needed if other methods do not work or are not possible.



FOR APPOINTMENTS
Cell: 498-SERV (7378)

This news letter is meant for informative purposes. Before making a decision, consider the pros and cons of all available treatment options in relation to your particular situation. **REMEMBER TO DISCUSS ALL YOUR CONCERNS WITH YOUR FAMILY PHYSICIAN.**