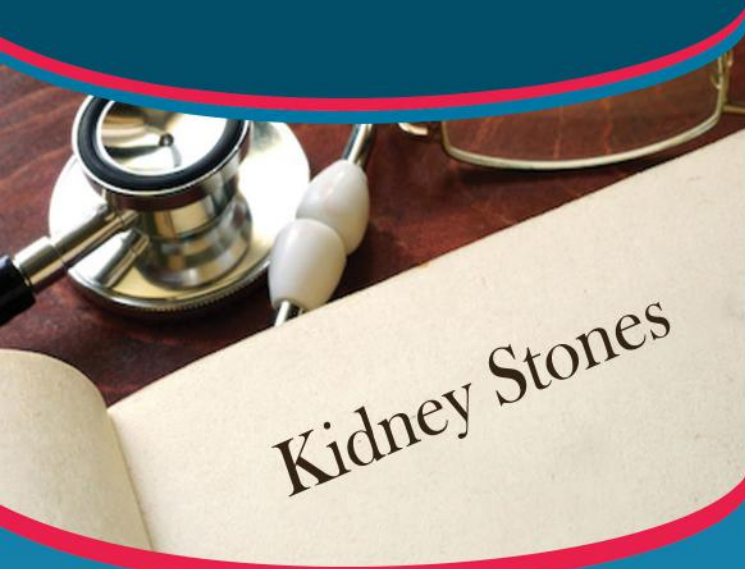




Kidney Stones



A few are as large as a golf ball! As a general rule, the larger the stone, the more noticeable are the symptoms.

► **The symptoms could be one or more of the following:**

severe pain on either side of your lower back, more vague pain or stomach ache that doesn't go away, blood in the urine, nausea or vomiting, fever and chills, urine that smells bad or looks cloudy.

The kidney stone starts to hurt when it causes irritation or blockage. This builds rapidly to extreme pain. In most cases, kidney stones pass without causing damage-but usually not without causing a lot of pain. Pain relievers may be the only treatment needed for small stones. Other treatment may be needed, especially for those stones that cause lasting symptoms or other complications. In severe cases, however, surgery may be required.

► **Diet Recommendations for Kidney Stones**

► **Drink plenty of fluid: 2-3 quarts/day**

This includes any type of fluid such as water, coffee, and lemonade which have been shown to have a beneficial effect except grapefruit juice and soda.

This will help produce less concentrated urine and ensure a good urine volume of at least 2.5L/day



► **Limit foods with high oxalate content**

Spinach, many berries, chocolate, wheat bran, nuts, beets, tea, and rhubarb should be eliminated from your diet intake

► **Eat enough dietary calcium**

Three servings of dairy per day will help lower the risk of calcium stone formation.

Eat with meals.

► **Avoid extra calcium supplements**

Calcium supplements should be individualized by your physician and registered kidney dietitian

► **Eat a moderate amount of protein**

High protein intakes will cause the kidneys to excrete more calcium therefore this may cause more stones to form in the kidney

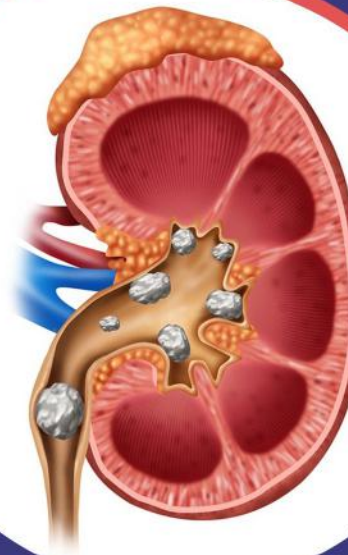
► **Avoid high salt intake**

High sodium intake increases calcium in the urine which increases the chances of developing stones

Kidney Stones



Kidney Stones



The stone-forming chemicals are calcium, oxalate, urate, Cystine, xanthine, and phosphate.

After it is formed, the stone may stay in the kidney or travel down the urinary tract into the ureter. Sometimes, tiny stones move out of the body in the urine without causing too much pain. But stones that don't move may cause a back-up of urine in the kidney, ureter, bladder, or urethra.

A kidney stone is a hard object that is made from chemicals in the urine. There are four types of kidney stones: calcium oxalate, uric acid, struvite, and Cystine. A kidney stone may be treated with shockwave lithotripsy, ureteroscopy, percutaneous nephrolithotomy, or nephrolithotripsy.

Urine has various wastes dissolved in it. When there is too much waste in too little liquid, crystals begin to form. The crystals attract other elements and join together to form a solid that will get larger unless it is passed out of the body with the urine. Usually, these chemicals are eliminated in the urine by the body's master chemist: the kidney. In most people, having enough liquid washes them out or other chemicals in urine stop a stone from forming.



► Causes of kidney stones

Possible causes include drinking too little water, exercise (too much or too little),

obesity, weight loss, surgery, or eating food with too much salt or sugar. Infections and family history might be important in some people. Eating too much fructose correlates with an increased risk of developing a kidney stone. Fructose can be found in table sugar and high fructose corn syrup.

► Kidney stone symptoms

Some kidney stones are as small as a grain of sand. Others are as large as a pebble.