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## Kidney Stones

Clinical

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*Hello,* I hope everyone is off to a wonderful start to their summer. In this issue of Ron's Clinical Corner, we will discuss kidney stones and possible strategies for both treatment and prevention.

Kidney stones are hard deposits composed of minerals and salts that form inside your kidneys. Certain conditions such as diabetes, gout, and obesity, for instance, may make a person more susceptible to developing kidney stones. There are different types of stones that vary on composition, but the most common (around 80%) are in the form of calcium oxalate. Oxalate is a substance made by the liver but is also present in some fruits and vegetables such as potatoes and spinach, as well as foods like almonds and chocolate.

Typically, kidney stones only cause symptoms when they are moving. These symptoms may include: severe, sharp pain in the side and back, pain in the abdomen and groin, pain that fluctuates or comes in waves, and/or pain during urination. Other symptoms could include discolored and/or cloudy, foul-smelling urine and nausea. The pain can shift depending on where in the urinary tract the stone is located. NSAIDS, such as ibuprofen or naproxen, are generally recommended for the acute treatment of stones as they decrease ureteral spasms and help with pain. In cases where a stone may be larger, an alpha-blocker such as tamsulosin may help by further relaxing the ureters.

Kidney stones will normally pass through a person's urinary system on their own when smaller than 5mm. For slightly larger stones, as mentioned above, the addition of an alpha-blocker may assist in moving the stone along. Lithotripsy or other procedures may help break apart or remove larger stones that may be too large to pass normally.

Kidney stones can be very painful and often quite debilitating. It is estimated that for people who have had a kidney stone, 50% will experience another stone within 5-10 years. Prevention strategies are the best way to help avoid a stone from forming.

## PREVENTION OF KIDNEY STONES REQUIRES A MULTIPRONGED APPROACH, WITH THE MOST IMPORTANT STRATEGY BEING ADEQUATE HYDRATION.

People should aim to consume at least 1 gallon of liquid per day but should limit beverages such as soft drinks as they have components that may increase stone formation. In the case of calcium oxalate stones, it is important to aim for 1,000 to 1,200mg of dietary calcium per day as calcium will bind oxalate in the gut, reducing the potential for reaching the urine. Limiting sodium intake (less than 2,300mg/day) may also prevent stone recurrence. For those people taking vitamin C, doses should be limited to 1,000mg or less as higher doses may promote stone formation. In certain cases, medications such as potassium citrate, or even a thiazide diuretic may be used especially if a person has a co-existing condition such as hypertension.

Hydration is very important to prevention, it is even more important during the summer months when we are out in the heat and perspiring more. In these times, we need to be sure we are keeping hydrated with extra water and fluids. Not only will this help prevent kidney stones in those that are susceptible, but it will also keep you from developing dehydration or heat exhaustion.

*Thanks for stopping by and see you next month at the Corner.*