

Kidney stones essay



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Kidney stones are small, hard crystals that form inside the kidneys. The crystals are composed of various minerals and acidic salts that clump together forming a “stone” shape that can remain in the kidneys or exit the body through the urinary tract. Kidney stones can vary in size and can cause slight discomfort or severe pain depending on the size of the stone. While treatment is usually unnecessary, certain medication can be prescribed to alleviate any pain associated with the passing of kidney stones. Treatments are also available to help prevent the reoccurrence of kidney stones for individuals who are at a higher risk for developing these small crystals.

Causes

There are numerous factors that cause kidney stone formation within a person’s kidneys. Kidney stones are caused by an imbalance of water, salts, minerals and other substances that pass through urine. A lack of drinking plain water is typically the cause of kidney stone formation in most people. Dietary factors, medical conditions or a family history of certain illnesses can also increase a person’s risk for developing kidney stones. Kidney stones can be classified into several types, depending on the main cause of formation:

Calcium stones: Calcium stones are the most common form of kidney stones and are caused when calcium combines with other substances, typically oxalate, forming a hard crystal. Phosphate and carbonate are other examples of substances that can combine with calcium.

These substances can be found in certain foods, or can be increased within the body due to certain metabolic disorders. This type of kidney stone is more often found in men than women. Uric acid stones: Individuals who eat

high-protein diets, suffer from gout or are constantly dehydrated are likely to form uric acid stones. Men are more likely to suffer from this form of kidney stone. Cysteine stones: Those who suffer from a hereditary disorder, known as cystinuria, are likely to form cysteine stones. Cystinuria is a genetic disorder where there is too much cysteine, an amino acid, present within a person's urine. This type of kidney stone can affect both men and women. Struvite stones: A struvite stone can form due to an infection, most likely a urinary tract infection. These stones are known to grow in size at a rapid rate, completely blocking the kidney, bladder or ureter. Women are more likely to suffer from this type of kidney stone than men. There are other factors and substances responsible for the formation of kidney stones, though the types listed here are the most common.

Symptoms

Symptoms of kidney stones become apparent depending on the size and/or the location of the stone within the urinary tract. Typically, signs and symptoms aren't apparent until the kidney stone has passed into the ureter, which is the tube that connects the kidney and bladder. The most common symptom of kidney stones is pain or discomfort that ranges in severity, and may come and go suddenly. Here is a list of signs and symptoms to look out for when dealing with kidney stones: Pain in the side and back, directly below the ribs.

Treatment of kidney stones depends on the size and type of kidney stone the individual is dealing with. In most cases, no treatment is necessary for smaller stones, and all that is required is increased water intake to help the

stone pass through the urinary tract. Certain medications and pain relievers like NAIDS or acetaminophen can help alleviate pain or discomfort caused by kidney stones.

Larger kidney stones too difficult to pass or those that might cause further medical complications without treatment can be surgically removed.

However, there are less invasive treatments available to help under such circumstances: Extracorporeal shock wave lithotripsy uses sound waves to break up kidney stones through vibrations. This allows larger kidney stones to be broken down into smaller stones so they can be passed through the urinary tract with less pain and without further complications Ureteroscopy consists of a thin, lit tube known as ureteroscope with a camera attached that is inserted through the urethra to locate a kidney stone. Once located, special tools are used to remove or break the kidney stone into smaller pieces so that it can pass through the urine.

Percutaneous nephrolithotomy can be used to for larger stones found within or near the kidneys. Stone are removed using an endoscope that is inserted into the kidney through a small incision. While kidney stones may not require medical treatment, it is important to contact a physician as soon as any symptoms become apparent. A physician can diagnose if medical treatment is necessary or referral to a nephrologist is needed for further treatment.

Treatment

Prevention of kidney stones may include a combination of lifestyle changes and medications. A change in life style may reduce the risk of kidney stones by the following: Drink water throughout the day. For people with a history of

kidney stones, doctors usually recommend passing about 2.6 quarts (2.5 liters) of urine a day. Your doctor may ask that you measure your urine output to make sure that you're drinking enough water. If you live in a hot, dry climate or you exercise frequently, you may need to drink even more water to produce enough urine. If your urine is light and clear, you are likely drinking enough water. Eat fewer oxalate-rich foods. If you tend to form calcium oxalate stones, your doctor may recommend restricting foods rich in oxalates.

These include rhubarb, beets, okra, spinach, Swiss chard, sweet potatoes, nuts, tea, dark sodas, chocolate and soy products. Choose a diet low in salt and animal protein. Reduce the amount of salt you eat and choose non-animal protein sources, such as legumes. Continue eating calcium-rich foods, but use caution with calcium supplements. Calcium in food doesn't have an effect on your risk of kidney stones. Continue eating calcium-rich foods unless your doctor advises otherwise. Ask your doctor before taking calcium supplements as these have been linked to increased risk of kidney stones. You may reduce the risk by taking supplements with meals. A referral to a dietitian may be helpful for education and development of an eating plan that may reduce the risk of further development of kidney stones.