



Kidney Stones

What is a kidney stone?

A kidney stone is a hard mass that occurs when calcium oxalate or other chemicals in the urine form crystals that stick together. These crystals may grow into stones ranging in size from a grain of sand to a golf ball.

Are kidney stones common?

Some one million Americans--the majority between the ages of 20 and 40--are treated each year for kidney stones. Kidney stones are more common in men, who account for about four out of five cases.

Why do kidney stones form in some people and not others?

Normally, urine contains substances that prevent crystals from forming. However, these do not work for everyone. Factors that can contribute to stone formation in susceptible people include:

- Too little fluid intake
- Chronic urinary tract infections
- Misuse of certain medications
- Urinary tract blockage
- Limited activity for several weeks
- Certain genetic and metabolic diseases

What are the symptoms of kidney stones?

- Some people may not have any symptoms, but most have at least some, such as:
- Severe pain in the kidneys or lower abdomen, which may move to the groin; pain may last for minutes or hours, followed by periods of relief
- Nausea and vomiting
- Fever, chills and weakness
- Cloudy or foul-smelling urine
- Blood in the urine
- Blocked urine flow

How are kidney stones diagnosed?

X-rays can usually identify the presence of stones. Specialized x-ray techniques (sometimes using dye injections) or sound waves may be used to identify more accurately the size and

location of the stones and to test kidney function. Blood and urine tests may help a doctor to find out what is causing the stone and plan the best treatment.

How are kidney stones treated?

Most stones can be treated with increased fluid intake, changes in diet and medication. About 90 percent of stones will pass by themselves within three to six weeks. Certain types of stones may sometimes be dissolved using medications; however, calcium-containing stones (the most common type in the U.S.) cannot be dissolved. Stones should always be removed when infection, obstruction or kidney damage are present. When removal becomes necessary, several different methods are available. The best method for you depends on the size, location and type of stone. Some stones are removed by passing a telescopic instrument into the bladder or into the ureters--tubes that connect the bladder and kidneys--to pull the stones out or to break them into small fragments with shock waves or laser beams. Or a telescopic instrument may be inserted directly into the kidney through a small slit made in the patient's side to pull the stone out whole or break it down into small fragments. The newest method of stone removal is called extracorporeal shock wave lithotripsy (ESWL). In this technique, stones are broken down into small fragments by high energy shock waves from a device outside the body.

Can kidney stones be prevented?

Yes, treatments that can prevent kidney stones from forming are possible in many cases. Strong evidence suggests that a high fluid intake may decrease the risk of stones. In addition, once the cause of the stone is found, medications or changes in diet may be used to help prevent new stones. The type of medication used is based on blood and urine tests.