

Kidney Stones



The University of Rochester Medical Center's commitment to help Rochester become America's healthiest community by 2020

What is a Kidney Stone?

A kidney stone is a solid piece of material that forms in the kidney out of substance in the urine. A stone may stay in the kidney or break loose and travel down the urinary tract. A small stone may pass all the way out of the body without causing too much pain. A larger stone may get stuck in a ureter, the bladder, or the urethra. A problem stone can block the flow of urine and cause great pain.

Types of Kidney Stones

Calcium—the most common form of kidney stones, calcium stones are caused when excess calcium, which is not used by bones and muscle, is not flushed properly out of the kidneys.

Struvite—may form after an infection and contains mineral magnesium.

Uric acid—forms when there is too much acid in the urine.

Cystine—the rarest stone is typically caused by a disease that runs in families.

Helpful Hints:

Depending on your type of stone, there may be things you can do to prevent recurrence:

- 1 Drink lots of liquids. Try to drink at least 10 to 12 glasses every day. This is the most important thing you can do to keep your kidneys from making stones. At least half of your liquids should be water. You can drink other liquids for the other half, but try not to use grapefruit juice.
- 2 Cut down on sodium (salt). Do not use many convenience foods, fast foods, or processed foods. Limit foods high in salt like:
 - Most processed meats such as bologna, hot dogs, and sausage (even if these items are made from chicken, turkey, or beef, they are still very high in salt)
 - Dry soup mixes and most canned soups
 - Pickles and sauerkraut
 - Convenience mixes like Hamburger Helper[®], Shake 'N Bake[®], Rice-A-Roni[®]
- 3 Don't eat too much meat. We need about 2 to 3 servings each day. Each serving should be about the size of the palm of your hand.
- 4 Don't use too much Vitamin C. We need about 75-90 milligrams (mg) each day, but some people take more in vitamin pills. If you do take a supplement, make sure you're not taking more than 500 mg of Vitamin C each day.

- 5 Consume a moderate amount of calcium. Try to include 2 or 3 servings of dairy foods or high-calcium foods every day. Stones are usually made of calcium, but that doesn't mean that you shouldn't eat much calcium. It is better for your calcium to come from food than from calcium supplements. If you do take calcium pills, take them with meals.

Oxalate is in many foods, and it binds to calcium in your body. It's good if they bind together in your stomach or intestines, because then they will pass through your body and not get into your kidneys. But if oxalate doesn't find calcium to bind with in your stomach, it will get into your kidneys, find calcium to bind with there, and form stones.

Many foods have oxalates in them, but only a few will add oxalates to your urine. Try to cut down on these foods:

- Tea
- Nuts and peanut butter
- Chocolate
- Wheat bran
- Strawberries
- Beets
- Spinach
- Rhubarb