



Kidney Stone Prevention

You have/had a kidney stone, now what?

Unfortunately, no one action on your part will prevent a future kidney stone. In this handout, you will find general guidelines to help prevent future kidney stones.

Water. Water. Water.

It is extremely important to drink lots of water throughout the day. Water intake ensures your kidneys are producing lots of urine. Continual urine production, which comes from consistent fluid intake, prevents the stone material from settling in your kidneys or urinary tract causing build up and possible stone formation.

While water is the best, other hydrating fluids such as Gatorade® or Pedialyte® work well. Stay away from soda and grapefruit juice, as those can have the opposite effect. In addition, be sure to remember to limit the amount of sugar in any drink.

Lemon has some benefit as well. Lemon contains a substance called citric acid. Citric acid helps raise the pH of your urine, making it less acidic. Less acidic urine helps prevent stone formation. It is unclear how much citric acid is required to raise the pH of urine. Adding 4 oz of lemon juice or lemon juice concentrate to your daily water intake can be helpful.

Some patients will benefit from additional citric acid supplementation. Please talk to your provider.

The National Kidney Foundation recommends aiming for 2.5 liters of urine production a day. In order to achieve this output, you will need to drink at least 2.5-3 quarts of hydrating fluids a day.

Remember your sweat. When you sweat, you lose fluids. This loss of fluids causes you to produce less urine. When you sweat, remember to drink more hydrating fluids.

Limit dietary sodium (salt):

High levels of sodium intake cause your kidneys to excrete calcium as well. Increased levels of calcium in your kidneys can cause stone formation.

According to the Federal Drug Administration (FDA), the recommended sodium intake for an adult is 2,000mg a day.

Watch out for processed and canned foods. These can have a lot of 'hidden' salt in them. Also fast food typically contains a large amount of sodium.

Even if you don't salt your food, many foods contain added salt. Read the nutritional labels for detailed amounts of sodium in the foods you eat.



Moderate amount of meat-based protein:

Protein intake from meat sources can affect kidney stone formation in a couple of ways. During digestion of animal meat, the substance purine is broken down to uric acid. High levels of uric acid in your urine can cause stone development. In addition, high levels of meat intake can cause calcium loss from your kidneys. The more calcium excreted from the kidneys, the more likely it will form a stone.

The recommendation is to limit your daily intake of animal meat to 6-8 oz. Meat includes red meat, chicken, pork, turkey, and fish. In addition, organ meat – liver, brain – contains a higher level of purines than other meats.

Many non-meat foods are good sources of protein. Due to their nature though, it is important to eat a variety of different non-meat sources to ensure you are getting enough complete protein. Below are just a few examples of non-meat protein sources. Keep in mind nuts can be high in oxalate, which can be problematic for some patients (see Oxalate section).

Eggs. Cheese. Milk. Soy. Tofu. Quinoa. Rice. Beans. Chia seeds. Most nuts.

Despite moderate amount of meat-based protein, some people still produce excessive amounts of uric acid. If this occurs, specific medication can be prescribed to you to help prevent uric acid buildup in your urine.

Calcium – Balancing Act:

Your diet should include a normal amount of calcium intake, 800-1,200mg a day. Foods with calcium are generally better utilized by your body than supplements.

Too much or too little calcium in your body can lead to kidney stone formation. While limiting calcium intake might seem intuitive, it can cause more oxalate to be excreted in your urine, causing kidney stones. On the flip side, too much calcium at one time which typically occurs with calcium supplements taken without food, can cause the calcium to be excreted too quickly, causing possible stone formation.

Please discuss any calcium supplements with your all your providers. If you do take a calcium supplement, make sure it is taken with food/meal.

Oxalate – Balancing Act:

Many healthy foods are higher in their oxalate content. A diet full of higher-level oxalate foods can increase your risk of kidney stones.

The key is to eat higher level oxalate containing foods in moderation and when you eat them, drink additional water/hydrating fluids to help flush it out.



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Vitamin C:

While vitamin C is an important part of a well-balanced diet, too much can lead to kidney stone formation. Keeping your total intake of Vitamin C to around 60mg daily is recommended by the FDA. If your intake is closer to 1000mg daily, this can lead to increase oxalate formation.

Prevention of kidney stones is not an exact science. Many factors, including genetics, play into kidney stone formation. Be sure to ask your provider about any additional tests and/or follow-up you need to help stay kidney stone free!