

Dietary Instructions for Kidney Stones Prevention



مؤسسة حمد الطبية
Hamad Medical Corporation

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قسم التغذية العلاجية
Dietetics and Nutrition Department

Kidney stones are small, hard mineral deposits. They form inside the kidneys when urine is too concentrated and contains more crystal-forming substances than the fluid in the urine can dilute. These substances include uric acid, calcium, and oxalate. The crystals stick together and form a stone that may range in size.

The first step in the prevention of kidney stones is to understand what is causing the stones to form.

Knowing what types of food cause kidney stones to form is an important part of preventing them, as it is important to avoid/limit foods that may worsen the condition or cause it to reoccur.

The main types of kidney stone are:

- **Calcium oxalate stones**

This is the most common type of kidney stone and is usually made of calcium and oxalate (a natural chemical found in most foods).

- **Uric acid stones**

This type of kidney stone is formed when urine is too acidic or when the blood is high in uric acid.

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Drink plenty of water, at least 2.5 liters per day to help increase urine output

Increase fluid intake:

Drink a cup of water at specific times during the day, for example, when you get up in the morning, when you arrive at work, and so on.



Keep a large bottle of water at your desk and sip from it throughout the day. Carry a refillable water bottle everywhere.

Include liquid and moist foods, such as soups, stews, and others in your diet.

Don't wait until you feel thirsty to drink water.

To increase your tolerance of water, should you not like the natural taste of water, try flavoring it with **lemon, mint, cucumber, or rose water.**



cucumber
lemon
mint

Remember that: Urine should be pale in color which indicates good fluid intake



Reduce salt/sodium intake

A high salt 'sodium' intake increases the risk of stone formation.

Avoid smoked, processed meats and pickles.

Avoid canned/powdered soups, salty cheeses, and salty snacks such as chips, crackers, popcorn, and salted nuts and seeds. Avoid ready-made sauces and condiments such as ketchup, mustard, barbecue, and soy sauces.

Use caution when adding salt to foods. Use no more than 2/3 teaspoon of added salt to your food each day.

If you choose canned foods, rinse the food with water to reduce the sodium content.

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Ready/Frozen meals usually contain hidden sodium as a preservative; read ingredient lists carefully.

Preservatives that contain hidden sodium include:

- Sodium bicarbonate, the chemical name for baking soda
- Disodium phosphate, monosodium glutamate (MSG), sodium alginate, sodium nitrate or nitrite



Include citrus fruits and vegetables in your diet because they help to reduce stone kidney formation.

It is helpful to include citrus juice in your diet, like lemonade.

Lemonade preparation:

Squeeze lemon to make 1/4 cup of lemon juice,

Add 500 ml of water.

Mix together without sugar.



Eat the right amount of protein daily

Protein is an essential nutrient and plays a significant role in the body. It is important that you eat enough protein to meet your body's needs.

People with an excessive intake of protein in their diet, especially animal protein (dairy, all kinds of meats, eggs) are at increased risk of stone formation due to the increase in urine acidity.

Consult your dietitian to determine your daily protein requirement.



Eat five or more servings of a variety of fruits and vegetables daily.

Eating fruits and vegetable daily will decrease your risk for stone formation by providing potassium, which helps maintain a urinary pH that inhibits stone formation.

Avoid alcohol intake.

Consumption of alcoholic beverages such as wine and beer is associated with high urine acidity. Furthermore, alcoholic drinks reduce urine flow and interfere with the removal of stones.

There is an increased risk of developing kidney stones if you are obese.

Maintaining a healthy weight is appropriate to avoid developing kidney stones, if you are overweight or obese, reduce your weight gradually and avoid rapid weight loss.



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Calcium Oxalate Stone

Calcium oxalate stones are the most common type of kidney stone. Excessive intake of high oxalate foods with low calcium consumption is a risk factor for calcium oxalate stone formation.

If you are suffering from this type of kidney stone, limit your intake of foods containing high oxalate, including:

- Green leafy vegetable (endive, collards, dandelion, escarole, parsley, spinach, rhubarb, Swiss chard, etc.)
- Beets
- Sweet potato, potato chips, and french fries
- Peanut butter, and all nuts (especially almonds, hazelnuts, cashews, peanuts)
- Soybeans
- Turmeric
- Seeds (especially sesame and sunflower seeds) and tahini
- chocolate and cocoa
- Berries and strawberry
- Dried figs

Patients with calcium oxalate stones are required to consume adequate amounts of calcium. This, in turn, helps reduce the amount of oxalate being absorbed by the body, thus stones are less likely to form.

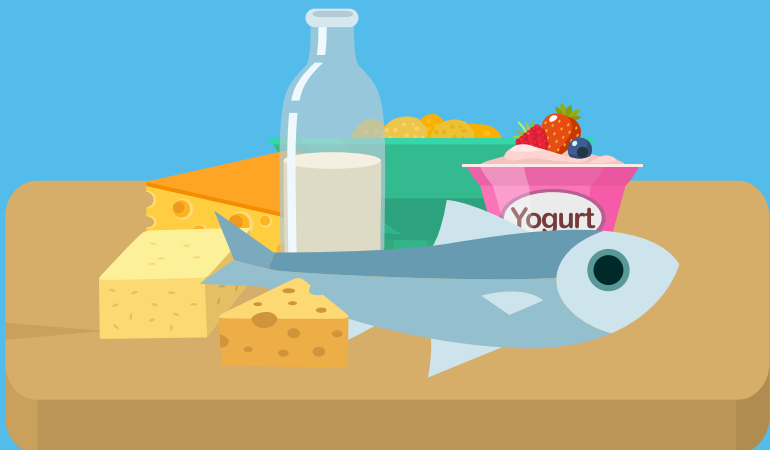


Eat three servings of calcium-rich foods daily. Distribute your calcium intake throughout the day, consuming some at each meal for optimal stone prevention.

Adult males and females require 1,000 to 1,200 milligrams of calcium daily.

These foods provide one serving of calcium:

- 1 cup milk
- 1 cup non-fat or low-fat yogurt
- 1 cup calcium-fortified soy milk or rice milk
- 1 cup calcium-fortified cereal
- 1 1/2 oz low-fat/low-salt cheddar cheese and white cheese
- 1 serving (100 gm) salmon or sardine



Stop taking Vitamin C supplements.

When the body gets more Vitamin C than it needs, some of the Vitamin C breaks down into oxalate. The oxalate then goes to the kidneys and into the urine increasing the risk of kidney stone formation.

You do not need to limit fruits and vegetables that are rich in Vitamin C.

Limit your intake of simple sugars

Uric Acid Stones

Purines are substances found in animal and plant food that your body converts to uric acid. Eating foods rich with purines leads to high uric acid levels, which results in uric acid stone formation.

High purine diet ► **high uric acid** ► **uric acid kidney stones**

A diet low in purines is recommended for persons who develop uric acid stones.

If you have this type of kidney stone:

- Your diet plan should be low in purine-rich food sources
- You should consume only the required amount of protein
- Limit your intake of simple sugars

A diet low in purines is recommended for persons who develop uric acid stones.

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Use the following table to reduce purines in your diet.

Avoid foods high in purine	Limit foods moderate in purine
<ul style="list-style-type: none">• Organ meats (such as liver or kidney)• Gravies, broths, and sauces made with meat• Bacon• Veal• Venison• Mussels• Caviar• Oily fish – sardines, tuna, anchovies, herring, mackerel, sprats, whitebait, trout• Codfish• Scallops and haddock• Turkey• Beer and alcoholic beverages (all types)	<ul style="list-style-type: none">• Dried peas, beans, and legumes• Lentils (1 cup per day)• Whole grains• Wheat bran• Brown rice• Oatmeal• Asparagus• Cauliflower• Spinach• Mushrooms (not more than ½ cup per day)• Chicken• Duck• Beef• Tofu• Crab, lobster, oysters, and shrimp

Foods not listed above should be consumed as per daily requirement



Dietetics and Nutrition Department

 hdietetics.hamad.qa