

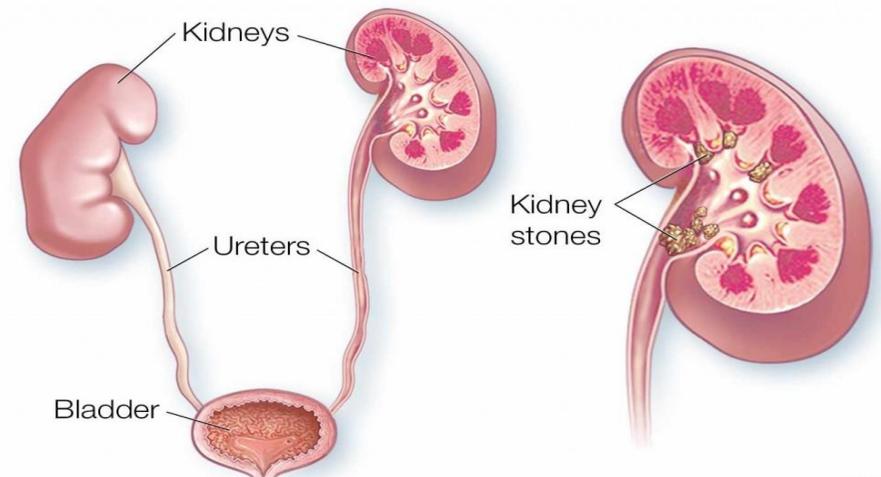
Useful contacts

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Date:
Revision date:
Ref. number:

Dietary Advice for Patients with Kidney Stones



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Introduction

Kidney stones, also called renal calculi, can form in any part of the urinary tract (the kidneys, ureters, bladder and urethra). There are different types of kidney stones. Calcium based stones are the most common (with calcium oxalate being more common than calcium phosphate) but stones can also be made up of uric acid, struvite and cystine. People tend to form the same kind of stone each time and, unfortunately, once somebody has formed a stone they are at a higher risk of forming more stones in the future; 50% of patients with a stone will go on to develop further stones over the next 10 years.

Whilst it is sometime possible to reduce the risk of forming stones with medications, it is almost always possible to reduce the risk by increasing fluid intake and often by following dietary advice. Dietary advice may be 'general' (reduces the risk of all types of stones) or 'specific' (reduces the risk of particular types of stones).

Calcium Oxalate Stones

These stones are the most common. You should aim for normal calcium content in your diet (by including a normal amount of dairy produce). In some scenarios, patients may be told to take calcium tablets with their meals.

Reducing the oxalate in your diet can be helpful. This is particularly true if you have been told your stones form due to gastrointestinal problems (including gastric bypass surgery or conditions such as inflammatory bowel disease). The following foods are high in oxalate and should be limited;

- Fruits: Rhubarb, kiwi, figs, strawberries, grapefruit, cranberry juice.
- Vegetables: Celery, spinach, beetroot, tomato puree, beans
- Miscellaneous: Tea, chocolate, carbonated drinks, nuts, soy products and peanut butter
- Grains: Bran and buckwheat.

Struvite Stones

These stones are associated with chronic bacterial infections and are only seen in a small proportion of patients. Urine needs to be kept free of infection and may require long term antibiotics.

Salt

Salt contains sodium and is found in many foods. Sodium is removed from the body by the kidneys (in urine). High levels of sodium in the urine often increase the amount of calcium in the urine, increasing the risk of forming stones. Therefore it is usually helpful to reduce your salt intake. You can restrict your salt intake by;

- Not adding salt to food
- Eating freshly prepared food in place of processed foods
- Avoiding foods containing high levels of salt (more than 1.5 grams of salt per 100 grams)
- Using pepper, herbs and spices to flavour foods



Dairy Products / Calcium

Although many stones contain calcium, it is **not** advisable to reduce the amount of calcium in your diet (as this can lead to weaker bones and may also in fact increase your risk of certain types of stones). It is advisable to eat a normal amount of dairy products (2-3 portions of calcium rich foods per day). Low fat versions (skimmed milk, reduced fat cheeses and low fat yoghurts) can be helpful but be aware that these sometimes have higher sugar contents.

Protein

Although protein is essential for growth and repair, high protein diets may be associated with stone formation as it makes the urine more acidic. You can avoid excessive intake by;

- Limiting your intake of animal proteins / increasing your intake of plant proteins (pulses, lentils and seeds)
- Avoiding high protein build up drinks and supplements (unless prescribed by dietician)

Specific advice

Uric Acid Stones

Uric acid is made from the breakdown of purines that are found in certain foods. Reducing your intake of high purine foods helps to prevent uric acid stone formation. This is similar to advice given to patients with gout (which is also due to uric acid crystals).

Foods which are high in purines and should be avoided include; game, oily fish, seafood, offal, meat and yeast extracts.

Foods which contain moderate amount of purines and should be eaten in moderation include; meat, poultry, dried peas and beans, mushrooms, Quorn, wholegrains, asparagus, cauliflower, spinach.

Foods which are low in purines include; dairy, eggs, bread, low fibre cereals, pasta, fruit and vegetables (see moderate purines)

In addition to these measures, sometimes patients will be given medication to reduce the acidity of their urine.

General advice

The following dietary advice is appropriate for almost all types of stones, including calcium-based stones and those where the composition isn't known.

Fluids

Ensuring you pass dilute urine is often the single most important measure you can take to stop stones forming. This means drinking enough fluids to keep your urine clear; usually 2-3 litres a day (and more if exercising or it is hot). It is also important to keep hydrated overnight.

What you drink is probably less important but try to avoid drinks with high calorie contents (such as fruit juices or fizzy drinks) as they can lead to weight gain and dental problems. Limit alcohol to within the weekly recommended guidelines (14 units for women and 21 units for men). Adding a squirt of fresh lemon juice to water will help provide citrate which stops stones forming.

