Diet and kidney stones

The most common type of kidney stones result from too much calcium and oxalate in the urine. These minerals bind together as crystals, forming stones. The following dietary guidelines can help to prevent kidney stones.

1. Drink plenty of fluid
   - Drink more fluid, especially water
   - Drinking water helps to flush out the kidneys and dilute stone-forming substances, making stones less likely to form.
   - Drink at least 2-3 litres, or 10 cups, of fluid daily. At least half of this should be water (soda, mineral, spring or plain tap water).
   - Have a cup of fluid (250mL) each hour during waking hours, and a large glass of water before going to bed. Drink a glass of water if you wake up during the night.
   - Spread out your fluid intake during the day.
   - AVOID strong black tea and orange juice, as these are high in oxalates.
   - Avoid grape fruit juice, cranberry juice (if more than 500ml/day) and sugary drinks. Drinking large amounts of sugary drinks (softdrink, cordial) can lead to weight gain. Choose diet or low joule drinks to limit weight gain.
   - Lemon juice is a good source of citrate which helps to prevent stones forming. Drink 100ml of lemon juice daily (could be added to water).

2. Limit salt
   - Salt (sodium) increases the amount of calcium in your urine. Limit sodium intake to less than 2300mg per day
   - To reduce salt/sodium:
     - buy fresh foods, or foods without salt - fruit, fresh vegetables, fresh meats, chicken, fish, eggs, porridge, rice, pasta
     - most sodium (75%) comes from processed foods. Limit processed foods high in salt e.g. soup, Bonox, processed meats, sauces, gravy, crisps and snack foods.
     - “low salt” or “no added salt” foods are the best choices. Look for a sodium content less than 150 mg per serve as a guideline. Note that some “reduced salt” products can still contain high levels of sodium.
     - do not add salt at the table or in cooking.
   - What can I use instead?
     - freshly ground pepper, dry mustard powder
     - lemon juice, lime juice, vinegar
     - a sprinkle of dried herbs or chopped fresh herbs
     - garlic, curry, chilli, onion, fresh ginger, spring onions
3. Limit foods high in oxalate

- Reducing oxalate in your diet helps to reduce the amount of oxalate in your urine.
  - Limit intake of:
    - rhubarb, spinach, silverbeet, beetroot, eggplant, sweet potato, celery, leeks
    - nuts, peanut paste
    - strong black tea, orange juice
    - chocolate
    - wheat bran and wheat germ
    - berries (eg strawberries, blackberries), dried figs

4. Include adequate calcium in your diet

- Dietary calcium is important for your bones and teeth. Adequate dietary calcium intake is recommended.
- Include at least 2-3 choices daily from the following list:
  - 250mL milk (eg Trim, skim, full cream, calcium-fortified soy milk)
  - 200mL high calcium milk eg Physical
  - 200g (small tub) yoghurt
  - 40g cheese (2 slices)
  - 3 scoops ice cream

5. Include only a moderate amount of animal protein

- Limit protein from meat, seafood, fish, chicken, eggs to a moderate serve (120 -150g) daily (cooked) (note 60g meat = 2 eggs).

6. Vitamin supplements

- Do not take Vitamin C supplements (also known as ascorbic acid, calcium ascorbate).
- Do not take Vitamin D supplements or cod liver oil.

7. Choose wholemeal and wholegrain foods

- Eating foods higher in fibre can decrease the risk of stone formation by reducing the amount of calcium and oxalate you absorb
- Choose wholemeal and wholegrain breads, flour, cereals, pasta, biscuits and crackers

8. Increase fruit and vegetable intake

Notes

This is a consensus document from Queensland Health Dietitians/ Nutritionists
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