

Department of Nutrition and Dietetics

Renal disease: Low Potassium diet

This information should only be used for patients with a high potassium level and should be followed with supervision from a Dietitian.

What is potassium and what does it do?

Potassium is a mineral found throughout our bodies and is needed for muscle function. Our kidneys help control the amount of potassium in the blood. When the kidneys do not work properly blood potassium levels may rise.

High levels of potassium in the blood do not usually make you feel unwell, but can be dangerous for your heart as it affects heart rhythm and may cause a heart attack.

How can I control levels of potassium in my blood?

Potassium levels can be controlled by following a low potassium diet and following your medical treatment plan which may include dialysis.

The following information will help you limit the amount of potassium eaten whilst still allowing you to consume a wide variety of foods.

What is the recommended potassium level?

- Non- dialysis patients 3.7 – 5.5 mmol/l
- Haemodialysis patients 3.5 - 6.0 mmol/l
- Peritoneal dialysis patients 3.5 - 5.5mmol/l



Patient Information

Avoid potassium-containing food additives

Many processed foods contain potassium additives which manufacturers add to improve the texture, lifespan or reduce the salt content of foods. These additives are absorbed very efficiently by your body and can significantly raise your potassium levels, more so than naturally occurring potassium in other foods. Avoiding additives can therefore help control your potassium levels.

Look for '**potassium chloride**', '**potassium lactate**', '**potassium phosphate**' or '**potassium citrate**' on the labels of processed foods such as low salt products, meat, vegetarian meat alternatives, processed cheese, soups and powdered drink mixes such as hot chocolate and malted drinks.

Cooking Methods

Boiling some high potassium foods, like potatoes, sweet potatoes, yam, taro and cassava and vegetables in water reduces their potassium content. Avoid steaming, microwave, stir-fry and casseroles as these cooking methods will not remove enough potassium.

Fruit and vegetables are a very important part of your diet and can actually help to regulate your potassium levels when eaten in the correct amounts, so please continue to include them **unless** they are in the list to be avoided. You can still aim for 5 portions of fruit and vegetables a day from the lower potassium list, and using specific cooking methods as below will also help you enjoy these foods whilst lowering their potassium content.

Cooking potato/sweet potato/yam/taro/cassava:

- Peel and cut into small pieces.
- Boil for around 20 minutes in a large volume of water and then throw the water away.
- They can then be fried or roasted **after** boiling.
- To help retain the shape, cut into the desired shape before boiling then allow them to cool before frying or baking.
- Soaking will not remove enough of the potassium.
- Avoid pressure cooking, baking, steaming, microwave, stir-fry and casseroles as these cooking methods will not remove enough potassium.

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- Bought potato products, for example, from the chip shop/restaurant/ take-away will not have been boiled first therefore, these are too high in potassium.

A portion of potatoes / sweet potato / yam / cassava / taro (150g/7oz/3 egg sized potatoes) can be swapped for 150g tinned tomatoes.

If you do not have potatoes/yam/cassava/taro on a particular day you could have tomato based pasta sauce or a tomato based curry instead.

Cooking Vegetables:

- Aim to boil vegetables where possible as this will remove more potassium.
- Avoid pressure cooking, baking, steaming, microwave, stir-fry, soups and casseroles as these cooking methods will not remove enough potassium.

Milk

Limit this to ½ pint per day. This includes milk in drinks, yoghurts, sauces and puddings. One small (125g) pot of yoghurt could be swapped for ¼ pint of milk within the allowance.

Milk is a good source of protein, but it contains high levels of potassium and is absorbed easily within the body, therefore, being aware of your milk consumption in a day may help control your blood potassium level.

Suitable alternatives to milk

Oat, soya and rice milk often contain less potassium than cows milk, however, they may contain potassium additives such as potassium iodide and potassium phosphates which will be listed on the food label. Choose milk alternatives that do not contain these additives if you would like to try a milk alternative. Up to one pint of these alternative milks is acceptable per day. All types of cheese, cream and crème fraiche can be eaten in moderation.

Condensed milk, Evaporated milk, coconut milk, and coffee whiteners are not suitable.

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Avoid protein based shakes as these are high in potassium.

Meat and Fish

Aim for moderate quantities of meat (roughly the size of your palm) and or a medium fillet of fish in your main meal a day. Meat and fish can be substituted with meat substitutes such as soya or Quorn, or extra beans and pulses- see below.

Lentils and beans

If beans or lentils are eaten instead of meat then they do not have to be counted as a portion of vegetables. If taken in addition to meat they need to be swapped for a vegetable portion and 1 tablespoon would be roughly equivalent to one portion of vegetables.

Food category	High Potassium foods to limit	Low Potassium alternatives
Bread	Seeded bread, fruit bread, naan with coconut. Breads containing nuts, seeds or dried fruit.	White/wholemeal/granary Chapatti, Naan bread (plain) Pitta bread, Croissant (plain), bagels, crumpets, muffins.
Breakfast cereals	Cereals containing fruit, nuts, coconut, chocolate such as Muesli and some granola.	Low fibre cereals (such as Cornflakes, Cheerios), porridge, wholegrain cereals e.g. Weetabix, Shredded wheat.
Potatoes and starchy foods	Potato crisps, jacket potatoes, roast potatoes, chips, instant mash, bought potato products.	Potatoes should be limited to one 150g portion (about 3 egg sized potatoes) per day (roasted, mashed or fried). Rice, pasta, noodles.
Fruit	Apricots, avocado, blackcurrants, banana, oranges, coconut, dates, dried fruit, figs, mango, melon, pomegranate, prunes, raisins, sultanas, redcurrants, rhubarb, gooseberries,	See attached list

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	guava, sharon fruit.	
Vegetables	Artichoke, beetroot (raw/boiled), brussel sprouts, butternut squash, mushrooms, tinned tomatoes, parsnips, pak choi, spinach, swiss chard, baked beans, soya beans, aduki beans, pinto beans	See attached list
Sweets	Chocolate, toffee, fudge, cereal bars including nuts and fruit, coconut ice, liquorice sweets, nougat, carob.	Boiled sweets, chewy sweets, jelly sweets, chewing gum, marshmallow, honeycomb, peppermints, sherbet, Turkish delight, popcorn.
Cakes and biscuits	Any cakes and biscuits with dried fruit, nuts, chocolate.	Plain cakes and biscuits, biscuits with jam or cream, iced biscuits, apple pies, doughnuts, flapjacks, pastries, pancakes, cream cakes, cream crackers.
Snacks* * to have in moderation as these are generally high in salt	Potato crisps, potato snacks (such as Hula Hoops, Quavers and others), nuts and seeds, Bombay mix, twiglets, vegetable crisps, dried fruit.	Wheat/corn/rice based snacks such as, Skips, Wotsits, tortilla chips, Wheat Crunchies, Nik Naks, plain popcorn, rice cakes such as Snack a Jacks, Mini Cheddars, breadsticks.
Condiments and sauces	Salt substitute, low salt stock, tomato ketchup, brown sauce, curry sauce, tomato puree, marmite/Bovril/vegemite, molasses, black treacle, peanut butter, chocolate spread, sundried tomatoes.	Pepper, garlic, vinegar, mayonnaise, salad cream, French dressing, pickle, mint sauce, gravy, horseradish, mustard, stock cube, jam, marmalade, honey, lemon curd, golden syrup.
Drinks	Cocoa, hot chocolate, Horlicks, coffee, fruit smoothies, vegetable juices, fruit juice (orange, apple & grapefruit), tomato juice.	Tea, milk ½ pint per day, fizzy drinks, flavoured water, tap/mineral water, squash, barley water, Barley Cup or Caro (cereal-based coffee alternatives).

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Fruit and vegetables

Aim for five portions per day from the low potassium list. Try to select the larger portions of fruit and vegetables, from the portions list, to help contribute towards your five a day.

Apple (1 small)	Asparagus (3 spears)
Blackberries (100g)	Aubergine (1/4)
Blueberries (200g)	Bean sprouts (2 tablespoons)
Cherries fresh (8)	Beetroot (3 slices pickled)
Clementine's (2 medium)	Broccoli (2 spears)
Damsons (3)	Cabbage boiled (90g medium portion)
Grapefruit (1/4)	Carrots (60g medium portion)
Grapes (15)	Cauliflower boiled (60g medium portion)
Kiwi (1 small)	Celery (1stick raw)
Lemon	Chicory raw (100g)
Lime	Courgette (½ large)
Lychee	Cucumber raw (1" piece)
Nectarine (1 small)	Gherkins pickled (60g)
Olives	Green/French beans boiled (Small portion)
Passion fruit (4)	Leek (½)
Peach fresh (1 small)	Lettuce average raw (50g)
Pear Fresh (1 small)	Mange-tout peas boiled (150g)
Pineapple fresh (1 slice)	Marrow boiled (100g)
Plum (1 small)	Mixed vegetables frozen boiled(90g)
Raspberries fresh (100g)	Mushrooms boiled (60g)
Satsuma's (2 small)	Mushy peas canned (85g)
Strawberries (100g)	Okra canned
Tangerines (1)	Onions fried (3 slices)
	Onions pickled (20)
Cranberry juice (200mls)	Onions raw (90g)
Grape juice (200mls)	Peas (2 tablespoons)
Pineapple juice (200mls)	Pumpkin boiled (200g)
	Radishes (8)
	Spring greens boiled (100g)
	Sweet corn canned/boiled (2 tablespoons)
	Swede, boiled (Large portion (100g)
	Tomato raw (1 small)
	Turnip boiled (½)
	Watercress raw (¼ bunch)

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Tinned Fruit

The juice/syrup from tinned fruit should be discarded. A $\frac{1}{3}$ of a tin of fruit is a portion. All tinned fruit is appropriate.

Alcoholic Beverages

Please make sure you drink alcohol sensibly and follow guidance on healthy weekly alcohol intake ie no more than 14units a week and spread drinking across 3 or more days if you regularly drink as much as 14 units a week. The quantities listed below would not exceed daily potassium allowance if consumed as part of a balanced diet.

Have a maximum of one of the following a day:

1 pint beer/lager

$\frac{1}{2}$ pint cider

175ml red wine

250ml rose/white wine

100ml port

100ml sherry

Spirits do not contain potassium.

Seeds, herbs and spices

These all contain potassium particularly the dried varieties. They can still be used, but in moderation. Please ask for a more information if required.

Salt Substitutes

All salt substitutes, such as Lo salt, Pan salt, SoLo and low sodium salt, should be avoided as they contain potassium and are not suitable for people with kidney problems. Be aware of lower salt foods (such as reduced salt stock cubes) may use a salt substitute so will be higher in potassium.

Eating well

It is important that you eat well whilst following a low potassium diet. If your appetite reduces, please contact your dietitian for further dietary advice.

Patient Information

Warning Star fruit contains a chemical which can be extremely dangerous to people with kidney problems.

Further Information

This leaflet has been produced by Coventry Renal Dietitians, University Hospitals Coventry and Warwickshire NHS Trust. If you have any questions or would like further information, please contact them on 024 7696 6151.

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