

Nutrition and Dietetics

Renal disease: Low potassium diet

This diet sheet is intended to be used for patients with a high potassium level and should be followed with supervision from a Dietitian.

Potassium

Potassium is a mineral found in many foods and is needed for muscle function. Our kidneys help control the amount of potassium in the blood. When your kidneys are not working properly, blood potassium levels may rise.

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

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

How can you control levels of potassium in your blood?

There are many different things you can do to help manage your blood potassium levels. Before changing your diet, there are medical factors that can help to reduce your potassium levels:

Taking any prescribed bicarbonate medications:

- Low blood bicarbonate levels are common for patients with chronic kidney disease (CKD) and can increase blood potassium levels. Your



Patient Information

healthcare team will check your bicarbonate levels and if needed, will adjust your dialysis bicarbonate levels or prescribe sodium bicarbonate.

- Make sure you take this medication as prescribed. If you experience any side effects that prevent you from taking your medication, please discuss them with your medical team.

Avoiding constipation:

Constipation can increase your blood potassium levels. You may be constipated if:

- You have not had a poo (bowl movement) at least 3 times in the last week or you're pooing less often than usual.
- Your poo (stool) is unusually large or small and is dry, hard or lumpy.
- You are straining or in pain when you have a poo.
- You feel like you haven't fully emptied your bowels after a poo.

If you have symptoms of constipation, please inform your healthcare team so they can consider medication to help resolve this.

To help avoid constipation in the long term, you can increase the amount of fibre in your diet. Try the following diet tips:

- Choose a higher-fibre breakfast cereal such as Weetabix, shredded wheat or porridge.
- Try wholemeal or granary breads.
- Choose whole grains such as whole wheat pasta or brown rice.
- Add pulses, beans, lentils or chickpeas to stews, curries and salads.
- Aim for 5 portions of fruit and vegetables a day.

Increase the fibre choices in your diet slowly to allow your body to adjust and to prevent build-up of gas.

Managing your blood sugars if you have diabetes

If you are diabetic, high blood glucose levels can increase your potassium levels. If your blood glucose levels are regularly above 8mmol/L, please speak to your GP for a review of your diabetes management or ask your renal team for a referral to a diabetes specialist nurse.

How do you follow a low potassium diet?

This information sheet will advise you on how to limit the amount of potassium you eat while still allowing you to consume a wide variety of foods.

Your dietitian will advise you which sections are relevant to you and may suggest changing 1 or 2 things at a time to check the impact on your potassium levels, rather than following all the advice at once. This approach will help you take the least restrictive path to managing your blood potassium levels.

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

Your personalised dietary plan, on (date)..... is:

- Limit potassium additives (**see section 1**)
- Limit your intake of milk/dairy (**see section 2**)
- Reduce animal-based protein (**see section 3**)
- Avoid easily absorbed potassium (**see section 4**)
- Alter your cooking methods (**see section 5**)
- Be alcohol aware (**see section 6**)
- Eat 5-a-day of low potassium fruit and vegetables (**see section 7**)

1. Limit potassium additives

Limit foods that contain potassium food additives. Many processed foods contain potassium additives, which are absorbed very easily by your body and can raise your potassium levels.

Check food labels if you can and aim to avoid: **Potassium phosphates, Potassium chloride, Potassium citrate, Potassium lactate.** These are most commonly found in processed/packaged foods such as:

- Processed meats such as ham, sausages and burgers
- Vegetarian meat alternatives
- Processed cheese
- Lo salt/Pan salt and low salt products

Patient Information

- Savoury snacks such as wotsits and skips
- Powdered drink mixes such as hot chocolate and malted drinks
- Some soft drinks such as Lucozade and Oasis

Other potassium additives used in food products do not significantly contribute to your daily potassium intake, so you do not need to avoid them. However, all salt substitutes, such as Lo salt, Pan salt, SoLo and low sodium salt, should be avoided as they contain high levels of potassium additives and are not suitable for people with kidney problems. Be aware that lower salt foods (such as reduced salt stock cubes) may use a salt substitute so will be higher in potassium.

Fresh home cooked meals help limit additive consumption. Try to cook from fresh whenever possible.

2. Limit your intake of milk/dairy

Milk is a good source of protein but contains high levels of potassium, which is easily absorbed by the body. To help control your blood potassium levels, limit your milk consumption to ½ pint per day. This limit includes milk in drinks, yoghurts, sauces and puddings. For example, one small (125g) pot of yoghurt can be replaced by ¼ pint of milk within your daily allowance.

- **Cheese, cream and crème fraiche:** These can be eaten in moderation.
- **Condensed milk, Evaporated milk, coconut milk, and coffee whiteners:** These are not suitable for a low potassium diet.
- **Protein-based shakes:** These are often high in potassium and should be avoided.

Suitable alternatives to milk:

- **Oat, soya and rice milk:** These alternatives generally contain less naturally occurring potassium than cow's milk. Up to one pint of these alternative milks is acceptable per day.
- Choose milk alternatives that do not contain potassium additives if you consider switching check the labels.

3. Swap meat, fish or eggs for plant-based sources of protein

The amount of protein you need per day will vary depending on your stage of kidney disease and whether you are on dialysis. Your dietitian can provide specific guidance on this.

For kidney patients, eating large amounts of animal protein, such as meat, eggs and fish can increase your blood potassium levels. While animal protein can be part of a healthy diet, it's beneficial to stick to moderate portions. Plant proteins are less likely to raise blood potassium levels and can be a good alternative. Consider replacing some animal proteins with plant-based sources like beans, lentils, pulses, soya and tofu. Here are some examples:

- **Chilli, bolognaise or shepherd's pie:** Swap 50% of the meat mince for lentils or soya mince.
- **Stews or stir fries:** Replace chicken or other meats with TVP (textured vegetable protein) pieces, firm tofu, chickpeas, lentils or cashew nuts.
- **Milk or yogurts:** Swap dairy options with soya-based alternatives.
- **New recipes:** Explore fully plant-based recipes – Kidney Kitchen has some ideas to get you started.
- **Consider eating at least one plant-based meal a day.**

Note: Avoid ready-to-eat smoked or cured fish products, such as smoked salmon or gravlax, due to an increased risk from Listeriosis.

Listeriosis is an infection caused by the bacteria called listeria. People with kidney disease are at higher risk of serious illness from listeriosis.

For more information on reducing the risk of Listeriosis can be found at:

Listeriosis - NHS (<https://www.nhs.uk/conditions/listeriosis/>)

Listeria - Food Standards Agency (<https://www.food.gov.uk/listeria>).

4. Avoid sources of potassium that are easily absorbed by your body

The main sources of these are:

- Coffee
- Chocolate
- Toffee/fudge

Patient Information

- Dried fruit, fruit juice and smoothies
- Concentrated tomato products, such as tinned tomatoes and tomato puree

5. Change your cooking methods

Boiling some high potassium foods, such as potatoes, sweet potatoes, yam, taro, cassava and vegetables in water can reduce their potassium content.

Potato/sweet potato/yam/taro/cassava: Limit to 1 portion per day and follow these steps:

- Peel and cut into small pieces.
- Boil in a large volume of water for around 20 minutes, then throw the water away.
- After boiling, they can be fried or roasted.
- To help retain their shape, cut them into the desired shape before boiling, then allow them to cool before frying or baking.
- Avoid pressure cooking, baking, steaming, microwave, stir-fry and casseroles as these cooking methods do not remove enough potassium.
- Avoid pre-prepared potato products from chip shops, restaurants or takeaways, as these will not have been boiled first and are high in potassium.
- When possible, boil other vegetables to remove more potassium.

Avoid having tinned tomatoes or tomato-based sauces on the same day as a portion of potatoes, as both are high in potassium. If you do not have potatoes, yam, cassava or taro on a particular day, you can substitute with a tomato-based pasta sauce or a tomato-based curry instead.

6. Be alcohol aware

Please drink alcohol sensibly and follow the recommended guidelines for healthy weekly alcohol intake: no more than 14 units per week and spread drinking across 3 or more days.

Many types of alcohol, such as wine and cider contain potassium. The quantities listed below would not exceed the daily potassium allowance if consumed as part of a balanced diet. Remember to also count alcohol quantities within your daily fluid allowance. Spirits do not contain potassium.

Patient Information

Have a maximum of one of the following per day:

- 1 pint beer/lager
- ½ pint cider
- 175ml red wine
- 250ml rose/white wine
- 100ml port
- 100ml sherry

7. Keep eating fruit and vegetables

Fruit and vegetables are a very important part of your diet and can help regulate your potassium levels when eaten in the correct amounts. Aim for at least 5 portions of fruit and vegetables per day from the low potassium list below:

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)

Patient Information

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)
Cranberry juice (200mls)	Onions pickled (20)
Grape juice (200mls)	Onions raw (90g)
Pineapple juice (200mls)	Peas (2 tablespoons)
Tinned fruit: any variety (1/3 can without syrup/juice)	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)

Low potassium diet: suggested swaps

Food category	High potassium foods to limit	Low potassium alternatives
Bread	Breads containing dried fruit, including coconut/raisin naan bread	White/wholemeal/granary/seeded bread including chapatti, Naan bread (plain) Pitta bread, Croissant (plain), bagels, crumpets, muffins.
Breakfast cereals	Cereals containing dried fruit, nuts, coconut or chocolate such as Muesli and some granola. All bran	Low fibre cereals (such as Cornflakes, Cheerios), porridge, or wholegrain cereals e.g. Weetabix, Shredded wheat.

Patient Information

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 using cooking methods above). Rice, pasta, noodles (including wholegrain varieties)
Fruit *Speak with your dietitian before limiting fresh fruits	Apricots, avocado, blackcurrants, banana, oranges, coconut, mango, melon, pomegranate, redcurrants, rhubarb, gooseberries, guava, sharon fruit* Dried fruits and fruit juice/smoothies.	See above list
Vegetables *Speak with your dietitian before limiting fresh vegetables	Artichoke, beetroot (raw/boiled), brussel sprouts, butternut squash, mushrooms, tinned tomatoes, parsnips, pak choi, spinach, swiss chard, baked beans*	See above 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. Low sugar mints and sweets, sugar free chewing gum are suitable alternatives if you have diabetes
Cakes and biscuits	Any cakes and biscuits with dried fruit, nuts, chocolate.	Plain cakes or scones and biscuits, biscuits with jam or cream, iced biscuits, apple pies, doughnuts, flapjacks, pastries, pancakes, cream cakes, cream crackers.
Snacks* * Check packaging for any potassium additives	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, plain popcorn, rice cakes, breadsticks*

Patient Information

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 *Opt for lower sugar/sugarfree versions if you have diabetes	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).

Patients with diabetes:

Be aware that some of the snacks and drinks listed above are high in sugar, particularly in the 'sweets,' 'cakes and biscuits' and 'drinks' sections. Choose wholegrain and/or lower sugar options where possible, as high blood glucose levels can increase the risk of high potassium levels, even when following a low potassium diet.

If you have any concerns about managing a low potassium diet while also following dietary advice for your diabetes, particularly if you also have a poor appetite, please contact the renal dietitians for individualised advice and support.

Warning: Star fruit contains a chemical that can be extremely dangerous for people with kidney problems.

More information

This leaflet was produced by Coventry Renal Dietitians, University Hospitals Coventry and Warwickshire NHS Trust. If you require any further information, they can be contacted via telephone on 024 7696 6151.

The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact 024 7696 6151 and we will do our best to meet your needs.

Patient Information

You can also follow us on X (formerly known as Twitter) @UHCW_RenalDiet

The Trust operates a smoke-free policy.

Did we get it right?

We would like you to tell us what you think about our services. This helps us to make further improvements and to recognise members of staff who provide a good service.

Have your say. Scan the QR code or visit:

www.uhcw.nhs.uk/feedback



Document History

Department:	Dietetics
Contact:	26151
Updated:	July 2024
Review:	July 2027
Version:	10
Reference:	HIC/LFT/810/09