

Patient Information

## Department of Nutrition and Dietetics

# Renal Disease: Haemodialysis and Diet

**This information should only be used by patients on haemodialysis and should only be given out by a dietitian.**

### Introduction

Healthy kidneys work to remove excess fluid and waste products from the blood. When your kidneys are not working properly, waste products including phosphate and potassium can build up in your blood.

Haemodialysis helps to remove these waste products, and together with your diet, will help to keep you well. Your dietary needs are very individual, and will depend on your monthly blood results and fluid requirements.

This leaflet will explain about diet for those on haemodialysis. Ask your Dietitian if you would like further information or if anything is unclear.

### Summary

- It is important that you eat well now you are on dialysis.
- Eat generous portions of protein foods.
- Limit salty foods and avoid adding salt at the table.
- Know your fluid allowance.
- Limit foods high in phosphate if advised by your Dietitian and take binders if prescribed.
- Potassium – reduce your intake if advised by your Dietitian.
- The diet may change over time.



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### Protein

Protein is needed for the repair and maintenance of body tissue and is a vital component of body fluids including blood. Some protein is lost from your body in the dialysis fluid. It is important to eat plenty of protein to replace what is lost so you do not become malnourished.

#### Good sources of protein are:

Meat, poultry, fish, pulses (peas and beans), eggs, cheese and milk.

In order to meet your protein requirement you should aim for:

..... protein portions per day.

1 protein portion =

30g (1oz) meat or chicken (cooked weight)

Small chicken breast (4-5 protein portions), 2 slices roast meat (3 protein portions)

30g (1oz) fish (cooked weight)

1 fishcake or 2 fish fingers

30g (1oz) cheese - a matchbox size piece

60g (2oz) cottage cheese – 2 tablespoons

1 egg

200ml ( $\frac{1}{3}$  pint) milk

1 tub yoghurt

90g (3oz) peas, beans or lentils (cooked weight)

30g (1oz) dried or raw beans or lentils - 1 heaped tablespoon

60g (2oz) Quorn (equivalent to 1 Quorn steak)

60g (2oz) soya beans cooked (2 tablespoons)

90g (3oz) tofu (cooked weight) - About  $\frac{1}{3}$  of a standard pack of tofu

30g (1oz) fried tofu

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**The following foods are rich in phosphate and therefore may need to be limited:**

Milk: ½ pint /300mls per day (you could swap 1/3 pint (200ml) of milk for 1 yogurt)

Eggs up to ..... a week

Cheese: a matchbox size piece .....a week

## Phosphate

It is important to control the phosphate and calcium levels in the blood. Too high a level of phosphate leads to itchy skin, bone damage and hardening of blood vessels.

## Reduce your intake of phosphate additives

Manufacturers add phosphate to foods for a variety of reasons; keeping foods moist, improving their taste/texture or extending their shelf life.

- *50% of the phosphate we eat could come from food additives*
- *90% of phosphate from additives is absorbed by the body compared to only 40 – 60% of phosphate naturally found in foods*

So, swapping from processed foods to fresh foods can really make a difference

- *Processed meat can contain nearly 70% more phosphate than fresh*
- *Reducing your intake of processed food helps reduce your salt intake too!*

Here is a list of the additives that contribute the most phosphate in processed foods. Aim to avoid processed foods particularly those containing these additives.

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E338	Phosphoric acid
E339	Sodium phosphates
E340	Potassium phosphates
E341	Calcium phosphates
E343	Magnesium phosphates
E450	Diphosphates
E451	Triphosphates
E452	Polyphosphates
E541	Sodium aluminium phosphates

### **Phosphate binders**

To make sure you absorb less phosphate from your foods and drinks you may have been prescribed a phosphate binder – these are listed below.

It is important to take these with foods that contain protein.

- Calcichew should be taken about 10 minutes before food.
- Renacet, Phosex, and Renagel and Renvela should be taken with food.
- Fosrenol or Lanthanum should be taken after food.

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**If you need to restrict your dietary phosphate intake the table below will give you some guidance.**

<b>Food / Drink</b>	<b>Foods high in phosphate additives: try to reduce</b>	<b>Lower phosphate alternatives</b>
Meat	Processed chicken, sausages, bacon, ham, salami, frozen beef burgers, tinned meats, meat paste	Fresh chicken, turkey, beef, lamb, pork, homemade beef burgers / meatballs.
Fish	Frozen fish/shellfish Fish fingers/cakes. Battered or crumbed fish Fish paste	Plain fresh fish: haddock, cod, plaice, salmon, trout. Homemade fish cakes.  Tinned fish: salmon, tuna, mackerel, sardines (boneless and without skin).
Cereals	Cheerio's, Coco Pops, Pop Tarts, instant porridge e.g. Readybrek. Cereals containing bran e.g. Bran flakes, All-Bran, muesli	Weetabix, porridge oats, Rice Krispies, Cornflakes, Shredded Wheat, Special K.
Cheese	Cheese slices/strips, Primula cheese, cheese triangles	Hard cheese - max of...../ week Cream, cottage or ricotta cheese.
Potatoes*	Frozen, chilled and dried potato products e.g. potato waffles, Smash, potato cakes	Fresh potatoes, homemade chips, wedges, roast potatoes (parboiled).

*\* Please note these foods are also high in potassium*

<b>Food / Drink</b>	<b>Foods high in phosphate additives: try to reduce</b>	<b>Lower phosphate alternatives</b>
Bakery	Baking powder & self-raising flour Cake/biscuit/pancake mixes. Pre-prepared baked puddings.	Homemade cakes and biscuits – try to avoid recipes using self-raising flour and baking powder e.g. shortbread.

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	Scones, naan bread, crumpets	Croissant, English muffin, bagels.
Drinks	Dark coloured soft drinks e.g. Coco-cola, Pepsi, Dr Pepper, Oasis, iced tea Hot chocolate, Ovaltine, Horlicks, powdered milk (incl. instant latte or cappuccino), milkshakes, drinking yogurt Beer, wine	Lemonade, Fanta, ginger beer, Lilt, Ribena, Iron Bru, sparkling water, tea, soda water. Diluted fruit squash. Milk – within ½ pint (250ml) allowance Spirits

*Adapted, original from Central Manchester Foundation Trust Renal Dietitians*

### Salt

If you take too much salt it will make you thirsty therefore making it harder for you to stick to your fluid allowance. It can also make your body retain fluid and can contribute to high blood pressure.

You could use a small amount of salt in cooking, but do not add any to your food at the table.

#### **You should limit or avoid the following very salty foods:**

- Tinned and packet soups
- Salted snacks such as crisps, nuts
- Oxo, Bovril, Marmite, stock cubes

#### **Limit the following foods:**

- Cheese
- Bacon, tongue, tinned meat, for example, corned beef, Spam
- Sausages
- Beef burgers
- Smoked fish, smoked cheese and smoked or cured meats

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- Ready meals

**Note: Salt substitutes – Lo Salt, So Lo and products with Pan Salt should be avoided.**

If you would like more information on how to lower your salt intake, please ask your Dietitian.

## Fluid

Because your kidneys are not working properly you may not be able to get rid of all the fluid that you drink. Too little fluid will make you dehydrated, too much will make you overloaded and will put more strain on your heart and lungs.

You should limit your fluid intake to ..... daily.

**Remember** to count the fluid in foods like gravy, curry, milk puddings, ice cream, jelly etc.

The weight you gain in between dialysis sessions gives a useful guide of whether you are drinking too much fluid.

The effect of excess fluid gain will vary between individuals but regularly putting on more than 2Kg in between dialysis sessions will be harmful.

## Potassium

Potassium is a naturally occurring mineral found in most foods. The amount present in your blood is normally controlled by your kidneys. The dialysis process removes potassium but unfortunately the potassium in your blood builds up again on the days you do not dialyse.

A raised blood potassium level results in muscle weakness and can seriously affect your heart.

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The dietitian will discuss with you if a restriction is necessary and provide you with more information.

### To reduce your potassium intake:

1. Do not use salt substitutes such as Lo Salt, So-Lo, Pansalt and Low sodium salt as these are high in potassium.
2. Have only ½ pint (280ml) milk per day.  
Rice and oat milk can be used freely within fluid restriction.  
A maximum of 1 pint (560ml) of Soya milk can be taken.  
Double cream can be diluted with water (half and half) to make an artificial milk, for those not on a low fat diet.
3. Potatoes are high in potassium, however you **can** have them. Have only 3 egg-sized (200g) potatoes per day. Cut into small pieces and boil in a large volume of water; after boiling discard the water. Do not use the cooking water for gravy, soup etc. After boiling potatoes they can be fried, roasted or creamed.

**Limit jacket potatoes, and potato products such as oven chips, potato waffles and croquettes as these won't have been pre-boiled.**

**The following chart shows foods that are high in potassium, and gives lower potassium alternatives. Use this as reference if your blood potassium levels are raised:**

	<b>Foods high in potassium to reduce</b>	<b>Lower potassium foods to have instead</b>
Fruit	Apricots, avocado pears, bananas, dried fruits (sultanas, raisins, dates, figs), oranges, rhubarb, blackcurrants, redcurrants, coconut, pomegranate,	Apple, pear, tangerines or Satsuma's (2 small), plum (1 medium), grapes (15 only), Strawberries (6 only), kiwi, olives, blackberries (20 only), raspberries (20 only),



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	grapefruit, melon, mango and fruit juice	blueberries (200g), small peach or nectarine. Tinned fruit (throw juice or syrup away)
Vegetables	Baked beans, dried beans, mushrooms, parsnips, spinach, tinned tomatoes and brussel sprouts, sweet potato, plantain, Okra	Other boiled vegetables: such as carrots, green beans/French beans, peas, cauliflower, cabbage, broccoli, 1 small tomato, small bowl green salad, red or green pepper, sweetcorn
Cereal foods	All Bran, cereals containing nuts and/or dried fruit	Pasta, rice, noodles, bread Breakfast cereals: Weetabix, Shredded Wheat, porridge
Drinks	Coffee, pure fruit juice, drinking chocolate, malted milk drinks, smoothies	Tea, flavoured water, tap or mineral water, fizzy drinks, squash, fruit teas, Barley Cup
Snacks  (caution if overweight or diabetic)	Any cakes and biscuits with dried fruits, nuts or chocolate  Potato crisps, nuts, dried fruit, Bombay mix, Twiglets  Chocolate, toffee, fudge,	Plain biscuits, jam and cream biscuits, apple pies, doughnuts, flapjacks, pastries, jam/lemon tarts, cream cakes, cream crackers  Corn snacks such as Skips, Wotsits, Nik Naks, Quavers, Wheat crunchies, popcorn and toffee popcorn, Mini Cheddars and rice cakes such as 'Snack a Jacks'. (Have these in moderation as they are high in salt)  Boiled sweets, mints, fruit

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	liquorice, coconut sweets, sweets containing nuts or dried fruit, nougat	pastilles and jellies, plain Turkish delight, chewing gum, sherbet
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### Fruit and Vegetables

All fruit and vegetables contain some potassium, but also contain useful vitamins, minerals and fibre. Aim to have five portions of suitable fruit and vegetables every day. The table above will give you guidance on this.

### What can I eat?

The following foods are low in potassium and phosphate:

<b>Meat</b>	Beef, Lamb, Pork, Chicken, Turkey
<b>Fish, fresh or frozen</b>	White fish (cod, plaice, coley, haddock etc) Oily fish (salmon, trout, tuna, boneless mackerel)
	Tofu, Quorn, soya, peas, green beans, lentils (see portion sizes page 1)
<b>Bread</b>	Have a variety: wholemeal, granary, white, pitta bread, rolls, chapatti, croissant
<b>Rice</b>	White, brown, basmati, risotto
<b>Pasta and noodles</b>	White or wholemeal
<b>Breakfast cereals</b>	Any sort without nuts or dried fruit or chocolate, for example, porridge, Ready Brek, Weetabix, Shreddies or

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	Rice Krispies (milk should be from allowance)
<b>Preserves</b>	Jam, marmalade, honey
<b>Fats and Oils</b>	Mono or polyunsaturated oils such as olive or rapeseed oil, corn oil or sunflower oil. Mono or polyunsaturated margarine such as Flora, Vitalite, supermarket own brands. Butter in moderation
<b>Cakes</b>	Plain cake, cake with butter cream, cream or jam, crumpets, scotch pancakes, jam doughnut, muffin, apple pies pastries, jam/lemon tarts (no dried fruit, chocolate or nuts)
<b>Biscuits</b>	Digestive, rich tea, custard cream, cream crackers, rice crackers, water biscuits, jam and cream biscuits
<b>Sweets</b>	Boiled sweets, fruit pastilles, gums and jellies, mints, chewing gum, plain Turkish delight and Sherbet
<b>Savoury snacks</b>	(These are salty – only have them occasionally) Skips, Wotsits, Quavers, Dorritos, rice crackers, wheat crunchies, toffee popcorn, ‘Snack a jacks’
<b>Drinks</b>	Count all drinks in fluid allowance Tea, fizzy drinks (except Coke or Pepsi), ordinary or diet squash, fruit and herbal teas, water, sparkling and flavoured water, Barley Cup
<b>Condiments</b>	Pepper, vinegar, mustard, herbs and spices, mint sauce, tartar sauce, horseradish sauce, salad cream, mayonnaise, Worcester sauce, chutney and pickle, cranberry sauce

If you are trying to lose weight reduce your intake of cake and biscuits.  
Be careful with choices if you are diabetic.

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### Summary

It is important that you eat well now you are on dialysis

**If you are not eating well** – it may be appropriate for you to take some nutritional supplements. These are available on prescription and your dietitian will arrange these with your GP following discussion with you.

#### Additional Comments / Notes:

### Blood Results

The combination of good dialysis and the care with food aims to control your blood results and fluid gains between dialysis sessions. If you would like a chart to explain, and follow your own blood levels ask the Dietitian. You can also check your levels monthly on the renal unit, or if you register with 'Patient View', you can keep an eye on your own results.

**Warning – Starfruit contains a chemical which can be extremely dangerous to people with kidney problems, they should be avoided.**

## Patient Information

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### Document History

Department:	Dietetics
Contact:	26151
Updated:	October 2020
Review:	October 2022
Version:	7.1
Reference:	HIC/LFT/847/09