

Nutrition and Dietetics

Renal Disease - Getting started on a low phosphate diet

What is phosphate

Phosphate is a mineral found in a wide range of foods. Phosphate combines with calcium in your bones to keep them strong.

Healthy kidneys can usually control the level of phosphate in your blood by filtering out the excess. If your kidneys are not working properly, phosphate levels tend to rise.

Normal range of blood phosphate levels

Not on dialysis:	0.9 – 1.5 mmol/L
When on dialysis:	1.1 – 1.7 mmol/L

Why it's important to avoid high phosphate levels

In the short term, a high level of phosphate in your blood can cause red sore eyes and itchy skin. In the long term, high levels of phosphate can cause weaker bones and joint pain, hardening of blood vessels. This increases the risk of cardiovascular disease.

How to control your phosphate levels

1. Reduce your intake of phosphate additives
2. Reduce your intake of high phosphate foods
3. Take your phosphate binders (if prescribed)



Step 1 - Reducing phosphate additives

Swapping from processed foods to fresh foods can make a difference:

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

If you have a poor appetite or are eating less than usual, please ask your nurse to telephone the Renal Dietitians **before** following this advice.

Food item	Foods high in phosphate additives - try to reduce	Lower phosphate alternatives
Meat / fish	Processed meat and poultry, including ham, sausages and tinned meats. Frozen fish/shellfish, including battered/crumbed fish. Meat and fish paste	Fresh meat and poultry Plain fresh fish Homemade fish cakes Tinned fish without bones
Cereals	Cheerio's, Coco Pops, Pop Tarts, instant porridge such as Ready Brek	Weetabix, porridge oats, Rice Krispies, Cornflakes, Shredded Wheat, Special K, Bran flakes, muesli (without nuts)
Cheese	Cheese slices/strips, Primula, cheese triangles	Hard cheese - max of...../ week Cream cheese, such as Philadelphia. Cottage or ricotta cheese.
Potatoes*	Frozen, chilled and dried potato products such as potato waffles, Smash, potato cakes	Fresh potatoes, homemade chips, wedges, roast potatoes (parboiled if on a low-potassium diet)

Patient Information

Bakery	Foods made with artificial raising agents such as baking powder and self-raising flour, including Scones, naan bread, crumpets, American muffins Cake/biscuit/pancake mixes. Pre-prepared baked puddings.	Foods made without raising agent or using yeast as a natural raising agent), such as shortbread, jam or treacle tart, meringue. Croissant, English muffin, bagels,
Drinks	Dark coloured soft drinks such as Cola, Pepsi, Dr Pepper, Oasis, iced tea. Hot chocolate, Ovaltine, Horlicks, powdered milk (including instant latte or cappuccino), milkshakes, drinking yoghurt, beer and 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.

* Please note these foods are high in potassium

Step 2 - Reducing foods naturally high in phosphate

Some foods are naturally high in phosphate, including:

- Chocolate, fudge, toffee, caramels, Indian sweets and coconut
- Indian snacks, e.g., Bombay mix
- Twiglets

Suitable alternatives include:

- Boiled sweets, fruit pastilles/gums, marshmallows, Turkish Delight
- Plain popcorn, potato hoops*, bread sticks, corn snacks.

Step 3 - Phosphate binders

You may be prescribed tablets called phosphate binders. Phosphate binders, along with a low phosphate diet, help to reduce the levels of phosphate in your blood.

Phosphate binders work by soaking up some phosphate from the food in your stomach. This means the phosphate is not absorbed in your gut. Ask your dietitian or doctor for further information about these.

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

Produced by Coventry Renal Dietitians, University Hospitals Coventry & Warwickshire NHS Trust.

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