Patient Information

University Hospitals Coventry and Warwickshire NHS Trust

Nutrition and Dietetics

Kidney disease - Getting started on a low phosphate diet

What is phosphate

Phosphate is a mineral found in many foods. Phosphate combines with calcium in your bones to help keep them strong. Healthy kidneys usually control the level of phosphate in your blood by removing extra amounts. If your kidneys are not working properly, phosphate levels can 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, high phosphate levels in your blood can cause red, sore eyes and itchy skin. In the long term, high levels of phosphate can lead to weaker bones, joint pain and hardening of blood vessels. This increases the risk of heart and circulation (cardiovascular) disease.

How to control your phosphate levels

There are 3 steps you can take to help control your phosphate levels.

Step 1: Reduce your intake of artificial phosphate in additives

Step 2: Reduce your intake of naturally high phosphate foods

Step 3: Take your phosphate binders (if prescribed)

This diet sheet explains Step 1, which you can start before seeing a dietitian. If you find Step 1 difficult, ask your dietitian or renal team about starting with Step 2 or 3 instead.

Step 1 - Reducing phosphate additives

Manufacturers add phosphate additives to foods for a variety of reasons, such as keeping foods moist, improving taste or texture, and making it last longer to extend their shelf life.

Did you know:

- Up to 50% of the phosphate we eat can come from these additives.
- Your body absorbs about 90% of phosphate from additives, compared to only 40 –60% of phosphate naturally found in foods.

What can you do?

- Cooking meals from fresh can make a big difference. Processed meat can contain up to 70% more phosphate than fresh meat.
- Reducing processed foods also lowers your salt intake. This can help you feel less thirsty, making any fluid restrictions easier to follow. It may also help to improve your blood pressure.

How can you identify foods with phosphate additives?

Food manufacturers do not have to state phosphate content on the packaging. However, you can check the ingredients list for either the E number or the name. The additives that contribute the most are:

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

*A handy wallet-size card with this list is available to help when shopping. If you are interested, please ask your renal dietitian.

Here are some more ideas of the type of foods that are likely to contain phosphate additives and some alternatives to avoid them:

Food item	**High in phosphate additives - try to reduce**	**Lower in phosphate alternatives – try to have more often**
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 or tinned fish (without skin and bones). Homemade fish cakes.
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 (these can also be high in potassium)	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)
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. English muffin, bagels, croissant.
Drinks	Dark coloured soft drinks such as Cola, Pepsi, Dr Pepper, Oasis, iced tea. Hot chocolate, Ovaltine,	Lemonade, Fanta, ginger beer, Lilt, Ribena, Iron Bru, sparkling water, tea, soda water, diluted fruit squash. Milk

	Horlicks, powdered milk (including instant latte or cappuccino), milkshakes, drinking yoghurt, beer and wine.	within ½ pint (250ml) allowance. spirits.

Adapted original from Central Manchester Foundation Trust Renal Dietitians.

Warning - Listeriosis

Avoid ready-to-eat smoked or cured fish products such as smoked salmon or gravlax because of an increased risk of listeriosis.

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

More information on how to reduce the risk of Listeriosis can be found at:

Listeriosis - NHS: www.nhs.uk/conditions/listeriosis/

Listeria - Food Standards Agency: www.food.gov.uk/listeria

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

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

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