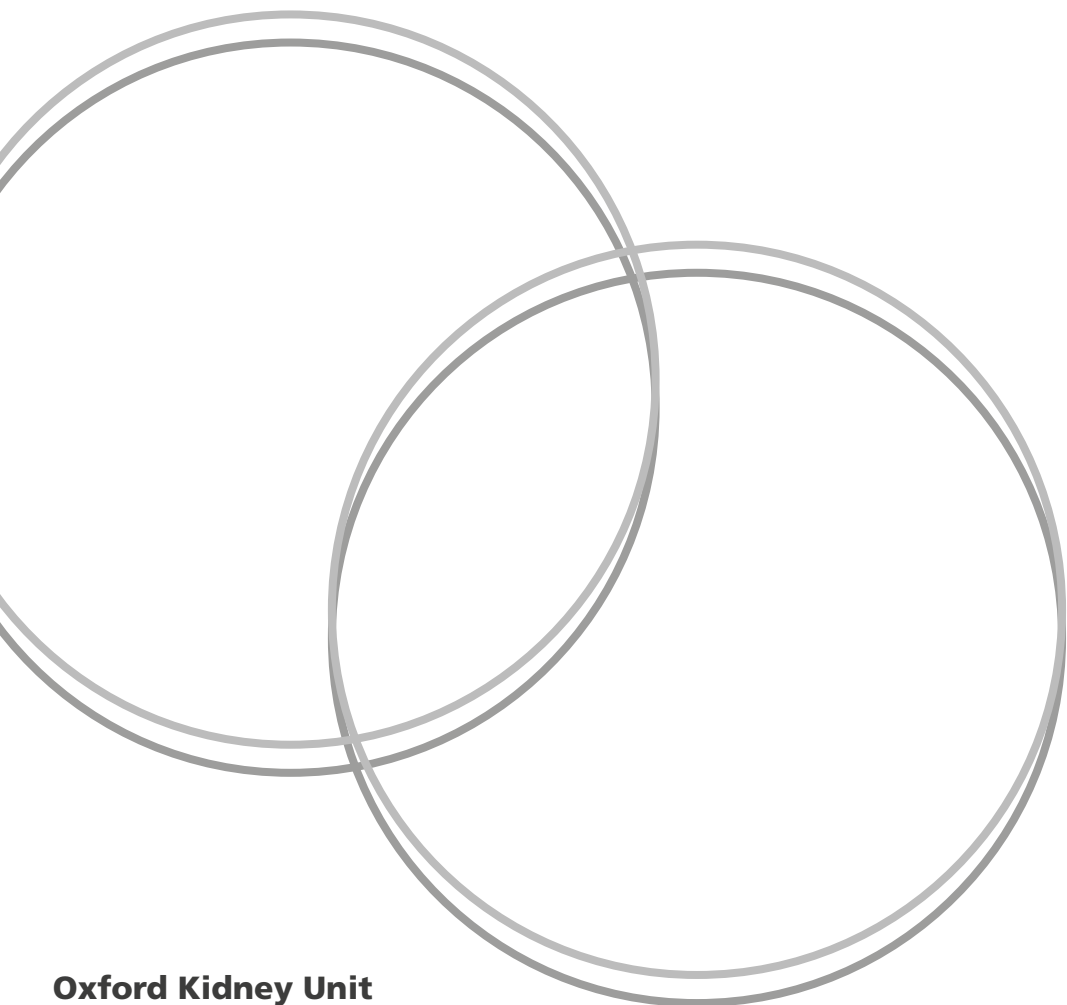


Phosphate: Reducing the intake in your diet

**Information for people
with kidney disease**



What is phosphate?

Phosphate is a mineral naturally found in many foods in your diet. It is important for bone health.

Why is my phosphate level high?

Phosphate levels in the blood can increase when the kidneys are not working properly.

We measure phosphate by taking a small amount of blood when we measure your kidney function. Target phosphate levels are:

- 0.9 to 1.5mmol/L for someone with chronic kidney disease
- 1.1 to 1.7mmol/L for someone on haemodialysis or peritoneal dialysis.

The set targets may vary for different people. Your dietitian, bone mineral nurse or renal doctor will let you know what you should be aiming for.

What happens if my phosphate level is too high?

High blood phosphate levels may cause red eyes and itchy skin.

If your phosphate levels remain high, this can cause calcium to be removed from your bones. This can lead to:

- brittle bones that are more likely to break
- aching joints and muscles
- hardened blood vessels, which can increase your risk of heart disease and circulation problems.

What can I do to control my phosphate level?

The first step in controlling your phosphate level is to follow a low phosphate diet. You may also be prescribed a tablet called a phosphate binder.

What is a low phosphate diet?

This diet sheet will give you information to help you follow a lower phosphate diet. To achieve this, aim to choose more foods from the 'lower phosphate alternatives' column and fewer from the 'high phosphate foods' column.

It is also a good idea to choose unprocessed foods and cook from fresh when possible. This will ensure your food has fewer phosphate additives. To help you to avoid these and make better choices, see the additives section of this booklet (page 7).

Foods high in phosphate	Lower phosphate alternatives
Cereals	
<p>Those containing bran e.g. All-bran.</p> <p>Those containing nuts, e.g. Crunchy Nut Cornflakes, granola and muesli.</p> <p>Those containing chocolate, e.g. Coco Pops.</p>	<p>Bran flakes, Cheerios, cornflakes, Weetabix, porridge oats, Rice Krispies, Shredded Wheat, Shreddies, Special K (original).</p>
Carbohydrates	
<p>Baked goods with phosphate-containing raising agents, e.g. crumpets, muffins, naan bread, scones and tortillas.</p>	<p>Baked goods without phosphate-containing raising agents, e.g. croissants, English muffins, hot cross buns.</p> <p>Bread, chapatti, pitta bread, bagel.</p> <p>Noodles, pasta, potatoes, rice.</p>
Fish and seafood	
<p>Fish with edible bones, such as mackerel, pilchards and sardines.</p> <p>Whitebait.</p> <p>Kippers.</p> <p>Shellfish, e.g. crab, cray fish, lobster, oysters, mussels and prawns.</p>	<p>Boneless tinned fish, e.g. salmon and tuna.</p> <p>Fresh, unprocessed fish, e.g. cod, haddock, salmon and tuna.</p> <p>Fish fingers.</p> <p>Seafood sticks.</p>

Foods high in phosphate	Lower phosphate alternatives
Meat	
<p>Processed meats, e.g. bacon, pepperoni and reformed ham.</p> <p>Processed meat products, e.g. burgers, chicken nuggets, meat pies and sausages.</p> <p>Tinned meat, e.g. corned beef, Spam.</p> <p>Offal, e.g. kidney, liver and pâté.</p>	<p>Fresh, unprocessed meat, e.g. beef, chicken, duck, pork, lamb and turkey.</p>
Plant based protein	
<p>Nuts and seeds.</p> <p>Processed plant based products e.g. vegetarian/vegan sausage, nuggets, no-pulled pork etc.</p>	<p>Tofu, Quorn, textured soya protein.</p> <p>Beans and pulses, e.g. lentils, kidney beans and chickpeas.</p>
Milk and plant based alternatives	
<p>Cows milk (drink less than 250ml or 1/2 pint a day).</p> <p>Condensed/evaporated milk.</p> <p>Milk powders, e.g. Marvel.</p>	<p>Organic dairy milk alternatives, e.g. rice, oat, almond or soya milk.</p> <p>Single and double cream.</p>
Milky puddings	
<p>Milky puddings, e.g. custard, ice-cream and yogurts. These should be counted towards your milk allowance.</p>	<p>Puddings, e.g. crème caramel and mousse.</p>
Cheese	
<p>Hard cheese, e.g. Halloumi, Cheddar, Edam, Emmental, paneer, processed smoked cheese and Red Leicester.</p> <p>Processed cheese, e.g. Dairylea, Laughing Cow and Primula.</p>	<p>Soft/cream cheeses, e.g. Philadelphia, cottage cheese, mascapone and quark.</p> <p>Brie, camembert, mozzarella, ricotta and feta.</p>

Foods high in phosphate	Lower phosphate alternatives
Eggs	
Eggs are a good source of protein and can be eaten with no restrictions.	
Fruit and vegetables	
All fruit and vegetables are naturally low in phosphate. You should aim to have at least 5 portions a day.	
Savoury snacks	
Nuts, seeds, Bombay mix.	Bread sticks, corn snacks, oat cakes, rice cakes and plain popcorn.
Sweet snacks	
<p>Solid chocolate bars, e.g. Cadburys milk chocolate bar, Galaxy bar and Yorkie.</p> <p>Baked goods with phosphate-containing raising agents, e.g. American style muffins, custard tarts, sponge cakes and waffles.</p> <p>Marzipan.</p>	<p>Thinly coated chocolate bars, e.g. Kit-Kat and chocolate fingers.</p> <p>Plain biscuits, e.g. digestives, rich tea and shortbread.</p> <p>Cream or jam filled biscuits.</p> <p>Baked goods without phosphate-containing raising agents, e.g. cream filled pastries, Danish pastries, flapjacks, home-made pancakes, Jaffa cakes, doughnuts, jam tarts, meringue and teacakes.</p> <p>Boiled sweets, chewing gum, jellies and mints.</p> <p>Sorbet.</p>
Spreads and condiments	
<p>Peanut butter.</p> <p>Yeast extract, e.g. Marmite and Vegemite.</p>	<p>Jam, marmalade, lemon curd, hummus.</p> <p>Fresh and dried herbs and spices.</p>

Foods high in phosphate	Lower phosphate alternatives
Beverages	
<p>High phosphate-containing dark coloured fizzy drinks, e.g. Cola, Dr Pepper and Pepsi.</p> <p>Drinking chocolate.</p> <p>Malted drinks, e.g. Horlicks or Ovaltine.</p> <p>Milkshakes.</p> <p>Ale, bitter, cider, lager and stout.</p> <p>Wine.</p>	<p>Low phosphate-containing dark coloured fizzy drinks, e.g. Green Cola and Fever Tree Cola.</p> <p>Light coloured fizzy drinks, e.g. Fanta, lemonade and orangeade.</p> <p>Water, including flavoured water.</p> <p>Black tea, green tea, chamomile tea and coffee.</p> <p>Fruit squashes.</p> <p>Spirits, e.g. vodka, gin, whiskey.</p>
Sandwich fillings	
<p>Processed meat slices.</p> <p>Hard cheeses such as cheddar cheese (see cheese section).</p> <p>Prawn.</p> <p>Sausage sandwich.</p> <p>Bacon sandwich.</p>	<p>Soft cheeses such as cream cheese (see cheese section).</p> <p>Egg.</p> <p>Falafel.</p> <p>Fresh cold meat slices.</p> <p>Hummus.</p> <p>Mixed bean.</p> <p>Tuna (in spring water).</p> <p>Roasted vegetable.</p> <p>Salmon.</p>

Phosphate additives

Food manufacturers often use additives to help preserve food and to enhance its flavour. These are typically found in ready meals, processed foods and dark coloured fizzy drinks. The phosphorus added to food is completely absorbed by the body, so can contribute greatly to your blood phosphate levels.

All additives used in packaged food will be named in the ingredients list. Those to avoid include:

E number	Phosphate additive name
E338	Phosphoric acid
E339	Sodium phosphate
E340	Potassium phosphate
E341	Calcium phosphate
E343	Magnesium phosphate
E450	Di- phosphates
E451	Tri- phosphates
E452	Poly- phosphates

Phosphate binders

To reduce the amount of phosphate you absorb from your food you may have been prescribed a medicine called a phosphate binder.

Phosphate binders work by binding (attaching) to some of the phosphate in foods. This will help to reduce the amount of phosphate absorbed into your blood stream.

A list of phosphate binders and how to take them is shown below.

Phosphate binder	How to take it
Calcichew (calcium carbonate).	Chew thoroughly 10 to 15 minutes before or immediately before food.
Renacet (calcium acetate).	Swallow whole after the first 2 to 3 mouthfuls of food.
Phosex (calcium acetate).	
Osvaren (calcium acetate and magnesium carbonate).	
Sevelamer hydrochloride.	
Sevelamer carbonate.	
Renvela powder (sevelamer carbonate).	Dissolve in 60ml of water and take after the first 2 to 3 mouthfuls of food.
Fosrenol tablets (lanthanum carbonate tablets).	Chew thoroughly towards the end/ immediately after each meal.
Fosrenol powder (lanthanum carbonate).	Mix with a small amount of food and eat immediately.
Velphoro tablets (sucroferric oxyhydroxide).	Chew thoroughly after the first 2 to 3 mouthfuls.

How many phosphate binders should I take?

You should follow the dose that you have been prescribed. Your dietitian can advise on how best to match your phosphate binders to your meal pattern, as well as which snacks require a phosphate binder.

What happens if I forget to take my phosphate binder?

For best results, phosphate binders should be taken as instructed. However, if you do forget to take them at the correct time, you can still take them during the meal or immediately after a meal to have some effect. If you remember at a time later than this, miss that dose and try to remember for your next meal.

Tips for remembering to take your phosphate binders

To help you remember your phosphate binders try setting an alarm on your mobile phone to go off around meal times. Keep a small pot of phosphate binders in your bag, so you have a supply at all times. If you take insulin with your meals, you could keep your phosphate binders in the same place as your insulin, to remind you to take them when eating.

Problems with your phosphate binders

A very small number of people find that they have side effects from their phosphate binder. If you notice any side effects, please let your renal dietitian or nurse know, as they may be able to give you advice about an alternative that is more suitable for you.

Certain phosphate binders can only be prescribed and supplied by the hospital. Therefore, please contact Oxford Renal Pharmacy Team to order your further supply if your phosphate binder needs to be prescribed by the hospital. Please ensure these are ordered before you run out.

If your GP or pharmacy have difficulty ordering your prescribed phosphate binders, please let a member of the renal team know, as they may be able to help with this or provide an alternative for you.

Contacts

Please be aware we can only provide advice or information if we care for you under the Oxford Kidney or Transplant Unit (Churchill Hospital). This includes the network units at Banbury, High Wycombe, Milton Keynes, Stoke Mandeville, Swindon (Great Western Hospital) and The Whitehouse Dialysis Unit.

If you do not attend these sites, please contact your local care team for support.

Renal Dietitians

Telephone: 01865 225 061

Please leave a message on the answerphone and one of the team will call you back.

Renal Pharmacists

Telephone: 01865 226 105

Please leave a message on the answerphone and a member of the team will call you back

Email: oxfordrenalpharmacists@ouh.nhs.uk

Useful websites

Oxford Kidney Unit

Lots of information about the Oxford Kidney Unit for patients and carers.

Website: www.ouh.nhs.uk/oku

UK Kidney Association

Patient information leaflets and advice: www.ukkidney.org/patients/information-resources/patient-information-leaflets

Kidney Patient Guide

Information for patients with kidney failure and those who care for them.

Website: www.kidneypatientguide.org.uk

Kidney Care UK

A charity which has lots of practical support and information for people with kidney disease.

Website: www.kidneycareuk.org

Six Counties Kidney Patients Association

The SCKPA is run for patients by patients or family members.

They offer support to people suffering from kidney disease or who are on dialysis. They work closely with the Oxford Kidney Unit and have branches in Oxfordshire, Northamptonshire, Buckinghamshire, and Milton Keynes, and parts of Wiltshire, Gloucestershire and Berkshire.

Website: www.sixcountieskpa.org.uk

National Kidney Federation

A charity which has lots of practical support and information for people with kidney disease.

Website: www.kidney.org.uk

OUH Patient Portal - Health for Me

Please ask a member of the renal team to sign you up to the patient portal.

Website: www.ouh.nhs.uk/patient-guide/patient-portal

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

Author: Chen Isaac Tseng, Renal Pharmacist Team and Renal Dietitian Team.
May 2024
Review: May 2027
Oxford University Hospitals NHS Foundation Trust
www.ouh.nhs.uk/information



Making a difference across our hospitals

charity@ouh.nhs.uk | 01865 743 444 | hospitalcharity.co.uk

OXFORD HOSPITALS CHARITY (REGISTERED CHARITY NUMBER 1175809)

