

Managing Phosphorus for Kidney Health

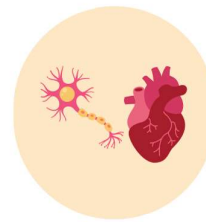
Phosphorus is a mineral found in food and your body. It is mostly stored in your teeth and bones. Your body uses phosphorus to:



Form strong bones and teeth



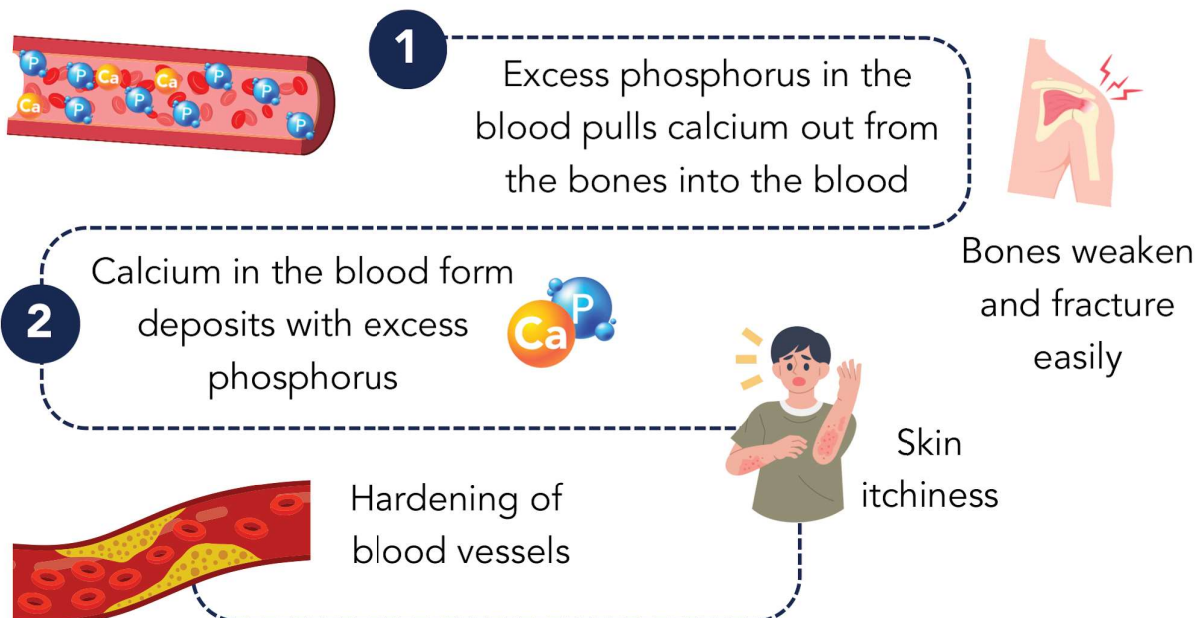
Create energy and move muscles



Ensure proper function of your nerves and heart

How does kidney disease affect phosphorus?

If your kidneys are not working properly, phosphorus can build up in your blood, affecting your eyes, skin, bones, lungs and heart. Your heart disease risk will be higher if your blood phosphorus is persistently high.



What can I do to manage my blood phosphorus levels?

The first step is to limit food and drinks that are high in phosphorus. You DO NOT need to completely cut phosphorus out of your diet. Consuming phosphorus in moderation is more important for maintaining good health.



If your phosphorus levels remain high after diet modification, your doctor may prescribe a medication called phosphate binder to take with your meals.



What are the food sources of phosphorus?

Almost all the food you eat contain phosphorus. There are two types of phosphorus in our diet:

Organic phosphorus	Inorganic phosphorus
Found <u>naturally</u> in protein-rich food such as meat, fish, beans, wholegrains and dairy products.	<u>Added</u> to food as preservative to enhance food stability, taste and color. It is also called <u>phosphate additives</u> .

Inorganic phosphorus increases your phosphorus blood levels more than organic phosphorus

<p>Beans, lentils, nuts, seeds and wholegrains</p>	<p>Dairy products</p>	<p>Meat, poultry, fish and seafood</p>	<p>Phosphate additives</p>
<p>Absorption</p>	<p>Absorption</p>	<p>Absorption</p>	<p>Absorption</p>

How to read food labels for PHOSPHATE ADDITIVES?

Phosphorus is not always listed on the nutrition labels for most products on the market. The best way to find out is by reading the ingredient list.

You can look for any ingredient that has the letter "PHOS" in it and avoid choosing those products. Some of the most common food additives that contain phosphorus are:

- Dicalcium phosphate
- Disodium phosphate
- Monosodium phosphate
- Phosphoric acid
- Pyrophosphate
- Sodium hexameta-phosphate

Can you find the phosphate additive in this ingredient list?



Enriched flour, peanut butter, vegetable oil, dextrose, sugar, salt, leavening (sodium bicarbonate, monocalcium phosphate, ammonium bicarbonate), corn syrup, deproteinized dairy whey, cheddar cheese

Hunting for the "E" Number

Besides checking the ingredient list for "PHOS", some phosphate additives are labelled as "E" numbers instead. Here is the list of "E" numbers that you should look out for during your grocery shopping!

Can you locate the "E" numbers in this ingredient list?

Chicken, Chinese Angelica, Szechwan Lovage Rhizome, Wolfberry Fruit, Longan Aril, Pepper, Spices, Ginseng, Salt, Permitted Food Enhancers (E621, E631, E627)























Phosphate Additives Labelled With "E" Numbers

- E338 - 343
- E442
- E450 - 454
- E541
- E626 - 635



What are some food high in INORGANIC PHOSPHORUS?

These foods are commonly added with phosphate additives and should be limited as much as possible.

Food categories	Eat only occasionally				
<p>Processed meat, fish, seafood or meat substitutes</p>	 Dried cuttlefish	 Dried shrimp	 Dried fish (anchovies, salted fish)		
	 Luncheon meat	 Sausage	 Fish ball	 Vegetarian meat substitutes	
<p>Processed cheeses</p>	 Sliced cheeses	 Nacho cheese sauce	 Macaroni and cheese (box/ powder)		
<p>Shelf stable prepared foods</p>	 Instant noodles	 Instant oatmeal	 Canned beans	 Canned soup	 Canned sardine
<p>Frozen/ refrigerated pre-packaged food and fast food</p>	 Breaded products	 Nuggets	 French fries		
	 Burger	 Ready/ Frozen meals			

**Commercial
desserts**



Cookies



Cakes



Chocolate



Pies



Ice-cream

**Sauces,
condiments
and spreads**



Instant sauces, salad dressings
and commercial marinades



Peanut
butter



Yeast/ Meat extracts
(like Bovril©, Marmite©)

***Some
beverages**



Carbonated soft drinks
(particularly those
containing cola)



*Some flavoured
waters





Drinks added with
condensed/ evaporated milk






Chocolate and
malted beverages

*Phosphorus content differs between different
flavours of the same beverage. Always check the
ingredient list to identify any phosphate additives.

What are some food high in ORGANIC PHOSPHORUS?

Food categories	<u>How much can I consume?</u>
<p>Wholegrains</p> <p>(Brown rice, Oats, Barley, Chapati, Wholewheat, Wholegrain bread)</p>	<p>Wholegrains <u>ARE PREFERRED</u> to the refined versions (like white rice and white bread).</p> <p>Wholegrains are rich in fiber and have low phosphorus absorption.</p> <p>You can include these foods once or twice a day as part of a healthy diet.</p> <div style="text-align: center;">  </div>
<p>*Dairy and milk alternatives</p> <p>(Milk, Soymilk, Yogurt, *Cheese)</p>	<p><u>AVOID USING TOO MUCH DAIRY.</u> These foods are higher in phosphorus than other animal protein.</p> <p>If you have lower kidney function or are on dialysis, you may:</p> <ul style="list-style-type: none"> • Limit milk, soymilk or yogurt to ½ to 1 cup per day • Limit cheese to 30g (the size of 3 dices) or 1 slice, 1 to 2 times a week <div style="text-align: right;">  </div> <p>*Avoid aged cheeses as they have more phosphorus and sodium than fresh cheese.</p>

<p>Plant protein</p> <p>(Tofu, Tempeh, Beans, Lentils, *Nuts and Seeds)</p>	<p>Plant protein is a <u>GOOD SOURCE</u> of protein with low phosphorus absorption.</p> <p>You can replace meat, fish or poultry with tofu, tempeh, beans or lentils.</p>  <p>*Nuts and seeds are very high in phosphorus and potassium. You may have to avoid or limit them based on your blood phosphorus and potassium levels.</p>
<p>Animal protein</p> <p>(Fresh lean meat, Poultry, Fish, Seafood & *Eggs)</p>	<p>You can include animal protein in your <u>DAILY DIET</u>.</p> <p>You may eat a <u>SMALLER PORTION</u> of these food, if avoiding food high in phosphate additives is not enough to bring your phosphorus level down.</p>  <p>*Egg whites can be eaten more freely as phosphorus is mostly found in the egg yolk.</p>
<p>Organ meats</p> <p>(Heart, Liver, Lung, Stomach)</p>	<p>Organ meats are high in phosphorus yet lower in nutritional value, so it is best to <u>LIMIT</u> them.</p> 

Edible bones or cartilage from fish/ seafood, poultry and meat

(Chicken feet, Bone marrow, Soft shell crab, Ikan selar, Fresh sardine, Unagi)

Bones/ cartilage contain a lot of phosphorus, so it is best to LIMIT THEM AND REMOVE EDIBLE BONES before eating.



The recommended amount of food will be different for everyone. It depends on the level of kidney function, blood test results, body size and medical history. Your dietitian will work with you to figure out the portion that is best for you!

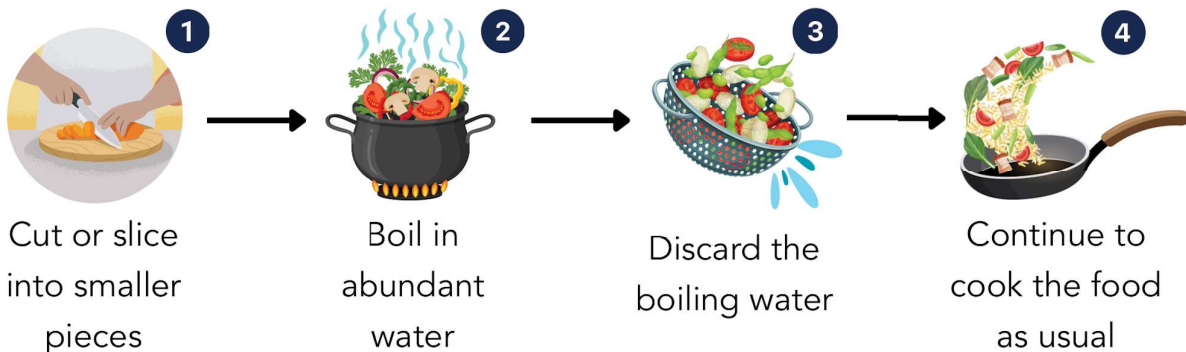


What can I do to lower the phosphorus content of food?

Boiling the food for 30 minutes reduces the phosphorus content by about 50%. Other cooking methods like poaching and stewing also help to reduce phosphorus content.



However, you should still limit your intake of gravy or soup as they contain phosphorus.



Do you know?

Soaking food in large amount of hot water for 5-10 minutes can also reduce its phosphorus content.

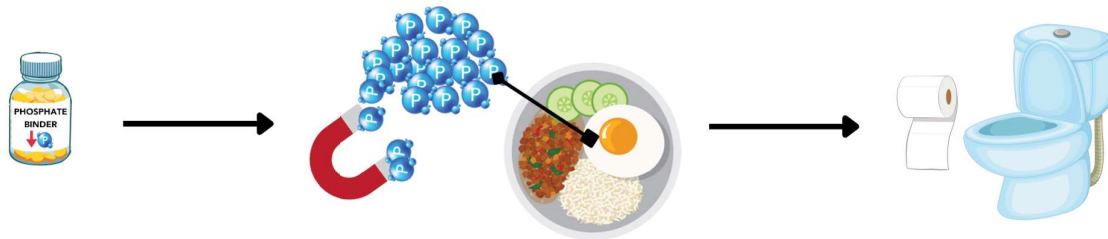


What is phosphate binder and why might I need it?

To reduce the amount of phosphorus absorbed from your food, phosphate binders may be prescribed (e.g. Calcium Carbonate, Calcium Acetate, Lanthanum or Sevelamer).

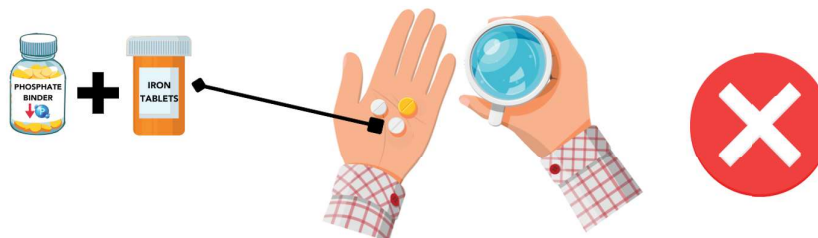


Phosphate binders bind with some of the phosphorus in your food like a magnet or sponge. The phosphorus is then passed out of your body with your stool.



Your doctor will adjust the dose that you need. You should take phosphate binders with or immediately after meals and snacks.

Note: Do not take binders at the same time as iron tablets as it may interfere with the absorption of iron.



Remember to bring along your phosphate binders when eating out!

3 ways you can reduce the amount of phosphorus you eat:

1. Choose fresh ingredients over processed ones
2. Read food labels for sources of phosphate additives
3. Take your phosphate binders prescribed by your medical team at each meal

Contributed by Nutrition & Dietetics Service, Allied Health Services

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