

Phosphorus and Your Kidney Diet

Phosphorus is a mineral your body needs to work properly. Healthy kidneys remove the phosphorus your body doesn't need. If your kidneys are not working well, the extra phosphorus builds up in your blood.

When your blood phosphorus levels are too high, eating fewer foods that are higher in phosphorus can help lower your levels.

Phosphorus and your health

When kidney disease makes your blood phosphorus levels rise, you can lose calcium from your bones. This may cause itchy skin, sore joints, and weak bones.

If you have high blood phosphorus levels over a long time, your risk of heart disease is higher.

What can you do?

Below are ways you can keep your blood phosphorus levels within a healthy range:

- Limit foods that are higher in phosphorus (phosphate).
- Read ingredient lists on food packages for phosphorus hidden in foods (see next column).
- Make most of your meals at home. Restaurant food, fast food, and take-out meals often have hidden phosphorus.
- Take the right amount of phosphorus binders with meals and snacks. Talk to your dietitian or doctor about the number of binders that are right for you.
- If you're on dialysis, go to all dialysis treatments and stay for the entire treatment. Dialysis removes some phosphorus from your blood.

Phosphorus hidden in foods

Some packaged foods have *phosphate additives*, which contain phosphorus. These additives are used to improve the taste and appearance of a food. Your body absorbs phosphorus from additives more easily than phosphorus that is naturally in food.

Limit or avoid foods with phosphate additives:

- Read the ingredient list on food packages **every time you shop**. This is the best way to know if the food has phosphate additives. Look for the words *phosphate* or *phosphoric* in the ingredient list.

Examples of phosphate additives:

- disodium phosphate
- hexametaphosphate
- phosphoric acid
- tri-calcium phosphate

Example ingredient list for cola:

Ingredients: Carbonated water, Fructose, Caramel colour, **Phosphoric acid**, Natural flavours, Caffeine

• Watch for phosphate additives in these foods and drinks:

- hot dogs, chicken fingers
- deli meats, sausages, ham
- processed cheese
- sauces
- yogurts
- soft drinks, iced tea
- crystal drinks, flavoured waters
- refrigerated or frozen prepared foods
- store-bought mixes (muffin, pancake, pudding, boxed pastas, potatoes)

What are phosphorus binders?



Phosphorus binders are pills that act like a sponge. They soak up phosphorus from your food and stop it from being absorbed into your blood. You take them with food. Common phosphorus binders are calcium carbonate (Tums[®]) and sevelamer hydrochloride (Renagel[®])

There are different types and strengths of phosphorus binders. Your doctor or dietitian will talk to you about whether phosphorus binders would help you, which binders to take, and how much.

Limiting the phosphorus you eat

The food lists below can help you choose foods to keep your phosphorus blood levels healthy.

Grain foods	
Choose	
<ul style="list-style-type: none"> • Barley (pearled or pot) • Bread: white, French, Italian, cracked wheat, light rye, sourdough, or 60% whole wheat • Cereals, cold: Corn Bran[®], Cornflakes[®], Puffed Rice[®], Puffed Wheat[®], Rice Krispies[®], Special K[®] • Crackers: soda crackers, Melba, Wheat Thins[®], unsalted • Cream of Wheat[®] (instant),★corn grits • Digestive and arrowroot biscuits, graham wafers • Flour: white, rice, light rye 	<ul style="list-style-type: none"> • Grains: bulger, cracked wheat, quinoa, buckwheat • Muffins: homemade plain, fruit, or oatmeal • Pasta, white, or couscous • Pita bread, wraps, chapati and roti, white, or 60% whole wheat (if available) • Popcorn, unsalted • Pretzels, unsalted (10 twists) • Rice or rice noodles, white • Tortilla chips, unsalted • Tortillas, corn
Limit	
<ul style="list-style-type: none"> • Breads, whole grain (100% whole wheat, multigrain, dark rye) • Cereals, cold: whole grain cereals such as All Bran[®], Bran Flakes[®], Fiber One[®], Mini Wheats[®], Total[®], Oat Square[®], Oatmeal Crisp[®], Shreddies[®], Shredded Wheat[®], Total[®] • Cereal, cold: All Bran Buds[®], ¼ cup (75 mL) • Cereal, hot: oat bran • Flour: whole wheat, dark rye, bran, wheat germ 	<ul style="list-style-type: none"> • Homemade pancakes, waffles, biscuits • Muffins, bran and oat bran • Oats, rolled, ¾ cup (175 mL) cooked per day • Pasta, whole wheat • Pita bread, wraps, chapati, whole grain • Rice, brown or wild • Roti, chickpea or whole grain <p>Speak to your dietitian about whether you should eat whole grains.</p>
Avoid	
<ul style="list-style-type: none"> • Baking mixes (biscuits, pancakes, waffles and muffins), and frozen baked products (pancakes and waffles)★ • Cereals, cold: Alpha Bits[®], Cheerios[®], Crispix[®], Life[®], Vector Meal Replacement[®]★ 	<ul style="list-style-type: none"> • Cereals, hot: Cream of Wheat[®] (stove top),★ Red River[®], Sunny Boy[®] • Granola and cereal made with nuts, seeds, or dried fruit • Macaroni and cheese mixes★

★ = Foods that may contain phosphate additives. Check the ingredient list every time you shop. See the *Phosphorus hidden in foods* section on page 1.

Protein foods

Beans, lentils, meat, fish, nuts, and seeds

If you follow a vegetarian or vegan eating style, speak with your dietitian about how much beans, lentils, and tofu are right for you.

Choose

- Beef, veal
- Chicken, turkey, duck
- Eggs
- Fish, some shellfish (blue crab, lobster, shrimp)
- Lamb or mutton
- Pork
- Canned tuna and salmon (bones removed)
- Wild meat (moose, caribou, deer, elk)

Limit

- Beans or lentils, dried, cooked: baked beans, pork and beans, split peas, black beans, chickpeas, black gram, kidney beans, soybeans, ½ cup (125 mL) once a day
- Nuts/seeds or nut/seed butter, 2 Tbsp (30 mL) a day; or up to ½ cup (125 mL) in a recipe
- Tofu, ½ cup (125 mL) once a day

Avoid

- Fish, canned with bones
- Fresh meats that have had phosphate additives or sodium added or injected (enhanced meats)★
- Organ meats such as liver, heart, and kidney
- Oysters, clams, sardines
- Processed meats: bacon, sausage, ham, hot dogs, salami, pepperoni, bologna, corned beef, canned meat★
- Restructured meat: chicken (fingers, nuggets, burgers), turkey roll, vegetarian meat substitutes★
- Seeds (pumpkin, sunflower)

Milk, dairy, and soy foods

Choose (Limit to 2 servings a day)

- Cottage cheese, no added salt, ½ cup (125 mL)
 - Custard, ½ cup (125 mL)
 - Ice cream, ½ cup (125 mL)
 - Milk or cream: skim, 1%, 2%, whole, prepared powdered milk, cream, ½ cup (125 mL)
 - Paneer, 1 oz (30 g)
 - Pudding, homemade, ½ cup (125 mL)
 - Soy beverage, ½ cup (125 mL)
 - Yogurt, ½ cup (125 mL)★
- Milk in soups and puddings count as part of your daily phosphorus intake.

Limit

- Cheese: hard, 1 oz (30 grams)

Avoid

- Cheese slices, processed★
- Cheese spreads, processed★
- Non-dairy coffee whiteners, liquid, or powder★
- Milk, chocolate flavoured
- Milk, condensed or evaporated
- Malted drinks: Ovaltine®, Bournvita®, Horlicks®★
- Pudding, instant; store-bought pudding cups★

★ = Foods that may contain phosphate additives. Check the ingredient list every time you shop.
See the *Phosphorus hidden in foods* section on page 1.

Other Foods

Choose

- | | |
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| <ul style="list-style-type: none"> • Artificial sweeteners • Cream cheese • Jam, jelly • Rice beverage, not fortified • Sherbet | <ul style="list-style-type: none"> • Soft drinks, non-cola: 7-Up[®], ginger ale, Sprite[®], lemonade, some root beers, grape, orange, lemon-lime, or cream soda; check the ingredient list★ • Sugar, white or brown, honey • Sweets: hard candies, marshmallows, jelly beans |
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Limit

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| <ul style="list-style-type: none"> • Alcohol, as advised by your doctor • Caramels, 5 squares a day • Chocolate, 15 grams a day (size of a mini-chocolate bar) | <ul style="list-style-type: none"> • Fruit, dried: figs, raisins, dates, and coconut • Sour cream or whipping cream, 1 Tbsp (15 mL) |
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Avoid

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| <ul style="list-style-type: none"> • Beer, stout • Cola and diet cola drinks: Coca-Cola[®], Pepsi[®], Dr. Pepper[®], Diet Coke[®], Diet Pepsi[®]★ • Gelatin dessert powder (for example, Jell-O[®])★ • Hot chocolate mix, cocoa | <ul style="list-style-type: none"> • Pizza that has processed meats as topping • Some flavoured waters, iced teas, coffee drinks, flavouring crystals, carbonated beverages; check the ingredient list★ |
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★ = Foods that may contain phosphate additives. Check the ingredient list every time you shop. See the *Phosphorus hidden in foods* section on page 1.

Do you make choices to help manage your phosphorus levels?

Answer the questions below to help you decide if you're making nutrition and lifestyle choices to help manage your phosphorus.

Every *Yes* answer is a way that you're managing your phosphorus levels. If you answer *No* to any of the questions, and you are ready to make some changes, use the tips in this handout.

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| 1. Do you try to avoid processed and packaged foods? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. Do you make your meals at home most of the time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. Do you read ingredient lists on food packages for phosphorus hidden in foods? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. Do you take the right amount of phosphorus binders with meals and snacks (if prescribed)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 5. If you're on dialysis, do you go to all your dialysis treatments and stay for the entire treatment? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |