

Kidney Disease and Phosphorus

What is phosphorus?

Phosphorus is a mineral found in many foods. After your body digests food, the phosphorus is absorbed into the blood. The blood then takes it to your bones to make them strong along with calcium. Extra phosphorus is filtered out of the body by healthy kidneys.

What happens when kidneys slow down?

As kidneys slow down, they are not able to filter out the extra phosphorus. This makes the amount of phosphorus in the blood too high.

What is the recommended amount of phosphorus in blood?

This depends on how much of your kidneys are working.

- If you have slow kidneys and you are not having dialysis treatments, you need a tight control of phosphorus. The range is 0.97 to 1.49 mmols/litre.
- If you are having dialysis treatments, the range is 1.13 to 1.78 mmols/litre.

What will happen if the phosphorus level is too high?

As the phosphorous level becomes high, the calcium - phosphorus balance is upset. This makes the level of calcium in the blood low.

What will a high phosphorus and low calcium level do to my bones?

Low blood calcium causes the parathyroid gland in your neck to release a hormone called parathyroid hormone. This hormone removes calcium out of bones. In time, bones become weak and brittle. You may suffer from bone and joint pain. Your bones can break easily. This is called bone disease.

How do I keep my phosphorus levels normal?

Phosphorus levels can be controlled by:

- the amount of phosphorus you eat
- taking phosphorus binder medication as prescribed
- dialysis treatments



What foods contain phosphorus?

Dairy products are very high in phosphorus. You will need to limit food such as milk, yogurt, cheese, ice cream and other dairy products.

Meat, fish and chicken also contain phosphorus. You will learn the amounts you can have of these foods as they also give you good quality protein. Your dietitian will help you with the amount that your body needs.

What is a phosphorus binder?

Your doctor may prescribe medication that lowers phosphorus in your blood. The medication is called a phosphorus binder. Some names are Calcium Carbonate, Calcium Acetate, Tums[®] or Renagel[®].

Phosphorus binders work by sticking to phosphorus in food. The blood cannot absorb all the phosphorus. Therefore, your body gets less phosphorus.

When should the phosphorus binder be taken?

You will need to take this medication with meals so it can attach to the phosphorus in your food.

How much phosphorus binder do I need?

The amount depends on your diet. A large meal that contains more phosphorus may need more binder. A small meal that is low in phosphorus may need less. You will learn how to control your diet and take the binders as prescribed. This will help keep your bones in good health.

Sample Diet Guidelines

| Dairy products | High quality protein foods | Other phosphorus foods |
|--|---|--|
| <p>Limit to 1 choice a day (1/2 cup a day):</p> <ul style="list-style-type: none"> • milk • cream soup • yogurt • ice cream • pudding • eggnog <p>Limit to 3 choices a week:</p> <ul style="list-style-type: none"> • 1 ounce cheese • ¼ cup cottage cheese <p>Avoid:</p> <ul style="list-style-type: none"> • processed cheese slices • cheese spreads | <p>Use as prescribed:</p> <ul style="list-style-type: none"> • meat • chicken • turkey • fish • egg • salmon with no bones | <p>Avoid these foods:</p> <ul style="list-style-type: none"> • nuts and seeds • bran cereals • oatmeal • corn bread • wholegrain, dark rye, pumpernickel bread • legumes and lentils • baked beans • soy beans • dried peas and beans • organ meats • chocolates and cocoa • cola drinks • beer • canned salmon if you eat the bones • granola bars • pancake, waffle, muffin and cake mixes • English muffins • brown rice, wild rice • cake donuts |

Your role

You should take an active role managing your phosphorus levels and make good choices from the food lists. Be sure to take your medication to bind phosphorus as directed by your doctor.

Sample Menu
Difference between choosing low and high phosphorus foods

| Lower Phosphorus Menu | | Higher Phosphorus Menu | |
|-------------------------------------|-------------|---|-------------|
| Breakfast | | Breakfast | |
| 4 oz. juice | 15 | 4 oz. juice | 15 |
| 1 egg | 99 | 1 egg | 99 |
| 1 white toast with butter and jam | 21 | 1 whole wheat toast with butter and jam | 52 |
| 1 cup quick cook cream of wheat | 100 | 1 cup quick cook oatmeal | 178 |
| ½ cup milk | 117 | 1 tablespoon of All Bran added to oatmeal | 36 |
| | | ½ cup milk | 117 |
| Snack | | Snack | |
| 1 cup tea or coffee | 0 | 1 cup tea or coffee | 0 |
| 1 danish pastry | 38 | 1 bran muffin | 112 |
| Lunch | | Lunch | |
| sandwich - 2 slices white bread | 40 | 1 cup pea soup | 232 |
| ½ cup tuna for sandwich | 196 | sandwich - 2 slices of pumpernickel bread | 146 |
| ½ cup pears | 7 | 1 oz. cheese for sandwich | 202 |
| ½ cup cranberry juice | 3 | 1 oz. ham for sandwich | 60 |
| | | ½ cup fruit | 7 |
| | | ½ cup milk | 117 |
| Snack | | Snack | |
| ½ cup lemonade | 4 | ½ cup pepsi or coke | 52 |
| 1 cup popcorn | 24 | ½ cup nuts | 149 |
| Dinner | | Dinner | |
| 3 oz chicken with gravy | 225 | 3 oz. beef liver | 405 |
| ½ cup mashed potato | 48 | ½ cup mashed potato | 48 |
| ½ cup green peas | 50 | 1/3 cup green peas | 50 |
| ½ cup jello | 32 | ½ cup yogurt | 108 |
| 1 white dinner roll | 32 | 1 slice wholewheat bread | 52 |
| Evening Snack | | Evening Snack | |
| ½ cup gingerale | 3 | ½ cup pepsi or coke | 52 |
| ½ sandwich-1 oz meat on white bread | 91 | 4 crackers | 18 |
| | | 2 tablespoons peanut butter | 120 |
| Total | 1162 | Total | 2396 |