

My Treatment: Renal Bone Disease

Healthy kidneys prevent the build up of wastes and extra fluid (water) in your body. Kidneys also help balance the minerals (calcium and phosphorus) in your blood and make hormones to keep your bones strong. When your kidneys no longer work well enough to do these jobs, it can cause serious health problems like renal bone disease. Bones may become thin and weak and you may feel bone or joint pain. To make sure the calcium and phosphorus is balanced in your body, they will be watched with your monthly labs. Knowing how the minerals in your body work and what can be done to keep them balanced can help you prevent serious health issues.



How Do Calcium, Phosphorus and Parathyroid Hormone Work In The Body?

- Ca** Calcium helps make hormones and allows muscles and blood vessels to work right.
- P** Phosphorus is needed for growth and repair of tissues and allows you to make and use energy.
- PTH** Parathyroid hormone (PTH) is released by the parathyroid gland and helps to keep the proper balance between calcium and phosphorus in your blood.

Calcium and phosphorus are both hard minerals that are mostly found in bones and teeth. Only a small amount of each of them is usually found in the bloodstream for other important body tasks. When your kidneys cannot keep calcium and phosphorus balanced in the blood, renal bone disease occurs.

What Happens When Calcium and Phosphorus Are Out of Balance?

Several things happen as your kidney function drops, causing things to become out of balance, including:

1. Your kidneys make less Vitamin D, the hormone that helps your body absorb calcium and moves it from your intestines into your blood.
2. Your kidneys do not remove as much phosphorus and it builds up in the blood.
3. The extra phosphorus in the blood pulls calcium out of your bones and makes them weak.
 - The extra calcium and phosphorus in the blood can lead to calcification. Calcification is the hardening of blood vessels (arteries) and organs (heart, lungs, brain, eyes, tissue) like bone and can lead to serious health issues.
4. High phosphorus levels can cause your calcium levels to drop. The low calcium level triggers the release of PTH into the blood.
 - PTH moves calcium from your bones into your blood.
 - Too much PTH can make you feel itchy.
 - Over time, the loss of calcium can lead to osteodystrophy, making your bones fragile and weak.

What Should I Know and Do?



What you eat matters. Almost every food you eat contains some natural phosphorus. Processed foods (food that has been cooked, canned, frozen, packaged or changed to help preserve it) have phosphorus additives in them. These additives are highly absorbed into the blood and are thought to be more harmful than foods which contain natural phosphorus.

- Limit how much phosphorus you take in through your diet.
- Talk with the dietitian to find out about good food choices and what to look for on food labels.



Dialysis cannot remove all the extra phosphorus from your blood but does play a part in controlling phosphorus.

- If you are on hemodialysis, your doctor may change your dialysis dose to help control the blood phosphorus level by increasing blood flows, the amount of time you are on dialysis or the number of sessions.
- If you are on peritoneal dialysis, your doctor may change your dialysis solution amount or increase the number of fills each day.
- Do your dialysis treatments according to your doctor's orders.



Medications may protect the bones by restoring the proper balance of minerals and hormones.

- Your doctor may prescribe a phosphate “binder” to take with your meals. This medicine will bind to the phosphorus in your meal and control how much actually gets absorbed into your blood.
- Take your binder with all meals and snacks.



Labs are done monthly and should be reviewed with you to monitor your progress with calcium and phosphorus balance.

- Talk with your dietitian and doctor about your lab goals and what you can do to maintain and/or improve your levels.
- Read My Treatment: [Knowing My Lab Numbers for Bone Health](#) to learn more.

My Questions: Ask Your Care Team

- What do I need to do to keep my bones healthy?
- What are some lower phosphorus foods I can eat?
- What happens if I don't take my binders with meals?



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