Kidney Disease and Your Bones

**How does kidney disease affect my bones?**

Odd as it might sound, your kidneys are important to your bones. Healthy kidneys maintain proper levels of calcium and phosphorus—minerals that help to keep your bones healthy and strong.

With kidney disease, your bones can become weak and may fracture more easily. You may also have pain in your bones and joints. These problems occur because:

- **Strong bones depend on the right balance of calcium and phosphorus in your blood.** When kidneys lose function, your blood ends up with too much phosphorus and not enough calcium.

- To try and restore this balance, your parathyroid glands make a chemical messenger called parathyroid hormone (PTH). PTH tells your bones to send stored calcium to your blood, which weakens the bones.

- Diseased kidneys are less able to process vitamin D, which helps your bones absorb new calcium needed to be strong. Vitamin D in food or supplements has to be converted by your kidneys so that bones can absorb calcium. With kidney disease, this process doesn't work very well, so your bones can't absorb the calcium they need to replace what was sent to the blood.

Kidney disease sets off a 4-stage chain reaction that weakens your bones.
How does my healthcare provider check for bone problems?

Your healthcare provider can usually diagnose bone problems based on the levels of parathyroid hormone (PTH), calcium, and phosphorus in your blood.

Depending on your situation, your healthcare provider may also order a bone density scan (DEXA scan) or another imaging test to check the strength of your bones.

How can I prevent or manage bone problems?

Bone problems can progress over time. To prevent or treat bone problems, it’s important to:

- **Follow a low-phosphorus diet.** Intermountain’s fact sheet *Kidney Disease and Phosphorus* gives detailed information on a low-phosphorus diet, but here are some tips for what to AVOID:
  - Colas and beer.
  - Chocolate and desserts made with chocolate.
  - Milk and dairy foods like yogurt, cheese, and ice cream.
  - Processed meats (hot dogs, bologna) and organ meats (such as liver). You should limit other meats, fish, and poultry to 3 ounces per meal.
  - Foods with additives containing phosphorus. Read the ingredient label for words containing “phos” such as phosphoric or phosphate.

Your doctor can help you with diet plans or may refer you to a registered dietitian nutritionist (RDN).

- **If your healthcare provider directs you to, take a phosphate binder.** Your healthcare provider may direct you to take an over-the-counter binder, such as Tums. Or, you may be given a prescription for a phosphate binder medicine such as sevelamer (Renagel, Renvela) or calcium acetate (Phoslo). Talk with your healthcare provider for more details.

- **Take other medicines or supplements as directed.** Your healthcare provider may prescribe vitamin D, calcium supplements, or a medicine that reduces the amount of parathyroid hormone made by your body.

- **Get regular blood tests.** Your healthcare provider will test your blood for phosphate, calcium, and parathyroid hormone to check that they’re in balance.

- **If you need dialysis, don’t skip dialysis treatments.** Dialysis removes some of the phosphorus from your blood and can help protect your bones.

How can I make my bones stronger?

If you have kidney disease, it’s important to make these choices that strengthen your bones:

- **If you use tobacco, stop.** Tobacco weakens your bones and increases your risk of fractures. Ask your healthcare provider for a copy of Intermountain’s booklet *Quitting Tobacco: Your Journey to Freedom*.

- **Exercise regularly.** Exercise can help strengthen bones and keep them from breaking. Check with your doctor before starting any exercise program.

- **Take medicines as your doctor directs.** To make sure your medicines work well together, tell your doctor about ALL the prescription and over-the-counter medicines you take, including vitamins and supplements.

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Help from a registered dietitian nutritionist (RDN)

An RDN can help you create an eating plan based on your diet restrictions (such as low phosphorus) and what you like to eat. Help from an RDN may be especially useful if you have several diet restrictions.

To learn more and to contact an RDN, visit: [intermountainhealthcare.org/nutrition](http://intermountainhealthcare.org/nutrition)

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