

# BONES

## Patient TIPS for Living with Kidney Disease

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Chronic kidney disease can lead to bone problems because of calcium and phosphate imbalances in the body. Bones need calcium to grow properly and to stay strong. Calcium is a mineral that comes from food. Normally calcium is absorbed in the gut and deposited in the bone.

When you have chronic kidney disease the body does not absorb calcium for two reasons:

- 1) Active vitamin D, which is made by the kidney, is needed to help absorb calcium and is not available when you have kidney failure.
- 2) If the phosphate level is too high in your blood, you can lose calcium from your bones. Kidney disease can cause the phosphate level in your blood to rise.

The parathyroid glands, which are in your neck, send out a hormone called Parathyroid Hormone (PTH). This hormone helps keep the calcium level in your blood balanced. When the calcium level in the blood goes down, the parathyroid hormone takes calcium out of the bone. If too much calcium is taken from your bones, they will become weak and brittle. This causes bone problems. If too much calcium builds up in your blood, it may be put into your blood vessels and soft tissues, where it can cause damage.



**Some common signs & symptoms are:**

- bone pain
- difficulty walking
- increased chance of fractured bones
- itching

**Things you can do to help prevent these problems:**

- Take prescribed phosphate binder medications regularly to maintain normal calcium and phosphate levels (e.g. Calcium carbonate). Take phosphate binders with meals.
- Follow prescribed low phosphorus diet.
- Consult with dietitian as necessary.
- Have routine blood work drawn, and attend kidney clinic on regular basis (every three months or as necessary).
  - Normal blood calcium levels = 2.15 - 2.64 mmol/L
  - Normal blood phosphate levels = 0.8 – 1.45 mmol/L

Occasionally, further tests need to be done by your doctor to find out more about your bone health e.g. bone biopsy and/or bone scan. Sometimes, surgery may be needed to remove the parathyroid gland(s).

Although these symptoms are common to most people with chronic kidney disease, you may respond differently. Listen to your body and be aware of any changes.

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