

Kidney Health Information

Bone Disease in Chronic Kidney Failure

What is renal bone disease caused by?

People with chronic kidney failure sometimes find their bones get weaker and thinner – becoming painful or breaking easily – as a result of a mineral loss. The most common types of bone disease happen when:

- A change occurs in the balance between two important minerals in your body – calcium and phosphate – leading to loss of calcium from your bones.
- Four small glands (parathyroid glands), which help to regulate calcium in your body, become too active.
- A change occurs in the way your body uses vitamin D, a mineral that is important to healthy bones.

How do these cause bone disease?

Each of the four types of bone disease affects bones in a different way:

- Phosphate is in most foods you eat and whatever is not needed in the body is usually removed by your kidneys. When your kidneys have stopped working

normally, phosphate may build up in your blood. Too much phosphate in your blood leads to loss of calcium from your bones, which tends to weaken them. Eating foods that are low in phosphate can help to prevent phosphate from building up in your blood. You may also need to take a medicine called a phosphate binder, which helps to stop phosphate from being absorbed from the food you eat.

- Because phosphate stays in your body when your kidneys are no longer able to remove it, four small glands in your neck (parathyroid glands) become too active. When this happens, calcium is removed from your bones over a long period of time, causing them to weaken. Usually this problem can be helped by making changes in your dialysis treatments, having a low-phosphate diet and taking certain medications such as calcium and vitamin D. Surgery is sometimes necessary to remove some of these glands.
- Vitamin D is an important vitamin which affects your calcium balance. Normally vitamin D found in the food you eat (and in your vitamin and mineral supplements) is changed by the kidneys into an “active” form that can be used by the body. If your kidneys have failed, they can no longer do this important job. Fortunately, the active form of vitamin D is available as a medicine which your doctor can order for you if needed. (On the whole, over-the-counter vitamin D supplements should be avoided by people with kidney disease. Check with your doctor about the right supplements for you. The amount of vitamin D found in the foods you eat is not a problem.)

Will modifying my diet help to prevent renal bone disease?

By reducing phosphate in your diet, you can help to prevent the amount of phosphate in your blood from becoming too high. Foods high in phosphate include:

- dairy products such as milk and cheese
- dried beans and peas
- nuts and peanut butter

How can renal bone disease be treated?

Your treatment may include one or more of the following:

- Reducing phosphate in your diet
- Taking a medicine called a phosphate binder
- Taking medicine with the active form of vitamin D
- Changes in your dialysis treatment
- An operation to remove the parathyroid glands

Will a kidney transplant help my bones?

A successful kidney transplant may help your bones heal from any damage that occurred before your transplant. However, immunosuppressive medication (corticosteroids) taken by some kidney transplant patients can cause problems.

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