Chronic Kidney Disease and Healthy Bones

If you have chronic kidney disease (CKD), you are at risk for developing a bone disease called renal osteodystrophy. This occurs when your kidneys fail to maintain the proper levels of calcium and phosphorus in your blood.

It is preventable. Early detection and treatment are very important.

What are the symptoms?

You may not have any symptoms. We will monitor your blood for abnormal levels of calcium, phosphorus or parathyroid hormone. If you experience symptoms, they will be:

- Bone or joint pain
- Fractures
- Itching
- Muscle weakness

How does CKD cause bone disease?

- **High levels of phosphorus** – Phosphorus is a mineral found in many foods, and it is absorbed from your digestive system into the blood. Normally, extra phosphorus leaves the body in your urine, but when your kidneys are not working well, the phosphorus increases in the blood. This leads to a low blood calcium level.
- **High levels of parathyroid hormone (PTH)** – PTH is released by glands in your neck. Normally, it triggers the movement of calcium out of your bones to keep your blood calcium level in a normal range. With CKD, high levels of PTH cause too much calcium to be removed from your bones.
- **Decreased levels of active vitamin D** – Vitamin D comes from sunlight and certain foods. Normally, it is activated by kidneys, but this may not happen with CKD. Low levels of active vitamin D can also cause high levels of PTH and phosphorus.

What can be done to prevent bone disease caused by CKD?

- **Low phosphorus diet** – Restricting high-phosphorus foods, such as dairy products and nuts, will help control blood phosphorus levels. Your doctor may ask you to talk with a dietitian.
- **Phosphate binders** – These medications bind to the phosphorus in the stomach, preventing them from being absorbed into your bloodstream. Take them with meals and snacks.
- **Vitamin D** – A special form of vitamin D may be prescribed by your doctor. This is NOT the same vitamin D that can be bought over-the-counter.