

Bone and Mineral Fact Sheet for People with End-Stage Renal Disease

Why Are Calcium and Phosphate Important?

Your kidneys affect the amount of some important minerals in your body, and hormones and vitamins in your body also play a part. Calcium and phosphate are minerals that are needed for a healthy heart and to grow healthy bones and teeth, so your body has to have the right amount of each. If your kidneys begin to fail, phosphate builds up in your blood. Because the phosphate in your blood can be reduced by calcium, your body will use calcium from your bones and release it into your blood to reduce the phosphate. Therefore, high amounts of phosphate in your blood draw more calcium to your blood. Although phosphates may get lowered, the calcium can form plaque deposits in your blood vessels. These plaque deposits cause your blood vessels to harden (arteriosclerosis). When people who use dialysis have high amounts of phosphate and calcium in their blood, they may be more likely to have heart disease.

Why Is Vitamin D Important?

Vitamin D is needed for your body and is formed in the skin when you're in the sun. It is also found in foods like fish oils, eggs, cheese, and liver. Vitamin D helps maintain and control the amount of calcium and phosphate in the body. In your neck is a gland called the parathyroid, and it produces parathyroid hormone (PTH). Vitamin D is needed in order for the parathyroid gland to work right and make the right amount of PTH when needed. PTH causes cells to break down your bone, which puts more calcium in your blood.

What Is Done When Your Body Doesn't Have the Right Amounts of Calcium and Phosphate?

Diet, medicine, and dialysis can help you make the right amounts of calcium and phosphate. If the foods you eat have too much phosphate in them, then eating less of those foods can help. Meeting with a dietician can help you to learn which foods have too much phosphate. While eating the right foods can help, diet alone can't take the phosphate from your blood when it is too high.

Your dialysis medical team might suggest that you take medicine that can lead to less phosphate in your blood. There are three basic kinds of medicines for people who use dialysis: calcium-based phosphate binders, aluminum-based phosphate binders, and aluminum-magnesium based binders. These medicines help soak up the phosphate from food and hold on to the phosphate in your stomach. When this happens, phosphate can't get into your blood and it is taken out of your body in your waste. If you take phosphate binders, then it is important that you have regular tests to be sure you have the right amounts of phosphate in your body.

People who use dialysis and have low amounts of Vitamin D in their bodies may need to take extra Vitamin D. Your dialysis medical team can decide the best way for you to get dialysis, and to make sure you have the right amounts of calcium and phosphate in your blood.

How Does Medicare Help to Make Care Better for People with End-Stage Renal Disease?

Medicare has put in place the End-Stage Renal Disease (ESRD) Quality Incentive Program (QIP). In this program, each outpatient ESRD facility is measured on the quality of the care it gives. Facilities that don't give care that meets Medicare's standards are paid less.

In order to give good care, it is important for your medical team to watch the amounts of phosphate and calcium in your blood. The right amounts of calcium, phosphate, Vitamin D, and PTH are important for helping people who use dialysis be as healthy as possible. Medicare measures how well dialysis facilities keep track of these amounts. While some quality of care performance measures may change from year to year, the main goal of paying dialysis facilities based on how well they give care stays the same.