

Why do we worry about phosphorus blood levels?

Phosphorus and calcium need to stay in balance in your blood. If your phosphorus or calcium levels become too high they can form calcium phosphate deposits or “calcifications” in your body. Studies have shown that having a high phosphorus level increases the risk of dying in dialysis patients due to these calcium phosphate deposits. We are particularly concerned about the deposits that can occur in the arteries of the heart.

Where does phosphorus come from?

Phosphorus is a mineral found in many foods. Certain foods (example: dark colas (Coke®, Pepsi®) and dairy products) contain higher amounts of phosphorus than other foods. The kidneys are responsible for removing any extra phosphorus by excreting (removing) it into the urine. But when the kidneys are not working normally the phosphorus is not removed and it builds up in the blood.

When do we worry?

Current guidelines recommend keeping your phosphorus level at 1.8 mmol/L or less.

If your phosphorus value is between 1.81-2.10 you have a 2% higher risk of dying than someone who keeps their phosphorus value at 1.8 or below. If your phosphorus value is between 2.13-2.52, you have an 18% higher risk of dying and if your phosphorus value is between 2.55-5.46 you have a 39% higher risk of dying.

In a recent survey, 42% of Manitoba Renal Program dialysis patients have phosphorus levels above 1.8 mmol/L.

What symptoms can you experience if phosphorus levels go too high?

Some patients may experience red eyes, painful joints, and itchy skin. These symptoms are usually seen when the phosphorus level is 3 mmol/L or higher.

How Can You Keep Phosphorus Under Control?

Diet

- Follow your dietitian's recommendations for phosphorus intake.
- Phosphate Binders (calcium carbonate (ApoCal, Tums) or sevelamer (Renagel))
- Take these pills with food.
- Carry a small amount of your binders with you if you are eating out or at work.
- Avoid missing dialysis
- Peritoneal dialysis: Avoid missing dialysis exchanges.
- Hemodialysis: Avoid cutting treatments short (leaving early) or missing an entire dialysis treatment. Approximately 20% of the total phosphate removal occurs in the last hour of a 4 hour treatment, so patients missing even 1 hour of dialysis time may need to take more phosphate binders to achieve the same phosphate removal.

How much phosphorus is removed by dialysis?

Hemodialysis removes approximately 900 mg of phosphorus per treatment.

Peritoneal dialysis removes approximately 300 mg each day.

However, even on a low phosphorus diet you are allowed up to 800-1200 mg of phosphorus each day so we use both phosphate binders and dialysis to keep your phosphorus level within target.

Tip: Next time you have blood work done please feel free to ask your nurse, doctor, pharmacist, or dietitian what your phosphorus level is.