

Potassium in your blood



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Transcript: “I have high potassium in my blood, I know it can cause sudden death.

What am I to do, doctor? Please help me”.

Through desperation many of my senior viewers have asked for my comments on this issue.

Normally, your blood potassium level is 3.6 to 5.2 millimoles per liter.

In milligrams your requirement per day is 2,600 to 3,400 milligrams of potassium which comes from your diet.

Potassium is an electrolyte and mineral that circulates throughout your body, maintaining the overall balance of fluids in your blood stream and cells, and helps with the electrical conduction required for muscle contractions, including heart muscle contraction. Major electrolytes in the body include sodium, calcium, and potassium.

A low and high potassium level are life threatening. When the potassium level goes down below 2.5 mmol/L can be life threatening.

When the level goes between 5.0-5.5 milliequivalents per liter referred to as hyperkalemia is also life threatening and it is recorded that about 2% of hyperkalemia cases end in death.

It is your kidneys that maintain a normal level of blood potassium after eating potassium rich foods.

Potassium is freely filtered through the glomerulus and actively reabsorbed in the proximal tubules.

If your kidneys are not working well due to chronic kidney disease, so common in not well controlled diabetes, there will be a build-up of potassium in your blood.

How can you find whether your kidneys are working well?

The basic tests you do on a blood sample and urine examination to check on your kidney function, includes:

Blood creatinine level and estimated Glomerular filtration or eGFR.

eGFR rate is the best test to measure your level of kidney function and determine your stage of kidney disease

This may vary according to your age, body size and gender.

A normal eGFR for adults is greater than 90 mL/min according to the National Kidney Foundation.

With age and chronic kidney disease the eGFR drops. People before the age of 70 years over 60 mL is accepted as having normal functioning kidneys. In any chronic kidney disease situation eGFR will start dropping yearly, and when it gets reduced to less than 15mL may need dialysis.

So, remember, the commonest cause of hyperkalemia or increase blood potassium is due to kidney disease and failure.

You should be under the care of a nephrologist for remedial measures to reduce the blood potassium level by improving kidney function.

When the eGFR drops to 20-30 there will be symptoms of kidney disease which includes swelling in the ankles and legs, foamy or blood in your urine, fatigue, poor appetite and so on.

With high blood potassium levels, if you find early swelling around ankles and legs, you need to see your nephrologist without delay.

You may be on metformin to control your blood sugar in diabetes. When your eGFR drops to 60mL you need to stop taking metformin and your doctor will put you on a different medication to control your diabetes.

Remember, too much drinking water can affect your eGFR if you have chronic kidney disease.

Avoid processed foods and choose fresh fruits and vegetables having low potassium levels.

Limit your salt intake to less than 2000 mg per day.

There are certain healthy foods to bring down the blood potassium levels and improve kidney functions.

Red bell peppers are good for you. Half a cup serving has only 1 mg sodium, 88 mg potassium.

Cabbage has low potassium- Half cup serving green cabbage has 6 mg sodium and 60mg potassium.

Cauliflower, garlic, and onions have low potassium and are good for you.

Plain coffee is an acceptable beverage for kidney disease and control blood potassium.

Additives to coffee such as milk and many creams can increase the potassium in your coffee.

We always recommend unprocessed brown or red rice for better health, especially for diabetes.

The only exception of recommending polished white rice is when you have high potassium in your blood- the reason being the unpolished rice has much higher content of potassium than the polished varieties.

Potassium is abundant mineral in the intracellular fluid- i.e., fluid within the body cells. It is a mineral that your body require to function properly, mainly helps your nerves to function and muscles to contract. It keeps the heart muscles pump at a regular beat.

It also helps in to move nutrients into cells and waste products out of the cells.

A diet rich in potassium helps to offset some sodium's harmful effects on blood pressure. Most of the potassium comes from your food you eat. Sources of potassium in the diet is important to know in both low potassium and high potassium situations in your body to control your level in your blood.

Remember the leafy veggies you eat such as spinach and collards have lot of potassium.

Dried fruits, cereals, beans, milk, and most vegetables have high potassium

Grapes and blackberries have lot of potassium. So those who have high blood potassium levels may have to avoid wines and highly praised blackberries for its nutrients.

Root veggies like carrots and potatoes have high potassium levels.

Juices from fruits have high potassium levels, includes

Orange juice.

Tomato juice.

Prune juice.

Apricot juice.

Grapefruit juice.

If your blood potassium level is on the lower side the following foods are beneficial.

Bananas, oranges, cantaloupe, honeydew, apricots, grapefruit (some dried fruits, such as prunes, raisins, and dates, are also high in potassium), Cooked spinach, Cooked broccoli, Potatoes

Sweet potatoes, Mushrooms, Peas, Cucumbers, Zucchini,

Pumpkins, Leafy greens, Legumes like lentils, High levels of potassium are found in dairy, meat, fish, and chicken.

If your potassium level in your blood is on the high side- we call it hyperkalemia you should minimize eating foods mentioned above, that builds up in your body.

You may need to restrict your potassium intake to 2,000 milligrams per day.

Potassium is most used for treating and preventing low potassium levels, treating high blood pressure, and preventing stroke.

The more potassium you eat, the more sodium you lose through urine, provided your kidneys function well.

Potassium helps to lower blood pressure, and potassium chloride supplementation lowers blood pressure.

Certain medications can raise potassium levels and if your potassium level is high, your doctor will avoid prescribing them to you.

Such medications include

Angiotensin 11 receptor blockers ARBs and ace inhibitors.

ARBs and ACE inhibitors are used to treat high blood pressure and can cause your kidneys to retain potassium instead of letting it flow out with your urine.

Spirolactone, Non-steroid anti-inflammatory drugs NSAIDs Cyclosporine, Heparin, Propranolol

Hypokalemia

In hypokalemia, the level of potassium in blood is too low.

There are many causes for low potassium. This may result from excessive vomiting, diarrhea, adrenal gland disorders, or use of diuretics.

Certain drugs like diuretics used as medication for high blood pressure can lower your potassium levels.

If you take Lasix long term, you need to take potassium tablets and the common one is Slow K.

Albuterol used in asthma inhalers can lower your potassium level.

Albuterol stimulates your body to release more insulin, which takes potassium out of your blood stream and puts it into your cells, essentially lowering the amount of potassium circulating in your blood stream.

Insulin drugs at high doses can lower potassium levels and shift the potassium from the blood stream into your cells.

Sudafed or pseudoephedrine available over the counter as a decongestant can push potassium out of your bloodstream into your cells.

Low potassium makes your muscles feel weak, cramps and twitching of muscles, and become paralyzed. Abnormal heart rhythms may develop.

Bottomline:

As mentioned earlier increased potassium in your blood called hyperkalemia can become a life-threatening electrolyte abnormality caused due to medication use, kidney dysfunction among others.

FDA has recommended therapies for the management of increased blood potassium with drugs like sodium polystyrene sulfonate, in clinical emergencies.

Other treatment options for hyperkalemia include IV calcium, insulin, sodium bicarbonate, albuterol, and diuretics. A new drug (patiomer) was recently approved for the treatment of hyperkalemia, and additional agents are also in development.

Hope this video talk was useful.

Take care and goodbye for now.