

## ***Potassium, The Great Forgotten Mineral***

Bananas. You could almost guarantee that nearly every human in the Western World over the age of six knows that bananas have potassium. Sometime in the late 90s, in one scene of *Honey We Shrunk Ourselves*, I believe it was the third and final sequel to *Honey I Shrunk The Kids*. The daughter feeds bananas to her unconscious brother who has a medical disorder which requires a potassium prescription. Miraculously the boy awakes thanks to his sister's quick wits and knowledge of the wealth of potassium within the life-rescuing banana.

In Middle School, the teachers would give us salt and potassium tablets after P.E. class in the summer along with plenty of water. They told us that our bodies lost both of these minerals in our sweat and that drinking water wasn't enough. While these two commonly understood facts about potassium are true, (that bananas have potassium, *not* as an alternative to potassium medication!) the actual role of potassium in the body is not commonly understood.

What is interesting to observe is that salt, namely sodium, and potassium are linked together in their roles inside the body. The majority of the potassium in the body is located within the cellular fluids, while the majority of the sodium is extracellular. In order to understand the significance of this, it is necessary to understand some of the properties of potassium and sodium. Mainly, both are highly water-soluble. In fact, pure potassium and sodium, when they come into contact with water, react violently with the hydrogen and can even produce flames. Fertilizer is super-abundant in potassium and that is why transporting

it requires extreme care. Fertilizer is also considered to be explosive in large quantities. I'm sure Hollywood is on the verge of producing a movie about a farmer turned domestic terrorist who plans to blow up the White House with fertilizer.

In fact, 93% percent of the manufactured potassium is used in fertilizer. The reason is because potassium is one of the most rapidly depleted nutrients from soil due to heavy farming and farmers need large amounts of fertilizer to replace it. A whole book could be devoted to the topic of soil depletion and abusive farming practices (there already are) but we'll stick to potassium here. You can actually taste the difference between fruits and vegetables that have been grown in soil rich in potassium and those which haven't. In fact, the amount of flavor in most crops is directly attributable to the quantity of potassium in the soil. Potassium helps plants utilize phosphate and nitrogen, which are also critical nutrients to healthy plant growth. This is why plants are the primary dietary source of potassium.

There are a number of researchers who have studied the diets and lifestyles of ancient cultures, as well as primitive cultures that still live as they did thousands of years ago as hunter/gatherers. One of the most common observations is that high blood pressure and heart disease are practically non-existent. There is strong evidence to believe that the reason behind this phenomenon is the fact that these societies consume far greater amounts of potassium than sodium, which is directly opposite to the modern Western diet which is highly abundant in sodium due to food processing, canning, preservation, and animal flesh and fats, all of which increase the amount of sodium

consumed and reduce potassium consumption.

Certain cooking methods can also change the potassium content of the food you eat. Boiling most foods removes the potassium due to potassium highly reactive nature with water. This is why it is important to consume the water in soup to ensure adequate consumption of the nutrients that may have been leached from the food and into the water.

If you look at our biology as humans, our kidneys tend to accumulate sodium and store it, while potassium is typically excreted in higher than necessary volumes. Why would the body, after thousands of years of evolution so easily give up an essential nutrient? If you look at the diet of an individual in a primitive culture, you tend to see that the major food sources are wild fruits, vegetables, grains, seeds, and root vegetables. While there is protein consumption from caught animals which typically contain higher amounts of sodium, the ratio of consumption is strongly in favor of potassium. A body that is exposed to highly abundant amounts of potassium has the luxury to excrete what it doesn't need. Sodium, which is historically scarce is stored in order to last until the next opportunity.

Our modern diet has completely distorted this balance. This balance is quite critical to proper cellular function. Because sodium and potassium have electrical properties in water, they are referred to as *electrolytes*. Electrically charged water is critical to life systems. The potassium within the cell and the sodium outside are used to spark reactions in the nervous system, to activate and deactivate cellular switches that trigger hormone releases and other such purposes. Blood

pressure is highly sensitive to fluctuations in this system. Excessive sodium in body not only accumulates in the arteries, but also prevents the arterial muscles from being able to relax properly and can lead to hypertension.

A number of studies on this subject have shown that potassium supplementation alone can help reverse this condition and restore the proper balance. The typical advice given to individuals with high blood pressure is to reduce salt intake. What is missing from this equation is to increase the amount of potassium consumed to help calibrate the effects of the existing salt levels. According to the Linus Pauling Institute at the Oregon State University, a 1997 meta-analysis was conducted on 33 randomized controlled trials that had assessed the effects of increased potassium intake on blood pressure. The conclusion was that individuals with high blood pressure typically experienced a reduction in blood pressure. Those who had excessive salt consumption experienced the greatest degree of reduction. Those with normal and healthy blood pressures experienced only slight reductions in blood pressure.

If you think blood pressure regulation isn't very impressive, consider this: one of the most feared results of high blood pressure is a stroke. A study conducted over the course of eight years and followed more than 43,000 men found that the top twenty percent of men with the greatest daily consumption of potassium were 40% less likely to suffer a stroke compared to the bottom twenty percent. The median daily potassium consumption in the top 20% was 4,300 mg/day as compared to the lowest fifth of men with only 2,400 mg/day. Essentially, those who were taking less than twice

as much potassium had nearly have the likelihood of suffering a stroke. These are powerful results. To really drive the point home, there was also an animal experiment conducted on rats that were fed a stroke-inducing diet. One group was given potassium supplements while the other was not. Within the potassium group 2% suffered fatal strokes. In the other group, 83% suffered fatal strokes.

Another common effect of high blood pressure is kidney damage. Kidney stones are also associated with high sodium intake. Potassium supplementation has been shown to have a protective effect on the kidneys and reducing the incidence of both of these conditions in numerous medical studies in both humans and animal trials.

Interestingly, potassium has also been found to slow the progression of osteoporosis in the elderly. Several studies have assessed the effects of increasing dietary potassium through increased consumption of fruits and vegetables. This dietary change alone was enough to maintain healthy bone mineral density over the course of several years. While the exact mechanism by which this is accomplished is not fully understood, one theory is that the enzymes which govern the restoration and maintenance of bone tissue require a healthy supply of potassium in order to function optimally. High sodium intake and insufficient potassium negatively alters the function of these enzymes. High sodium diets are well known for increasing the rate of bone loss in the elderly.

While potassium overdose is extremely rare, it can occur under certain conditions. Kidney failure, potassium sparing diuretics, and the

insufficient secretion of aldosterone (a hormone that increases the reabsorption of sodium and water and the release of potassium in the kidneys) can create a severe deficiency of potassium known as hyperkalemia. Also, hyperkalemia has occurred in individuals who consumed more than 18 grams all at once, which is unwise to put it mildly. Hyperkalemia can also occur in the event of severe burns, trauma, and the rupture of red blood cells due to the massive shift of potassium within the circulatory system.

Another thing to be aware of when supplementing potassium is that because of its highly reactive properties, taking potassium on an empty stomach and without proper encapsulation, has been known to cause discomfort in the intestinal tract. For this and other reasons it is important to consult a qualified medical professional before supplementing potassium.

While potassium overdose is rare, severe deficiency of potassium with acute reactions is not particularly common either. Mild deficiency, however, over the course of decades, as you can see, takes its toll on the body in potentially fatal or painful ways. Something as simple as shifting the balance of your diet to increasing the amount of fresh fruits and vegetables can be all that your body needs to restore its ancient balance.



4789 Vineland Ave.  
Toluca Lake, CA 91602  
(818) 761-1661  
[www.nutrikon.com](http://www.nutrikon.com)