NUTRI-FACTS
Understanding Vitamins & More

Potassium

AT A GLANCE

Introduction

Potassium (K) is an essential dietary mineral and electrolyte, which conducts electricity in the body, along with sodium, chloride, calcium, and magnesium.

Potassium is necessary for the function of all living cells, and is thus present in all plant and animal tissues.

Normal body function depends on tight regulation of potassium concentrations both inside and outside of cells.

Health Functions

A sufficient intake of potassium is important as it helps the body to

- conduct electricity, which is crucial to heart function and muscle contraction, making it important for normal digestive and muscular function, too
- perform brain and nerve function.

The European Food Safety Authority (EFSA), which provides scientific advice to assist policy makers, has confirmed that clear health benefits have been established for the dietary intake of potassium in contributing to:

- normal muscular and neurological function;
- the maintenance of normal blood pressure.

Disease Risk Reduction

Stroke
Several large population studies have suggested that increased potassium intake is associated with decreased risk of brain infarction.

Taken together, the data suggest that a modest increase in intake of rich sources of dietary potassium could significantly reduce the risk of stroke, especially in individuals with high blood pressure (hypertension) and/or relatively low potassium intakes.

Osteoporosis
Research suggests that increased consumption of potassium-rich fruits and vegetables reduces the acid content of the diet and may preserve calcium in bones, preventing osteoporosis.

Several studies have reported a positive relationship between dietary potassium intake and bone health in populations of women before, during, and after menopause, as well as elderly men.

Kidney stones
Abnormally high calcium in the urine increases the risk of developing kidney stones. Increasing dietary potassium intake by increasing fruit and vegetable intake or by taking potassium bicarbonate supplements has been found to decrease urinary calcium excretion, thereby potentially preventing kidney stone formation.

Other Applications

Please note:
Any dietary or drug treatment with high-dosed micronutrients needs medical supervision.

High blood pressure
Some studies have linked low levels of potassium in the diet with high blood pressure. There is some evidence that potassium supplements might cause a slight drop in blood pressure.

However, study results have been mixed. Two large studies found no effect on blood pressure. It may be that the blood pressure-lowering effect of potassium is more pronounced in individuals with higher salt intakes.

Intake Recommendations

The recommended daily intakes for potassium in Europe are in the order of 3.1–3.5 g/day for adults.

In the U.S., the adequate intake level for potassium has been set at 4.7 g/day for adults, based on intake levels that have been found to lower blood pressure, reduce salt sensitivity, and minimize the risk of kidney stones.

Supply Situation

While the average dietary intake of potassium meets the recommended values in many European countries, the mean dietary intake in the U.S. is significantly below the intake level defined as adequate.

Deficiency

Most people get all of the potassium they need from a healthy diet rich in vegetables and fruits; thus, clear cases of potassium deficiency (‘hypokalemia’) are rare in healthy individuals eating a balanced diet.

Hypokalemia is usually caused by the body losing too much potassium in the urine or intestines. Diarrhea, vomiting, excessive sweating, malnutrition, malabsorption syndromes such as Crohn's disease and the use of some medication can also cause potassium deficiency.

Keeping the right potassium balance in the body depends on the amount of sodium and magnesium in the blood. Too much sodium - common in Western diets that use a lot of salt - may increase the need for potassium.

Symptoms of hypokalemia include weakness, lack of energy, muscle cramps, stomach disturbances, an irregular heartbeat, and an abnormal electrocardiogram (EKG), a test that measures heart function.

Sources

Good sources of potassium include bananas, citrus juices (such as orange juice), avocados, cantaloupes, tomatoes, potatoes, lima beans, flounder, salmon, cod, chicken, and other meats.

Safety

Having too much potassium in the blood (‘hyperkalemia’) occurs when potassium intake exceeds the capacity of the kidneys to eliminate it.

Acute or chronic kidney failure and the use of potassium-sparing diuretics may result in the accumulation of excess potassium due to decreased urinary potassium excretion.

Oral doses greater than 18 grams taken at one time may lead to severe hyperkalemia, even in those with normal kidney function.

Older people have a greater risk of hyperkalemia because our kidneys get rid of potassium less efficiently as we age. Older people should be careful when taking medication that may affect potassium levels, such as nonsteroidal anti-inflammatory drugs (NSAIDs) and ACE inhibitors.

Symptoms of hyperkalemia may include tingling of the hands and feet, muscular weakness, and temporary loss of muscle function. The most serious complication is the development of an abnormal heart rhythm, which can lead to cardiac arrest.

Drug interactions
Please note:
Because of the potential for interactions, dietary supplements should not be taken with medication without first talking to an experienced healthcare provider.