

## Potassium

Healthy people seldom have problems getting enough potassium, if they eat a varied diet. But for those who are sick, with vomiting and diarrhea, potassium losses can become severe. People with anorexia nervosa and bulimia, whose diets are poor and whose bodies are nutrient-depleted from vomiting and laxative use, are also at risk for potassium deficiency, with potentially life-threatening effects.

Individuals taking a potassium-depleting diuretic medication may need to eat more high-potassium foods. While the doctor may routinely recommend a banana a day for potassium, the good news is there are many excellent food sources. Fresh foods with limited processing are the best sources of potassium.

Potassium's roles in the body include:

- maintains fluid and electrolyte balance
- helps transmit nerve impulses
- helps regulate blood pressure and reduces the risk of stroke
- helps maintain a regular heartbeat
- helps prevent muscle cramps

Eating adequate amounts of both calcium and potassium while consuming a low-sodium diet may prevent bone fractures and osteoporosis. A potassium-rich diet may also lower the risk of some types of kidney stones. In addition, a diet low in potassium yet high in sodium and protein increases the amount of calcium excreted in urine.

### HOW MUCH POTASSIUM IS NEEDED?

The 2005 Dietary Guidelines for Americans recommends consuming the following amounts of potassium daily:

Mg of Potassium Daily	Age Group
4,700	Adults and adolescents
4,500	Children 9-12 years old
3,800	Children 4-8 years old
3,000	Children 1-3 years old

Most Americans get only half of this daily recommendation.

Certain population groups tend to be more salt sensitive. The following groups should aim to meet the potassium recommendation of 4,700 mg per day with food, while consuming no more than 1,500 mg of sodium per day:

- individuals with hypertension, or high blood pressure
- African Americans
- middle-aged and older adults

In general, African Americans have a high prevalence of elevated blood pressure, as well as salt sensitivity. They may especially benefit from eating more potassium-rich foods.

Potassium supplements should not be used unless a doctor recommends them. However, they are sold over-the-counter and in many health food stores without a warning label.

### SOURCES OF POTASSIUM

A key recommendation of the 2005 Dietary Guidelines for Americans is to consume potassium-rich foods, such as fresh, whole fruits and vegetables, while consuming foods with little salt. Most processed foods contain less potassium and more sodium than fresh foods. Two cups of fruit and 2½ cups of vegetables should be consumed daily for a 2,000 calorie intake.

Potassium should come from food sources, not supplements. The best sources are fresh foods with limited processing, especially leafy green vegetables, root vegetables, legumes and fruits. Although meat, milk, and cereal products contain potassium, the form of potassium in these foods is not as readily available for absorption by the body. The following table contains fruits, vegetables, and legumes (dry beans) that are very good sources of potassium:

Food, Standard Amount	Potassium (mg)
Sweet potato, baked, 1 potato	694
Tomato paste, ¼ cup	664
Beet greens, cooked, ½ cup	655
White potato, baked, 1 potato	610
Blackstrap molasses, 1 Tbsp	498
Soybeans, green, cooked, ½ cup	485
Lima beans, cooked, ½ cup	484
Winter squash, cooked, ½ cup	448
Soybeans, mature, cooked, ½ cup	443
Bananas, 1 medium	422
Spinach, cooked, ½ cup	419
Tomato juice, ¾ cup	417
Tomato sauce, ½ cup	405
Peaches, dried, uncooked, ¼ cup	398
Prunes, stewed, ½ cup	398
Apricots, dried, uncooked, ¼ cup	378
Cantaloupe, ¼ medium	368
Honeydew melon, 1/8 medium	365
Lentils, cooked, ½ cup	365
Plantains, cooked, ½ cup slices	358
Kidney beans, cooked, ½ cup	358
Orange juice, ¾ cup	355
Split peas, cooked, ½ cup	355

Taken from: *Appendix B-1. Food Sources of Potassium*, Dietary Guidelines for Americans 2005.

Source: Nutrient values from Agricultural Research Service (ARS) Nutrient Database for Standard Reference, Release 17.

Bananas, just one of many potassium-rich foods, are often recommended by healthcare professionals because they are readily available, easy to chew; and sweet in taste, which almost everyone likes.

### HIGH BLOOD PRESSURE

Potassium, an essential mineral, works with sodium, calcium and magnesium to protect against high blood pressure, or hypertension. Conversely, a low potassium diet raises blood pressure. A potassium-rich diet blunts the effects of salt on blood pressure, may reduce the risk of developing kidney stones,

and decreases bone loss associated with aging. Fruits and vegetables rich in potassium appear to reduce the risk of stroke, also.

Doctors often prescribe diuretics to help decrease blood pressure. Some of these medications cause a loss of potassium, since the potassium accompanies excess water that the body excretes in order to lower the blood pressure. Patients are advised to eat foods rich in potassium to make up for these losses. A lower sodium or salt intake is usually recommended, also.

### SALT SUBSTITUTES

Many salt substitutes are made of potassium chloride and contain no sodium. They are often recommended for people on a sodium-restricted diet. Check with a doctor before using salt substitutes. Salt-free herb blends, as well as lemon and lime juice are excellent alternatives for flavoring food.

### EXCESS OF POTASSIUM

Normally an overdose of potassium is not life-threatening, since excess potassium triggers a vomiting reflex in the stomach. Babies and people with weak hearts may not be able to withstand this trauma. Consuming too much potassium can be harmful to people with kidney problems, because they are unable to get rid of the excess.

There is no major chronic disease associated with too much potassium. When excess potassium is present in the blood, the cause is usually a health problem such as kidney failure, uncontrolled diabetes or use of certain drugs. Excess potassium can trigger a heart attack and result in death.

### POTASSIUM DEFICIENCY

A potassium deficiency is unlikely in healthy people, unless the diet primarily consists of highly processed foods on a continuous basis. A deficiency is usually caused by losing excessive amounts of potassium rather than not getting enough in the diet.

The earliest symptoms of a deficiency are tiredness, muscle weakness, and heart muscle irritability, followed by paralysis and confusion. The following conditions can cause a potassium deficiency:

- dehydration (includes excessive sweating)

- prolonged diarrhea or vomiting (includes anorexia nervosa and bulimia)
- diabetic acidosis
- regular use of certain drugs such as diuretics, strong laxatives and steroids
- certain chronic diseases like adrenal gland disorders, nephritis and acute leukemia

Note: Low potassium symptoms can last for days.

Sources:

1. U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans, 2005*. [www.health.gov/dietaryguidelines/dga2005/document/pdf/Chapter8.pdf](http://www.health.gov/dietaryguidelines/dga2005/document/pdf/Chapter8.pdf)

2. Duyff, Roberta Larson. American Dietetic Association *Complete Food and Nutrition Guide, 2<sup>nd</sup> Edition*. 2002.
- 3.Sizer, Frances and Eleanor Whitney. *Nutrition Concepts and Controversies, Ninth Edition*. 2003.
4. Whitney, Ellie and Sharon Rady Rolfes. *Understanding Nutrition, Tenth Edition*. 2005.
5. Procter, Sandy. *Pick Potassium Sources for Health's Sake*. Kansas State Research and Extension. <http://www.oznet.ksu.edu/humannutrition/timely/potassium.htm>

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