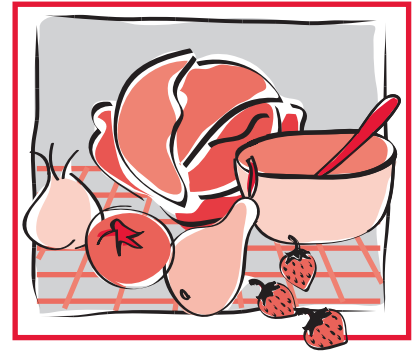


# Potassium and the Diet

Fact Sheet No. 9.355

Food and Nutrition Series | Health



by L. Bellows and R. Moore\*

## What is Potassium?

Potassium is an essential mineral and a major electrolyte found in the human body. It plays an important role in electrolyte regulation, nerve function, muscle control, and blood pressure. Potassium is found within all cells of the body, and its levels are controlled by the kidneys. Primarily, potassium functions to regulate water and mineral balance throughout the body.

Potassium works with sodium to maintain the body's normal blood pressure. Research suggests that increasing dietary potassium may provide a protective effect against hypertension (high blood pressure) by increasing the amount of sodium excreted from the body. A high potassium intake has also been linked to a reduced risk of death due to cardiovascular disease.

## Sources of Potassium

Potassium is found in many foods, especially those of plant origin such as oranges, avocados, bananas, and tomatoes. Potassium can also be found in fish, meat, and dairy products. Highly refined food items such as oils, sugar, and fats lack potassium.

Overall, most Americans do not get enough potassium in their diet. In recent decades, the American diet has shifted towards consumption of processed foods, such as fast food, canned, or pre-packaged food items. The majority of these foods contain little potassium, and are high in sodium. In order to ensure a diet rich in potassium, it is important to eat a variety of fresh fruits and vegetables.

Eating more fresh and frozen foods, which are usually lower in sodium, may be helpful. For more information, see fact sheet [Sodium and the Diet](#).

## How Much Potassium is Required?

The Adequate Intake (AI) for potassium is 4,700 milligrams/day for males and females ages fourteen through adulthood, as well as women who are pregnant (Table 1).

### Special Recommendations:

**For those with high blood pressure or hypertension**—Following an eating plan known as the DASH Diet (Dietary Approaches to Stop Hypertension) may be useful for lowering blood pressure. The DASH diet is higher in potassium, magnesium, and calcium, while lower in total fat, saturated fat, and sodium than the typical American diet. For more information about the DASH eating plan or diet and hypertension, see fact sheet [Diet and Hypertension](#) or fact sheet [DASHing to Lower Blood Pressure](#).

Potassium supplements are generally not recommended for people with high blood pressure. Instead, a variety of potassium rich foods should be eaten daily.

**For athletes and those strenuously active for more than 1 hour in duration**—Prolonged exercise, as well exposure to temperatures and conditions that result in excessive fluid loss may require increased potassium intake. Low potassium can cause muscle cramping and cardiovascular irregularities. Consuming foods high in potassium can prevent these symptoms. One cup of orange juice, a banana, or a potato is sufficient to replace the potassium lost during one to two hours of hard exercise.

## Quick Facts

- Most Americans do not meet the daily recommendation for potassium, and consume levels that are less than recommended.
- Potassium is found in unprocessed meats, and milk, as well as fruits and vegetables such as leafy greens, fruit from vines, and citrus.
- A diet low in potassium and high in sodium may be one of many factors leading to high blood pressure, hypertension, and cardiovascular disease.
- Following a diet that includes more potassium-rich fruits and vegetables, and less sodium containing processed foods is recommended.
- Athletes involved in exercise greater than one hour in duration may require larger quantities of potassium rich foods.
- Potassium supplements are not recommended unless consumption is monitored by medical professional.

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**Table 1. Adequate Intake (AI) values for potassium throughout life stages.**

Infants	Milligrams (mg)/day
0-6 months	400
7-12 months	700
Children	
1-3 years	3,000
4-8 years	4,500
9-13 years	4,500
Adults	
19 years and older	4,700
Pregnant	4,700
Breastfeeding	5,100

**For those with renal disorders—** Potassium intake is inversely related to the risk for kidney stone formation, and those prone to kidney stones usually have diets high in sodium and low in potassium. Those with kidney injury or renal failure should monitor potassium levels carefully, as a high concentration of potassium in the tissue can result in the inability to filter potassium efficiently.

### Potassium Deficiency

Potassium deficiency is not common but may occur from excessive fluid loss due to severe diarrhea, strenuous exercise, or use of diuretics. Deficiency may also result from poor control of diabetes, low-calorie diets (less than 800 calories per day), chronic alcoholism, or kidney problems. Deficiency symptoms include muscle cramps, loss of appetite, nausea, fatigue, and weakness.

### Too Much Potassium?

There is no Tolerable Upper Intake Level (UL) for potassium because toxicity is rare in healthy individuals. Excess amounts of potassium are normally excreted from the body; however problems may arise in those with kidney problems. If excess potassium cannot be excreted, conditions such as heart problems and sudden death may occur. Potassium toxicity is usually only a problem if one consumes potassium supplements in excess, which may result in muscle weakness, stomach pain, or irregular heartbeat.

### Steps to Increase Dietary Potassium

- Include fruits and vegetables that are high in potassium—especially avocado, banana, cantaloupe, oranges, dried plums (prunes), artichokes, potatoes, spinach, and squash.
- Prepare sweet potatoes or regular potatoes with the skin on.
- Consume non-fat dairy products such as milk, yogurt, or cottage cheese, which contain 300-400 milligrams of potassium per serving.
- Enjoy potassium rich legumes such as soybeans, lima beans, and white beans.
- Include lean meats such as salmon and other fish, chicken, and turkey—each provide over 400 milligrams of potassium for every 3 ounce portion.
- While it is important to consume foods rich in potassium, be aware of hidden sources of sodium in canned vegetables and legumes. Be sure to drain all water from canned food before it is consumed.
- Choose fruits and vegetables for a snack, or salt free nuts such as almonds—4 ounces of nuts can provide over 700 milligrams of potassium.

### References

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**Table 2. Where is the Potassium? High, moderate, and low levels of potassium found in various food groups.**

	Source	Serving Size	Milligrams (mg)
<b>High Level</b> (300 milligrams or greater per serving size)	<b>Dairy</b>		
	Nonfat Milk	1 cup	382
	Yogurt	1 cup	579
	<b>Fruit</b>		
	Apricots	3	378
	Bananas	1 medium	422
	Cantaloupe	1 cup	368
	Orange juice	¾ cup	355
	<b>Meat</b>		
	Chicken	3 ounces	383
	Fish	3 ounces	375
	Canned salmon, tuna*	3 ounces	484
	<b>Vegetables</b>		
	Carrot juice	¾ cup	517
	Celery	1 stalk	312
	Dry beans, cooked	½ cup	355
	Greens, cooked	½ cup	655
	Potato, baked	1 medium	610
	Spinach	½ cup	419
	Squash, winter	½ cup	448
	Sweet potato	1 large	694
	Tomato	1 large	300
Tomato juice	¾ cup	417	
<b>Other</b>			
Molasses	1 tablespoon	498	
Nuts, unsalted	½ cup	340	
<b>Moderate Level</b> (100-300 milligrams per serving size)	<b>Fruit</b>		
	Apples	1 large	148
	Grapefruit juice	½ cup	180
	Nectarines	1 medium	273
	Orange	1 medium	237
	Peaches	1 medium	186
	Strawberries	1 cup	254
	Raisins	¼ cup	273
	<b>Meat</b>		
	Beef	3 ounces	290
	Ham	3 ounces	182
	Lamb	3 ounces	259
	Pork	3 ounces	105
	<b>Vegetables</b>		
	Broccoli	½ cup	278
Beets	½ cup	267	
Peas	½ cup	175	
<b>Other</b>			
Peanut butter	2 tablespoons	208	

**Table 2. Where is the Potassium? High, moderate, and low levels of potassium found in various food groups continued.**

<b>Low Level</b> (Less than 100 milligrams per serving size)	Source	Serving Size	Milligrams (mg)	
	<b>Breads and Cereals</b>			
	Bread	1 slice	69	
	Pasta	¾ cup	81	
	<b>Dairy</b>			
	American cheese	1 ounce	58	
	Eggs	1	55	
	<b>Fruit</b>			
	Applesauce	½ cup	90	
	Blueberries	½ cup	50	
	Grapes	10 medium	72	
	<b>Meat</b>			
	Bacon*	3 slices	45	
	Bologna	1 slice	48	
	Corned beef*	3 ounces	61	
	<b>Vegetables</b>			
	Corn	¼ cup	100	
	Black olives*	10	0	
	<b>Other</b>			
	Butter	1 tablespoon	3	

\*These foods have high sodium content (greater than 300 milligrams per serving).

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