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## Patient information: Low potassium diet (Beyond the Basics)

### INTRODUCTION

Potassium is a mineral that is found in many foods. It keeps the heart beating regularly, helps to maintain fluid balance, and allows the nerves and muscles to work properly.

The kidneys are the main organ that controls the correct level of potassium in the blood. People who take certain medicines or who have chronic kidney disease must sometimes, under the direction of their clinician, limit the amount of potassium in their diet to keep their potassium level close to normal.

This article will discuss the normal level of potassium, how it is measured in the blood, and how to eat a low potassium diet. A discussion of other treatments for chronic kidney disease is available separately. (See "[Patient information: Chronic kidney disease \(Beyond the Basics\)](#)".)

### WHY SHOULD I REDUCE POTASSIUM IN MY DIET?

Normally, the level of potassium in your body is balanced by eating foods that contain potassium and getting rid of excess potassium in the urine. However, some people with chronic kidney disease cannot get rid of enough potassium in their urine because the kidneys do not work well.

In these people, the level of potassium in the blood can become higher than normal, causing a condition known as hyperkalemia (hyper=high, kal=potassium, emia=in the blood). Eating a low potassium diet can lower the risk of developing hyperkalemia.

The potassium level is measured by taking a small sample of blood from a vein. A typical normal range for potassium is 3.5 to 5 meq/L. A level greater than 6 meq/L or less than 3 meq/L is considered dangerous. Blood potassium must be well regulated to prevent serious complications.

Hyperkalemia does not usually cause noticeable symptoms until the potassium level is very high, usually >6 to 6.5 meq/L. At this level, dangerous complications can develop, including an irregular heart rhythm, severe muscle weakness, paralysis, or even sudden death.

### HOW MUCH POTASSIUM DO I NEED?

In general, experts recommend eating a diet that contains at least 4700 mg of potassium per day [1]. However, most people with moderate to severe chronic kidney disease or acute kidney injury should eat less than 1500 to 2700 mg of potassium per day. People with moderate to severe

chronic kidney disease have kidney function (ie, glomerular filtration rate, or "GFR") below 45 mL/min (normal is 100 to 120 mL/min).

A registered dietitian or nutritionist can help to create a low potassium meal plan. An example of one such plan includes ([table 1](#) and [table 2](#)):

- Fruit – One to three servings of low-potassium fruit per day
- Vegetables – Two to three servings of low-potassium vegetables per day
- Dairy and calcium rich foods – One to two servings of low-potassium choices per day
- Meat and meat alternatives – Three to seven servings of low-potassium choices per day (approximately 15 percent of calories)
- Grains – Four to seven servings of low-potassium grains per day

A sample diet plan is provided in this table ([table 1](#)).

#### HOW DO I CUT DOWN ON POTASSIUM?

- Almost all foods contain some potassium, so the key is to choose foods with a low potassium level, when possible.
- Measure and be aware of the serving size when calculating the amount of potassium in a food; a large serving of a low potassium food may have more potassium than a small serving of a food with a high level of potassium.
- Drain canned vegetables, fruits, and meats before serving.

Foods with high levels of potassium — The foods in table 2 have greater than 250 mg of potassium per serving and should be avoided or eaten in very small portions ([table 3](#)).

A process of "leaching" can reduce the amount of potassium in some vegetables. (See '[Reducing potassium levels in vegetables](#)' below.)

Foods with low levels of potassium — The foods in this table have a low level of potassium (less than 250 mg potassium per serving on average) ([table 2](#)). You can eat low potassium foods regularly, but limit your portion size since potassium can quickly add up if you eat a large portion.

Reducing potassium levels in vegetables — It is possible to remove some of the potassium in certain vegetables with high potassium levels. Leaching is a process of soaking raw or frozen vegetables in water for at least two hours before cooking to "pull" some of the potassium out of the food and into the water. You should not eat these vegetables frequently because there is still a lot of potassium in the food after leaching.

- Wash and then cut the raw vegetable into thin slices. Vegetables with a skin (eg, potatoes, carrots, beets, rutabagas) should be peeled before slicing.
- Rinse the cut vegetables in warm water.
- Soak the vegetables for at least two hours or overnight. Use a large amount of unsalted warm water (approximately 10 parts water to 1 part vegetables). If possible, change the water every four hours. Drain the soaking water.
- Rinse the vegetables again with warm water.
- Cook vegetables as desired, using a large amount of unsalted water (approximately 5 parts water to 1 part vegetables). Drain the cooking water.

## WHERE TO GET MORE INFORMATION

Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site ([www.uptodate.com/patients](http://www.uptodate.com/patients)). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient information: Low-potassium diet \(The Basics\)](#)

[Patient information: Dialysis and diet \(The Basics\)](#)

[Patient information: Chronic kidney disease \(The Basics\)](#)

[Patient information: Hemodialysis \(The Basics\)](#)

[Patient information: Preparing for hemodialysis \(The Basics\)](#)

[Patient information: Peritoneal dialysis \(The Basics\)](#)

[Patient information: Hyperkalemia \(The Basics\)](#)

[Patient information: Periodic paralysis syndrome \(The Basics\)](#)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient information: Chronic kidney disease \(Beyond the Basics\)](#)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Clinical manifestations of hyperkalemia in adults](#)

[Overview of the management of chronic kidney disease in adults](#)

[Potassium and hypertension](#)

[Treatment and prevention of hyperkalemia in adults](#)

The following organizations also provide reliable health information.

- National Institute of Diabetes and Digestive and Kidney Diseases

(<http://kidney.niddk.nih.gov/kudiseases/pubs/eatright/>)

- National Kidney Foundation

([www.kidney.org/ATOZ/atozItem.cfm?id=103](http://www.kidney.org/ATOZ/atozItem.cfm?id=103), available in Spanish)

[1]

Literature review current through: Oct 2013. | This topic last updated: Sep 26, 2012.

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References

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1. Nutrition and Your Health: Dietary Guidelines for Americans. Available online at [www.health.gov/dietaryguidelines/dga2005/report/HTML/D7\\_Fluid.htm](http://www.health.gov/dietaryguidelines/dga2005/report/HTML/D7_Fluid.htm).