

# POTASSIUM AND HYPERKALEMIA

By *Jessiana Saville,*  
MS, RD, CSR, LD

Potassium is an important element within the body. For people WITHOUT kidney failure, it helps regulate fluid balance, muscle contractions and nerve signals. When people eat more potassium than their body needs, the kidneys dutifully filter and excrete out any extra through the urine. However, when the kidneys don't work, extra potassium in the blood can build up and lead to a very serious problem called hyperkalemia, or high potassium.

This is why many people on the renal diet receive education about high potassium foods. While they can eat some high potassium foods, eating them in excess or large quantities can be very dangerous.

## What Happens If I Get Hyperkalemia?

Years ago as a new dietitian, I remember my first patient with a hyperkalemic episode. After she got out of the hospital, we talked during her dialysis session about what happened. She said that she had woken up one morning and was fully aware she was awake but could not move. Her eyes were open, and she was able to think, but she could not move her mouth to talk, her arms or her legs. She saw her fiancée and family members panicking, calling 911, and taking her to the hospital, but she could not do anything about it.

She was able to recover from the episode and after some dietary sleuthing, we discovered she had been drinking a large quantity of coconut water, which is what had thrown her potassium past a level that her body could handle.

With high potassium levels, people may experience a growing weakness, a feeling of numbness or tingling, nausea, vomiting, trouble breathing, chest pain, palpitations, irregular heartbeats, and in more extreme cases paralysis (like my patient), heart failure, or death.

## What Causes High Potassium?

There are many causes of high potassium, although diet is the most commonly one discussed. Other things that can lead to high potassium include excessively high blood sugar levels, certain medications (such as some blood pressure medications), herbs, and some conditions (such as Addison's disease). The following herbs can contribute to high potassium as well and should be avoided by people on dialysis: herbal

supplements, including milkweed, lily of the valley, Siberian ginseng, or Hawthorn berries.

## Diet and Hyperkalemia

Food is an important consideration when it comes to keeping potassium levels in line for people on dialysis. There are a couple of different strategies that can help keep potassium intake at a safe level:

1. Avoid bingeing or large portions of high potassium foods and learn what portion sizes will work for you. Lists of “high potassium foods” can vary on the internet, widely because some categorize high potassium as >250 mg, while others categorize high potassium as >150 mg.
2. List of high/med/low potassium foods:

Low Potassium (<150 mg)	Medium Potassium (151-250 mg)	High Potassium (>250 mg)
Applesauce ½ c - 92 mg	Pear 1 med - 227 mg	Milk 1 c - 371 mg
Blueberries ½ c - 65 mg	Orange, 1 med - 237 mg	Black Beans (½ c) - 306 mg
Grapes ½ c - 88 mg	Peach, 1 med - 193 mg	Avocado ½ med - 549 mg
Pineapple ½ c - 88 mg	Peaches, canned ½ c - 160 mg	Banana, 1 med - 467 mg
Raspberries ½ c - 94 mg	Green Beans, ½ c - 187 mg	Nectarine, 1 med - 288 mg
Cauliflower ½ c - 88 mg	Broccoli, boiled ½ c - 165 mg	Pomegranate, 1 med - 399 mg
Onions, raw ½ c - 126 mg	Collards, boiled ½ c - 214 mg	Potato, baked med, 610 mg
Rice, cooked, 1 c - 17 mg	Pepper, 1 whole - 211 mg	Spinach, boiled from raw, ½ c - 420 mg
Lettuce, romaine 1 c - 81 mg	Carrots, boiled ½ c - 177 mg	Peanuts, roasted ½ c - 491 mg
Baby carrots, 5 - 140 mg	Chickpeas, boiled ½ c - 238 mg	Sweet potato, peeled and boiled, ½ c - 302 mg

3. Digging into the details can assist people with making knowledgeable choices. If you are curious about a specific food, you can always look up the actual potassium content by using an app like [cronometer.com](http://cronometer.com), the USDA nutrient database, or even in some cases MyFitnessPal. If using an app to look up potassium content, remember that sometimes potassium may be unlisted and show up as “0.” This doesn’t mean the food lacks potassium, it just means that it wasn’t put in the database chart of high, med, low potassium foods.
4. At this time, reading labels for potassium content of food is confusing at best for clients. Due to government guidelines, potassium is required to be listed at this time. However, there are lots of inaccuracies on labels, so be aware that labels listing potassium as “0 mg” may be inaccurate at this time.

## What If My Favorite Food Is High in Potassium?

Many people have wiggle room to include at least one serving of a high potassium food in their diet. Your dietitian can be a helpful guide in helping you

figure out how your favorite high potassium foods can fit in your diet.

Another strategy for including some high potassium foods in the diet is to demineralize them. The best way to do that is to double boil them. This primarily only works for starchy vegetables such as potatoes, winter squashes, or sweet potatoes. Soaking removes very little potassium, so if you plan to demineralize your vegetables, double boiling is best.<sup>1</sup>

## When You Need to Be Especially Careful

There are two situations where people should be especially careful with potassium intake.

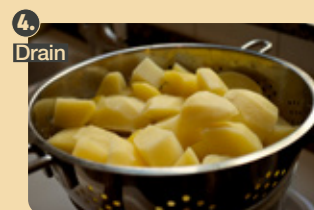
1. If you have to miss dialysis for some reason, you

should absolutely be especially careful with your potassium intake until you are able to get back to dialysis. Dialysis helps remove some potassium from the blood, so missing dialysis can lead to a buildup of potassium and hyperkalemia.

2. If there is an emergency situation and you do not know when you will be able to dialyze next. In some situations, patients who have been caught in a natural disaster situation (e.g., flood, hurricane, etc.) and are unable to get to dialysis. Or their dialysis center may even be damaged or closed temporarily. If you are in an emergency situation and are uncertain when you will be able to dialyze next, it is wise to stick to only the lowest potassium foods until you have a scheduled treatment.

In summary, hyperkalemia can be dangerous. Becoming familiar with the potassium in foods, learning strategies to remove potassium, and being aware of other contributing factors can help prevent an unpleasant trip to the emergency room or worse. Gaining an understanding of potassium in your diet can also give you more flexibility to enjoy some limited amounts of high potassium foods.

## How to leach Potatoes



Jessianna Saville is a registered dietitian, speaker, and blogger about renal nutrition at [kidneyrd.com](http://kidneyrd.com). Her practice is built on helping people preserve kidney function and understand the often confusing renal diet.

## Reference

1. Burrowes, J.D., Ramer, N.J. Removal of potassium from tuberous root vegetables by leaching. *J Renal Nutr.* 2006;16:304–311