

Eat Right on Hemodialysis

When kidneys do not work well, waste and fluid can build up in your blood, making you feel sick. Hemodialysis (HD) can clear some waste and fluid. Eating right can help make less waste build up in your blood, which makes you feel better and keeps you healthier. The most important dietary factors to monitor when on dialysis are protein, sodium, phosphorus, potassium, and fluid.

Protein

Protein is needed to build and repair muscle. Protein also helps you fight off infections. Eating enough protein can help you live longer on HD. People on HD need to eat more protein because some protein is lost during the dialysis process.

How much protein can I eat?

On average, dialysis patients need 7-10 ounces of good protein sources daily. These count as one ounce of protein:

- 1 ounce beef, chicken, lamb, pork, fish
- ¼ cup salmon, tuna, crab, lobster, clams
- ¼ cup cottage cheese
- 1 ounce or 5 medium shrimp
- 1 egg
- ¼ cup egg substitute
- 4 ounces tofu
- *2 tablespoons peanut butter
- *½ cup cooked beans, peas, or lentils
- *1 ounce natural cheese (Swiss, Cheddar, etc)

***Choices higher in phosphorus and/or potassium**

Milk is a protein source, but should be limited to less than 1 cup or 8 ounces daily because it is high in potassium and phosphorus.

Each choice has 8 grams of protein. Each of these is equal to one choice:

- 1 cup milk
- 1 cup yogurt
- ½ cup Greek yogurt
- ¾ cup custard
- 1 cup (milk based) soup
- ½ cup ice cream
- 1 cup milk-based pudding

Sodium

Eating too much sodium (also known as salt) can make you thirsty. The more fluid you drink, the more your heart works to pump the fluid through your body. Over time, this can cause heart failure. Limit sodium to less than 2000 mg per day.

To limit sodium, avoid using highly processed foods, canned goods, and salty seasonings. Restaurant food is very salty. To limit salt, it is best to prepare more foods from fresh ingredients at home.

These foods are high in sodium:

- Salted or smoked meat/fish (bacon, brats, hot dogs, corned beef, smoked fish, sardines, ham, lunchmeat, smoked sausage)
- Breads and rolls with salt toppings
- Cheeses (especially processed cheese such as Velveeta® or American®)

- Convenience and processed foods (frozen dinners, soup, pot pies, packaged entrees or noodle mixes, gravy, sauce mixes, pickles, olives, relish, salty snacks like chips, canned tomato products like spaghetti sauce)

Be careful with seasonings! Stay away from items with sodium such as MSG, salts like garlic salt, sauces like BBQ, chili, soy, Worcestershire.

Do not use salt substitutes that have large amounts of potassium such as: Morton's Salt Substitute[®], No Salt[®], Diamond Crystal[®], and Morton's Lite Salt[®]

Do use:

- Herbs like garlic, parsley, pepper, or oregano
- Lemon juice
- Pleasuring[®] Mini Mini Salt
- Herbal Bouquet[®]
- Lawry's Seasoned Pepper[®]
- Mrs. Dash[®] (all types)
- Spike[®] salt-free
- Tabasco[®] sauce
- Veg-it[®]

Fluid

Most people on dialysis need to limit their fluid intake to 1-1.5 liters per day, which is the same as 4-6 cups, or 32-48 ounces. This is usually based on urine output.

If you drink too much fluid between hemodialysis sessions, you may feel short of breath and your heart will have to work harder. Your blood pressure may be high. You may gain weight or get edema or swelling.

Fluids are anything you drink, or food you eat that becomes liquid at room temperature, such as soup, ice, Jello[®], Popsicles, yogurt, or ice cream.

Potassium

Potassium is a mineral that can build up in your blood between dialysis treatments. It is very important to keep potassium levels under control. Too much or too little potassium in your blood can cause muscle cramps or stop your heart.

Here is a list of fruits and vegetables that contain low, medium and high amounts of potassium for a single serving. A serving size is 1 Cup raw or ½ Cup cooked, or one medium-sized fruit.

Low Potassium Group (try to choose most of your fruits and vegetables from this group)

Fruit

- Apple juice, applesauce, or apple without skin
- Blackberries, blueberries, boysenberries, raspberries, or gooseberries
- Canned apricots, figs, fruit cocktail, grapes, Mandarin oranges, peaches, pears, pineapple, or plums
- Cranberries, cranberry sauce, or cranberry juice
- Fresh grapes, lemon, limes, pears, pineapple, raspberries, rhubarb, strawberries, or tangerines
- Nectars: peach, pear, or apricot

Vegetables

- Bamboo shoots, canned
- Beans – green or waxed
- Broccoli and cauliflower, fresh or boiled
- Cabbage, 1 stalk of celery, or cucumber

- Eggplant
- Greens (raw or cooked): collards, dandelion, kale, mustard, or turnip
- Hominy
- Raw spinach
- Leeks or onion: green, red, yellow or white
- Lettuce, cos, romaine, iceberg, leaf, endive, or watercress
- Mushrooms
- Peppers: sweet or hot
- Double-cooked* potatoes
- Squash: summer or spaghetti
- Radishes, turnips, and water chestnuts

***See page 4 for double-cooked potatoes recipe**

Medium Potassium Group (limit to 1-2 servings daily)

Fruit

- Apple, with skin
- Canned cherries
- Fresh apricots, cubed casaba, 15 cherries, 2 figs, ½ of a grapefruit, orange, peach, 2 plums, or cubed watermelon
- Juice: grape, grapefruit, or pineapple juice

Vegetables

- Asparagus, frozen or cooked
- Artichoke heart, boiled
- Brussels sprouts
- Carrots
- Corn, canned or 1 small ear
- Garbanzo beans
- Greens, frozen, cooked: kale or turnip
- Mixed vegetables
- Okra, frozen or cooked
- Peas, green
- Summer squash: yellow, crookneck, or white scallop

High Potassium Group (do not eat these foods every day and keep portions small)

Fruit

- ½ of an avocado, banana, honeydew, or cantaloupe melon
- Dried fruits: apricots, dates, figs, prunes, or raisins
- Kiwi fruit
- Mango
- Nectarine
- Prune or Orange Juice
- Tangelo

Vegetables

- Artichoke
- Beets and beet greens
- Dried beans and peas: kidney, lima, navy, pinto, black-eyed peas, or split peas
- Kohlrabi
- Potato: baked, boiled, fried, not double-cooked
- Pumpkin
- Rutabaga, cooked
- Cooked Spinach
- Sweet potato or yams
- Tomato, fresh or canned
- Unsalted tomato or vegetable juice
- Winter squash: acorn, butternut, or hubbard

Double-cooking potatoes will not make potatoes a low-potassium food, but it can decrease the potassium content by about half. Avoid Yukon gold potatoes as they will still be high in potassium after double-cooking.

1. Wash and peel the potato.
2. Slice into thin slices.
3. Place the sliced potato in room temperature water. Use two times the amount of water to the amount of potato.

4. Bring to a boil.
5. Drain the water and add two times the amount of water to the amount of vegetable of fresh room temperature water.
6. Boil again and cook until soft and tender.

Phosphorus

Phosphorus is another mineral that builds in your blood. This pulls calcium from your bones. Your bones can become weak. Calcium and phosphorus can settle in your soft tissues, your blood vessels and your heart, causing damage.

Phosphorus Binders

Because protein foods contain phosphorus and you do need plenty of protein, your doctor may also ask you to take a medicine with meals to bind phosphorus from the food you eat. When the phosphorus is bound with the binder medicine, it will be excreted in the stool. Examples of binder medicines include: Renagel[®], Renvela[®], Phoslo[®], Tums[®], Auryxia[®], Velporo[®], or Fosrenol[®].

Foods with a large amount of phosphorus include:

- Dairy products like milk, cheese, yogurt, custard, pudding, ice cream
- Some grain products like bran, oats, cornbread, wheat germ, and boxed cake/bread mixes
- Chocolate, cocoa, caramel, beer, cola, molasses, pizza
- Meat, liver, fish, and eggs
- Nuts, peanut butter, beans, lentils, and seeds

Phosphorus Additives

Many processed food items contain phosphorus additives, which binders will not help much with. The more you prepare fresh food at home, the less you will be exposed

to these additives. You can find these additives on the ingredients list on the food label. Examples are phosphoric acid, hexametaphosphate, or tricalcium phosphate. Always read the ingredients list of packaged foods for “phos” foods.

Examples of foods that often contain phosphorus additives include:

- Fast Food
- Bottled beverages and drink mixes (like Coke[®], Pepsi[®], Dr. Pepper[®], Koolaid[®], Gatorade[®] and other sports drinks, and iced teas)
- Processed meats (like lunchmeat, breakfast sausage, hot dogs)
- Boxed baking items (like cake, cornbread, or cookie mix)

Websites

www.kidneyschool.com

www.Davita.com

www.kidney.org The National Kidney Foundation

www.NutritionData.com For looking up nutrients

Resources

There are several cookbooks designed especially for people with kidney failure. These may help add variety to your diet.

Creative Kidney Cooking for the Whole Family by Rebekah Engum, RD. Expert Publishing. 2012.

National Kidney Foundation list of Cookbooks for Kidney Patients:

<https://www.kidney.org/atoz/content/list-cookbooks-kidney-patients>

Teach Back

What is the most important thing you learned from this handout?

What changes will you make in your diet/lifestyle, based on what you learned today?

If you are a UW Health patient and have more questions please contact UW Health at one of the phone numbers listed below. You can also visit our website at www.uwhealth.org/nutrition.

Nutrition clinics for UW Hospital and Clinics (UWHC) and American Family Children's Hospital (AFCH) can be reached at: **(608) 890-5500**

Nutrition clinics for UW Medical Foundation (UWMF) can be reached at: **(608) 287-2770**

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 11/2017 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Clinical Nutrition Services Department and the Department of Nursing. HF#185