

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 reduce waste in your blood, which makes you feel better and keeps you healthier. When on dialysis you may need to monitor protein, sodium, phosphorus, potassium, and fluid intake.

Protein

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

How much protein can I eat?

On dialysis, you 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 you should limit it to less than 1 cup or 8 ounces daily. Cow's milk is high in potassium and phosphorus. Soy milk is a good alternative

to cow's milk for a protein source with less phosphorus. Each choice has 8 grams of protein. Each of these is equal to one choice:

- 1 cup milk (cow's or soy)
- 1 cup yogurt
- ½ cup Greek yogurt
- ¾ cup custard
- 1 cup (milk based) soup
- ½ cup ice cream
- 1 cup milk-based pudding
- Note: Plant-based milks, such as oat milk, rice milk, almond milk, and coconut milk contain very little protein.

Sodium

Eating too much sodium (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 or eating highly processed foods, canned goods, and salty seasonings. Restaurant food is very salty. To limit salt, prepare more foods from fresh ingredients at home.**

High Sodium Foods

- 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®)
- Store-bought, ready-made 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.

Avoid

Don't use salt substitutes that have large amounts of potassium such as:

- Morton's Salt Substitute[®]
- No Salt[®]
- Diamond Crystal[®]
- Morton's Lite Salt[®]
- Nu-Salt

Choose

- Herbs like garlic, parsley, pepper, or oregano
- Lemon or lime juice
- Pleasoning[®] 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 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.

See our 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

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 double-cooked potatoes recipe

Medium Potassium Group

Modify based on current labs.

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

Modify based on current labs.

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 Cooked Potatoes Recipe

Double-cooking potatoes can decrease the potassium content of potatoes by about half. Avoid Yukon gold potatoes as they will still be high in potassium after double-cooking.

- Wash and peel the potato.
- Slice into thin slices.
- Place the sliced potato in room temperature water. Use twice the amount of water to the amount of potato.
- Bring to a boil.

- Drain the water and add twice the amount of fresh room temperature water to the amount of potato again.
- Boil again and cook until soft and tender.
- Note: Soaking potatoes removes some potassium, but does not reduce potassium as much as double cooking.

Phosphorus

Phosphorus is another mineral that builds in your blood. This pulls calcium from your bones, causing them to 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[®], Sevelamer Phoslo[®], Calcium acetate, Tums[®], Auryxia[®], Velphoro[®], Lanthanum or Fosrenol[®].

High Phosphorus Foods

- Chocolate, cocoa, caramel, beer, cola, molasses, pizza
- Dairy products like milk, cheese, yogurt, custard, pudding, ice cream
- Some grain products like bran, oats, cornbread, wheat germ, and boxed cake/bread mixes
- 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. Always read the ingredients list of packaged foods for “**phos**” foods, such as:

- **Phosphoric acid**
- **Hexametaphosphate**
- **Tricalcium phosphate**

Phosphorus additives are found in:

- Fast food
- Bottled drinks 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)

Resources

Websites

www.kidneyschool.com
www.Davita.com
www.kidney.org
<http://www.nutridata.com/>

Cookbooks

There are many cookbooks 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>

Who to Call

If you are a UW Health patient and have more questions, please contact UW Health at the phone number 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**.

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 © 3/2024 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#185