

Kidney Friendly Diet

Choosing the right foods

Your diet will vary based off of your general needs, but will be most impacted by your stage of kidney failure and if end-stage renal disease, what type of dialysis treatment you are receiving.

An example from the recommended diet [chart](#) ^[1] is the amount of protein recommended for pre-dialysis and for dialysis patients.

Protein

Studies have shown that a low protein diets (hypoproteic) can help postpone dialysis. ⁽¹⁾

Protein is important in your diet because it helps keep the body nourished and healthy to fight off potential infections, repair tissue and for growth. Quality sources of protein include lean red meat, chicken, turkey, fish, lean pork, dairy and egg products. To keep a healthy diet overall it is best to select trimmed cuts of meat or low fat dairy. Nuts and beans are also a good source of protein, but also contain phosphorus.

The chart below was derived from data in the United States Department of Agriculture (USDA) National Nutrient Database for Standard Reference, Release 20.

Type of Protein Source	Amount of Protein in Grams ²
Poultry	
Chicken Breast (1/2 piece)	26
Turkey (3oz)	24
Ground Turkey (1patty)	22
Beef	
Top Round (3oz)	31
Veal (3oz)	30

Ground Beef	22
Pork	
Pork Chop (3oz)	25
Pork Shoulder (3oz)	27
Ham (3oz)	18
Seafood	
Lobster (3oz)	17
Crab (3oz)	16
Shrimp (6large)	10
Fish	
Fresh Tuna (3oz)	25
Canned Tuna (3oz)	21
Salmon	23
Eggs	
Egg substitute (1/4 cup)	7
Egg Cooked (1egg)	6
Egg White (1egg)	3

Beans and Nuts	
Kidney beans (1 cup)	15
Lima beans (1 cup)	15
Mixed nuts (3oz)	15

Calcium

Calcium is another important element in a kidney friendly diet. Healthy kidneys help balance the amount of calcium and phosphorous in the body to promote bone growth and maintenance. Too much calcium can lead to harmful hardening of vessels and too little leads to weak bones. In many dialysis patients phosphorus levels will be higher and additional calcium might be needed to restore the balance. Calcium is found in most dairy products, but these also normally contain high levels of phosphorus. Calcium supplements are an option and sometimes calcium based phosphate binders are prescribed to increase calcium and lower phosphorous levels. If calcium levels are too high there are also options. Calcimimetics can be prescribed that mimic the action of calcium and lower the amount of calcium in your body.

Your dietitian will also be able to point out foods that are high in calcium. (please note many items on this list contain high levels of phosphorus)

- Dairy such as Milk, Cheeses, Yogurt and ice cream
- Spinach
- Broccoli
- Rhubarb
- Tofu
- Oranges
- Flax seeds
- Quinoa
- Nuts
- Now many common foods have added calcium (calcium fortification or enrichment) including
 - Breakfast cereals and bars
 - Breads
 - Juices
 - Margarines
 - Sports drinks
 - Pancake or biscuit batter

- Crackers
- Soy or rice milk
- A few foods contain calcium and low phosphorous
- Two teaspoons of cinnamon has 50mg of calcium and no phosphorous
- Two teaspoons of basil have 63mg of calcium and only 15mg of phosphorous. (2)

Potassium

Potassium is also important in your diet because potassium levels control nerve and muscle functions. Since healthy kidneys remove excess potassium, most pre-dialysis and dialysis patients have too much potassium in their diet. Potassium intake is less of an issue for PD patients and more than three times weekly, hemodialysis patients, due to the more constant cycling of fluid.

Hyperkalemia or high levels of potassium in the body is associated with a significant increase in an irregular heartbeat and sudden death. (3)

It is difficult to limit potassium in your diet, since most foods have at least some in them.

A few helpful steps to keep your level lower includes:

- Watching portion sizes of fruits and vegetables
- Rinsing canned fruits and vegetables
- Replace dairy products with non-dairy substitutes
- Avoid salt substitutes
- Try leaching (a soaking process before cooking) your vegetables
- Track your potassium levels and share any drastic changes with your dietitian

Category	Eat this	Not that
Fruits	Apple	Bananas
	Plum	Oranges
	Berry	Raisins
Vegetables	Zucchini	Acorn/Butternut Squash
	Bell pepper	Tomato
	Green bean	Spinach
Dairy	Nondairy creamer	Milk

	Sherbet/popsicle	Ice Cream
	Cream Cheese	Cheese
Snacks	Pretzels	Nuts or Seeds
	Lemon flavored deserts	Chocolate flavored
	Sugar cookies	Molasses cookies

Sodium

Sodium is one of your body's major electrolytes that helps control the fluid content of your tissues and cells. Most people know sodium as salt, but salt is a compound made up of sodium and chloride. Healthy kidneys remove excess sodium from the body. Too much sodium is an issue because fluid will build up leading to higher blood pressure and potentially heart failure. Sodium will also make you feel thirstier and make it more difficult to keep within your recommended fluid restrictions. PD patients don't need to watch their sodium intake as closely as HD patients, but still need to limit their sodium intake for their overall health. Many foods that you eat have sodium, and of course some are better than others.

High levels of sodium can lead to:

- Swelling (edema) throughout your body
- High blood pressure (hypertension)
- Heart failure
- Shortness of breath

Low sodium choices include:

- Fresh fruits and vegetables
- Unsalted popcorn
- Breads
- Pastas
- Unprocessed meats

High sodium choices to avoid include:

- Processed meats such as ham and luncheon meats
- Chips
- Canned soups and vegetables

- Tomato juice
- Sports drinks
- Many fast or convenience foods

You can help manage your intake by:

- Keeping a food journal to track your dietary sodium.
- Recording your weight daily to track swelling.
- Limiting processed foods.
- Choosing low sodium alternatives and not adding additional salt to meals.
- Reading food labels and looking for hidden sodium in items like drinks or in canned goods.
- Using natural flavor enhancers like spices and herbs as a substitute for salt.

What about dining out?

Restaurants don't have to be off-limits. You can stick with a kidney-friendly diet and still enjoy your favorite places to eat. Work with your renal dietitian and learn to plan ahead. He or she will be able to give you suggestions based off of the type of food you are going for. Also if you know you are going for a specific type of food you can limit that type of food in your other meals that day. For example if you are going out for Mexican and really want salsa then you can try to limit your potassium in the other items that you eat.

Remember restaurant portions are often larger than those you eat at home. You can always ask for half to be boxed up in the beginning or share a meal with your table.

Don't be afraid to ask your server for special requests, such as sauce on the side or no salt. The worst thing they can do is say no. Also, remember to bring your phosphate binders with you and take them as directed with your meal.

Don't get caught up on what you can't have, but use this as an opportunity to try something new and enjoy!

INSTEAD OF	TRY
Mexican	
tomato-based salsa	chili pepper salsa
avocado, mango, papaya, guava	fajitas where you can control the condiments you add
beans, Spanish rice	plain rice
Italian	

tomato and cream sauces	pesto sauce
olives and cheeses	Breaded calamari
pizza with pepperoni, sausage, olives, anchovies	(white pizza)pizza with chicken and peppers
cheese ravioli with tomato sauce	Grilled fish, veal picatta, shrimp scampi
Asian	
extra soy sauce, fish sauce and MSG (monosodium glutamate)	ginger, hot pepper oil
fried rice	steamed rice
meat, fish and/or poultry mixed with sauce	grilled fish and chicken, tempura, sushi (no California rolls with avocado) or stir-fried vegetables with sauce on the side
Southern	
dried beans or black eyed peas	string beans or corn
salted/cured meats, sausages, bacon, salt pork	fried chicken with the skin removed
cooked greens or spinach	Okra
Fast Food	
milkshake	small ginger ale or lemon-lime soda

French fries, baked potato	Rice
large, super- or king-sized hamburgers or cheeseburgers	regular or junior-sized hamburgers

How to read food labels

Food labels are a great tool. They can help you choose healthier, more kidney-friendly foods. However, before you go to the grocery store, talk with your renal dietitian. Since you need to watch certain nutrients such as potassium and phosphorous that were highlighted earlier in this course. Your renal dietitian can tell you how many milligrams (mg) or how much you should have each day. Once you know this, you're ready to shop. ⁽⁴⁾

Serving size: The first place to start when you look at the Nutrition Facts is the serving size. The label on the container is based on a serving.

Amount per serving: This line tells you the number of calories per serving and the number of calories from fat.

Calories: This is the amount of calories in one serving. A calorie is a measure of the fuel you get from the food you eat.

Percent daily values: The percent daily values are based on a 2,000 calorie diet, which has 30% or less calories from fat a day. Knowing the individual value allows you to look at the information in the left column and decide whether or not these numbers fit into your daily allowance for that nutrient.

Nutrition Facts	
Serving Size 1 cup (228 g)	
Servings per Container 2	
Amount Per Serving	
Calories 250	Calories from Fat 110
% Daily Value	
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Potassium 700mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4 %
Vitamin C	2 %
Calcium	20%
Iron	4 %
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your caloric needs.	
	Calories 2,000 2,500
Total Fat	Less Than 65mg 80g
Sat Fat	Less Than 20g 25g
Cholesterol	Less Than 300mg 300mg
Sodium	Less Than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g

Servings per container: This lets you know how many servings are in the package. This number is very important and must be taken into account whenever you buy something that contains more than one serving. To find out how much you eat, multiply the amount in one serving and the number of servings you eat.

Vitamins & Minerals: The food manufacturers are required to list the amount of vitamin A, vitamin C, calcium and iron that are in this product.

Food label tips:

- Items that you need to look out for are generally listed by content in grams or milligrams and percent daily values. It is important to remember that these values are for someone without kidney disease, so your needs may differ.
- A good rule of thumb is: food is low in phosphorus if it has fewer than 50 mg (or less than 5%). It's high in phosphorus if it has more than 150 mg (or greater than 15%). (5)
- In general, a food is low in potassium if it has fewer than 100 mg (or less than 3%). More than 200 mg (or greater than 6%) is high. (6)
- Be aware. If a food label doesn't list an item such as phosphorus in the example image, it doesn't mean it isn't in there.
- Another important thing to look at is serving size. For example a 20oz bottle of cola has 2.5 servings per bottle. If you drank the entire bottle, the values would need to be multiplied by 2.5.
- When in doubt, you can always save the labels and go over questions with your dietician.

Modify your favorite recipes

Cooking at home is a great way to save money and also put you in control of what you are eating. Living on a kidney friendly diet does mean that you have to limit or modify your recipes, but doesn't mean you can't enjoy meals with your family. In fact, sharing meals can be a good way to come together.

Keeping a journal and meal planning will help you stay on your diet and buying foods in bulk that can be used for multiple meals will keep your shopping costs down.

Family meals should be a source of comfort and not stress. Your family loves and cares for you so they will be willing to compromise. Getting everyone involved will help make those decisions easier.

There are many resources for dialysis friendly recipes here are some [2] compiled by DaVita that can be used as a starting point.

Also, your dietician and other members of your care team will be able to point you towards flavorful foods.

Just like dining out, this will give you a chance to try new items and expand your choices. Maybe you and your family will discover a new appreciation for pesto sauces instead of tomato based.

1. Capusa C, Garneata L, Mircescu G, Stancu, S. *Effects of a Supplemented Hypoproteic Diet in Chronic Kidney Disease*. Journal of Renal Nutrition Volume 17, Issue 3 May 2007.
2. *USDA National Nutrient Database for Standard Reference, Release20*. National Agriculture Library.
<http://www.nal.usda.gov/fnic/foodcomp/Data/SR20/nutrlist/sr20a203.pdf> [3]
3. *Sudden Cardiac Death in Hemodialysis Patients: An In-Depth Review*. American Journal of Kidney Disease. [http://www.ajkd.org/article/S0272-6386\(11\)00595-6/fulltext#sec2.4](http://www.ajkd.org/article/S0272-6386(11)00595-6/fulltext#sec2.4) [4]
4. *Reading Nutritional Labels on Food Labels*. Children's Hospital of The King's Daughters. <http://www.chkd.org/HealthLibrary/Facts/Content.aspx?pageid=0416> [5]
5. *Phosphorus and your CKD Diet*. National Kidney Foundation.
www.kidney.org/atoz/content/phosphorus.cfm [6]
6. *Potassium and you CKD Diet*. National Kidney Foundation.
<http://www.kidney.org/atoz/content/potassium.cfm> [7]

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Links

- [1] <http://dpcedcenter.org/classroom/nutrition-management-kidney-disease-patients/what-you-should-track-dialysis-patient>
- [2] <http://www.davita.com/recipes/>
- [3] <http://www.nal.usda.gov/fnic/foodcomp/Data/SR20/nutrlist/sr20a203.pdf>
- [4] [http://www.ajkd.org/article/S0272-6386\(11\)00595-6/fulltext#sec2.4](http://www.ajkd.org/article/S0272-6386(11)00595-6/fulltext#sec2.4)
- [5] <http://www.chkd.org/HealthLibrary/Facts/Content.aspx?pageid=0416>
- [6] <http://www.kidney.org/atoz/content/phosphorus.cfm>
- [7] <http://www.kidney.org/atoz/content/potassium.cfm>