



RENAL DIET INFORMATION

Eating Right on a Renal Diet:
Important Information for Patients on Hemodialysis

DIETARY INFORMATION AND HOW IT CAN AFFECT YOUR DIALYSIS

This booklet explains dietary information, providing you guidance in choosing an appropriate diet. Following is a list of topics.

1. DIALYSIS PATIENTS NEED TO CAREFULLY WATCH THEIR INTAKE OF potassium, phosphorus, sodium and daily fluids.
 - Why Regulate Sodium?
 - Why Regulate Phosphorus?
 - Why Regulate Fluid Intake?
2. HEALTHY KIDNEY FUNCTION – What Happens When Kidneys Fail?
3. SAMPLE LAB TEST
4. FLUID INTAKE
5. MAKING SMART FOOD CHOICES
 - Meat (Protein) Options
 - Fruit Options
 - Vegetables & Legume Options
 - Dairy / Dairy Substitute Options
 - Beverage Options
 - Bread / Cereal / Grain Options
6. SPECIAL CONSIDERATIONS:
7. PORTION CONTROL AND SERVING SIZE
8. LEACHING VEGETABLES
9. REMEMBER

1. DIALYSIS PATIENTS NEED TO CAREFULLY CONTROL THEIR INTAKE OF POTASSIUM, PHOSPHORUS, SODIUM AND DAILY FLUID INTAKE.

WHY REGULATE SODIUM?

Sodium is a mineral commonly found in most natural foods. Processed foods, however, often contain higher levels of sodium due to added salt.

Table salt is actually a combination of sodium and chloride.

Sodium is involved with water balance and acid-base balance within the human body.

High sodium levels can cause:

- Increased feeling of thirst
- Edema (water retention in body tissue)
- High blood pressure

WHY REGULATE POTASSIUM?

Potassium is a mineral found in foods and within your body that helps to regulate the beating of your heart and the contraction of your muscles.

High Potassium levels can cause:

- Weak heart
- Irregular heart beat
- Heart attack
- Difficulty breathing
- Death

WHY REGULATE PHOSPHORUS?

Phosphorus is a mineral commonly found in almost all foods. However, renal patients need to be aware of some foods that have a much higher content and limit them in their diets. When phosphorus builds up in the body, it causes calcium to build up.

High Phosphorus levels can cause:

- Weak, painful, brittle bones
- Itchy skin
- Calcium deposit "Crystals"

WHY REGULATE FLUID INTAKE?

Because people with kidney disease have a reduced ability to produce urine, it is necessary that they limit their fluid intake. Excess fluid buildup within the body can be hard on the heart and lungs and also cause fluid buildup in bodily tissues known as edema.

Fluid intake is often measured for individual patients as "urine production plus 500ml" with the 500ml accounting for fluid loss through the skin and lungs.

The general recommendation for fluid intake is less than 1500ml or less than 48 fluid ounces.

2. HEALTHY KIDNEY FUNCTION – WHAT HAPPENS WHEN KIDNEYS FAIL?

Kidneys function to regulate the amount of sodium, potassium, phosphorous, and other minerals as well as fluid within our bodies.

When kidneys begin to fail, they are no longer able to keep these nutrients within a balanced range. A person can become very sick because these nutrients begin building up.

Dialysis and a carefully planned diet can help your body's chemical balance stay within a desirable range.

Lab results such as **BUNs**, **Potassium** and **Fluid Intake** are all influenced by your diet.

If you properly control your diet, the next time you get dialysis you may hear . . .

Your potassium is not too high!

You have a high B-U-N that is within normal range!

You do not have major fluid overload!

Your labs results look good!

3. SAMPLE LAB TEST

1. Chemical (Nutrient)	2. Personal Sample Values	3. Normal Range
Sodium	134	(136 - 145)
Potassium	6.6	(3.5 - 4.5)
BUN	34	(8.4 – 25.7)
Creatinine	7.0	(0.7 – 1.3)

The sample lab test above shows the current levels of nutrients present in your blood.

1. Nutrient Column.

2. Personal Sample Values.

3. Comparison Column (normal or desirable ranges).

This is a sample, but as you can see, nutrient (chemical) have an independent value.

Controlling the amount of each of these nutrients that you are getting in your diet, in combination with going to your regular dialysis sessions is critical to staying healthy.

Pay close attention to your lab values and be cautious if you find that you are consistently above the desirable range for that nutrient. Become familiar with healthier alternative food choices that are lower in that nutrient.

4. FLUID INTAKE

Fluid intake is very important.

Make sure that you count all fluids that you take in. This includes drinks that you take with medicine as well as foods that become liquid at room temperature or that melt in your mouth.

Also, certain foods, such as soups, should be counted as part of your fluid intake.

Fluid build up can make dialysis uncomfortable for you.

Keep intake limited to 32-40 ounces.

5. MAKING SMART FOOD CHOICES

Making smart food choices can seem difficult because of new dietary restrictions and considerations. Knowing which foods to avoid and which foods are smart choices can make decisions easier.

MEAT (PROTEIN) OPTIONS

- Servings allowed per day 8-10 (1oz serving size)
- Controlling your protein intake is a good way to control your BUN!
- Too much protein (beyond 8-10 ounces daily) can make this number high!
- Processed meats as well as meats with added salt should also be avoided due to their higher sodium content.
- Also many nuts and legumes should be avoided due to their high phosphorus content.

Eat This:

Beef, Chicken, Egg Substitute & Eggs, Fish, Lamb, Pork (fresh)—chops & pork roast, Shellfish, Tofu (soft), Tuna (canned in water), Turkey, Veal, Wild Game

Not That:

Bacon, Ham, Sausages, Hot Dogs, Lunch Meats, Canned Meats, Bologna.

FRUIT OPTIONS

- Servings limited to 4 per day (½ cup or a small piece equals a serving)
- Many fruits contain nutrient levels (such as potassium) that are harmful to dialysis patients. Educate yourself on what fruits you can and cannot have, as well as how much.

Eat or Drink This:

Apple Juice, Apples, Applesauce, Apricot Nectar, Apricots (canned), Blackberries, Cherries, Cranberries, Cranberry Juice, Cranberry Sauce, Figs (fresh), Fruit Cocktail, Grapefruit Juice, Grape Juice, Grapes, Lemon, Lemon Juice, Lime, Lime Juice, Loganberries, Lychees, Peach (canned), Peach Nectar, Pears (canned), Pineapple, Plums, Raspberries, Strawberries, Tangerines

Not That:

Bananas, Oranges, Orange Juice, Tomatoes & Tomato Products (for those who consider them to be a fruit), Cantaloupe, Prunes, Prune Juice, Papaya, Honeydew Melon

VEGETABLE & LEGUME OPTIONS

- Servings limited to less than 1 cup per day.
- **Leaching** is a way of preparing food that extracts nutrients that are bad for people with kidney disease. It makes some foods possible for you to eat if prepared correctly. See below for a list of what foods that can be eaten this way and instructions for preparing them.

Eat This:

Alfalfa Sprouts, Arugula, Asparagus, Bean Sprouts, Beets (canned), Cabbage (green, red), Carrots, Cauliflower, Celery, Chayote, Chili Peppers, Chives, Coleslaw, Corn, Cucumber, Eggplant, Endive, Garlic, Gingerroot, Green Beans, Hominy, Jalapenos (fresh), Kale, Leeks, Lettuce, Mixed Vegetables, Mushrooms, Onions, Parsley, Peas (English), Pimentos, Radicchio, Radishes, Seaweed Kelp, Spaghetti Kelp, Summer Squash (Scallop, Crookneck, Straightneck, Zucchini), Sweet Peppers (Green, Red, Yellow), Tomatillos, Turnips, Turnip Greens, Water Chestnuts, Watercress, Yambean (jicama—cooked)

Not That:

Avocado, Tomatoes & Tomato Products, Split Peas, Nuts, Red Beans, Lima Beans, Lentils, Garbanzo Beans, White Beans, Black Beans, Baked Beans (most beans should be avoided), Sweet Potatoes.

DAIRY / DAIRY SUBSTITUTE OPTIONS

- Limit consumption to ½ cup or 1 ounce per day
- **Some low phosphorus cheese & dairy products that are available include:** Butter and tub margarine, Cream Cheese, Heavy Cream, Ricotta Cheese, Brie Cheese, Non-Dairy Whipped-Topping, Sherbet
- **Fats that are acceptable:** Butter, Cream Cheese, Margarine, Mayonnaise, Miracle Whip, Nondairy Creamers, Salad Dressings, Sour Cream, Vegetable Oils (preferably canola or olive oil)

Eat or Drink This:

Nondairy Creamers, Nondairy Frozen Dessert Toppings (Cool Whip), Nondairy Frozen Desserts (Mocha Mix), Rice Milk (Unfortified), Nondairy Creamers, Nondairy Frozen Dessert Toppings (Cool Whip)

Not That:

Milk, Cheese and other dairy products should be consumed in very limited quantities due to their phosphorus content.

BEVERAGE OPTIONS

- Follow fluid regulation guidelines
- Remember to count liquid foods as part of your intake.
- Since many fruit and vegetable juices are not good for people on dialysis, you should check each item for safety prior to consuming.

Drink This:

7-up, Cherry 7-up, Cream Soda, Ginger Ale, Grape Soda, Lemon-lime Soda, Mellow Yellow, Mountain Dew, Orange Soda, Root Beer, Slice, Sprite, Coffee, Fruit Punch, Hi-C (cherry, grape), Kool-Aid, Lemon/Limeade, Mineral Water, Nectars (apricot, peach, pear), Nondairy Creamers, Sunny Delight, Tea

Not That:

Dark Sodas such as colas, Orange Juice, Tomato Juice, Prune Juice, Mango Juice, Grapefruit Juice, Guava & Strawberry Guava or Juices, Papaya Juice, Coffee and Tea (Limited to 3 cups).

BREAD/CEREAL/GRAIN OPTIONS

- 6-8 Servings per day
- ½ cup or 1 slice serving size
- Many whole grain foods contain nuts & legumes that are high in their potassium & phosphorus contents.

Eat This:

Bagels (plain, egg, blueberry, raisin), Bread (white, French, Italian, rye, soft wheat), Bread Sticks (plain), Cereals (dry, low salt), Cereals Cooked (such as cream of rice, or wheat, Farina, Malt-o-meal), Couscous, Crackers, Dinner Rolls or Hard Rolls, English Muffins, Grits, Hamburger or Hotdog Buns, Macaroni, Melba Toast, Noodles, Oyster Crackers, Pita Bread, Popcorn (unsalted), Pretzels (unsalted), Rice (brown & white), Rice Cakes (apple cinnamon, etc), Spaghetti, Tortillas (flour)

Not That:

Whole grain breads and muffins, bran cereals.

6. SPECIAL CONSIDERATIONS

Foods that are frozen, canned, or instant should often be avoided; also bottled sauces, pickles, olives, and foods that are high in MSG should be avoided as well. Do not forget to account for condiments in your dietary analysis.

7. PORTION CONTROL AND SERVING SIZE

Remember:

- Portion control and serving size is critical in controlling dietary intake.
- Pay attention to how much a serving is equal to.
- Pay special attention to how a serving is defined: Ounces vs. Servings, etc.

Protein (Meat) Servings	Bread, Cereal, & Certain Grains	Vegetables
Recommended Intake: 8-10 oz per day-	Servings: 6-11	Servings: 2-3 servings of low potassium vegetables
1/4 pound of hamburger = 3 ounces	1 serving = 1 slice of bread	1 serving = 1/2 cup vegetables

8. LEACHING VEGETABLES-

Preparation of vegetables can leach out (remove) high levels of potassium. This can be done with **Potatoes, Carrots, Beets, and Rutabagas.**

To leach your vegetables

- Peel vegetables and place in cold water.
- Slice vegetables (1/8 inch thickness)
- Rinse vegetables in warm water for a few seconds.
- Soak for a minimum of 2 hours in warm water.
- Soak vegetables in 10 times the amount of water as the amount of vegetables. For example, if you are soaking 1 cup of vegetables, add 10 cups of water.
- If soaking longer, change the water every four hours.
- Rinse under warm water again for a few seconds.
- Cook vegetables with five times the amount of water to the amount of vegetables. For example, if you are cooking 1 cup of vegetables, add 5 cups of water.

For **Squash, Mushrooms, Cauliflower, and Frozen Greens**

- If vegetables are frozen allow thawing to room temperature and drain.
- Rinse vegetables (fresh & frozen) in warm water for a few seconds.
- Using warm water, soak for at least 2 hours, with ten times the amount of water as the amount of vegetables. If soaking longer change the water every 4 hours.
- Using warm water, rinse the vegetables again for a few seconds.
- Cook vegetables using 5 times the amount of water as the amount of vegetables.

9. REMEMBER

Controlling these elements in your diet will help to make sure your dialysis is a success:

- Sodium and Phosphorus
- K⁺ or Potassium
- Protein and Fluid Intake

For more information on making good food choices, visit:

http://www.kidney.org/atoz/content/dietary_hemodialysis.cfm