

Renal Eating Plan

One of the most important functions of the kidney is to remove extra fluid and waste products from the blood. When your kidneys fail, they are unable to filter and remove all of the waste products from your blood. A build up of waste products and fluid may cause further damage to your kidneys. Much of the water and waste products come from what you eat and drink. You can control the amount of waste products that build up by following a special renal diet. The following are important parts of the renal diet:

PROTEIN — Your body uses protein to build muscle, bone, and skin, to fight infection, and to regulate body functions. If you are on dialysis, your protein needs are higher. Too little protein may lead to loss of muscle mass or slow healing. Protein is found mainly in animal foods (meat, poultry, fish, eggs, and dairy products). Smaller amounts of protein are found in plant foods (vegetable and grains). If your doctor recommends a protein restriction, it is important that you choose the high quality protein found in animal foods.

POTASSIUM — Potassium is a mineral that regulates muscle contraction, especially muscle contraction of the heart. If potassium gets too high in the blood stream, the heart may beat irregularly and cardiac arrest can occur. Some fruits, vegetables, dried beans, and salt substitutes can be very high in potassium.

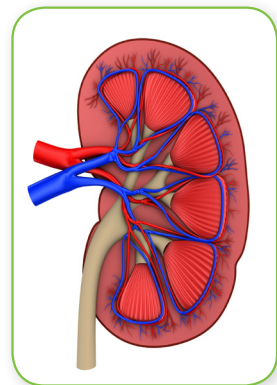
SODIUM — Sodium is a mineral that helps regulate fluid balance and blood pressure. If sodium is too high in the blood stream, a thirst mechanism is triggered to ensure increased fluid intake in order to dilute the sodium. With kidney failure, your body can't get rid of the extra sodium and water, resulting in increased blood volume, swelling, or edema. Sodium is found mostly in table salt, cured foods, and processed foods. Salt should not be added to foods during cooking or at mealtime. Herbs and spices can add flavor without using salt.

PHOSPHORUS — Phosphorus is a mineral that helps build strong bones and teeth. If phosphorus is too high in the blood stream, calcium levels in the blood will drop. In response to this, your body removes calcium from the bones to maintain sufficient calcium levels in the blood. This can cause brittle bones resulting in bone pain and fractures. Phosphorus is found mostly in milk, cheese, yogurt, and some plant foods. Dairy products should be limited to 8 oz. per day.

PHOSPHATE BINDER — Since phosphorus is found in almost all foods, it is difficult to restrict intake to a low level. Your doctor may prescribe a medication called a "phosphate binder." A phosphate binder (like calcium carbonate, Tums, Phoslo, Renagel or Renvela, or Fosrenol) can bind with phosphorus in the stomach and intestine, keeping it from being absorbed into the blood. The binder should be taken at the beginning of the meal, every time you eat. A smaller dose should be taken with snacks.

CALCIUM — Calcium is a mineral that works with phosphorus to maintain healthy bones. It is found mainly in dairy products. Because dairy products are limited due to their phosphorus content, you may need a calcium supplement.

FLUID — When your kidneys are unable to remove excess fluid, the fluid you eat and drink needs to be limited. Anything that is liquid at room temperature is counted as part of your fluid intake. This includes water, milk, juices, coffee, tea, soft drinks, alcoholic beverages, soups, syrups or juice in canned fruits, gelatin, ice cream, sherbet, or frozen yogurt.



Dietitian: _____

Phone: _____

Facility: _____

Where do I Start?

Diet modification must be tailored to your personal needs. Fluid status, serum albumin, potassium, phosphorus, calcium, and sodium blood levels are all used as a measuring stick to determine any changes that need to be made to your individual diet. **However, here are a few easy tips to help you begin eating right!**

Control fluid intake

- Drink only when thirsty. Do not carry a mug of fluid with you all day long.
- Drink lemonade or lemon water instead of plain water.
- Put lemon juice in ice cubes. Use half a lemon per tray.
- Suck on lemon or lime slices.
- Brush your teeth more often.
- Rinse your mouth with mouthwash. Do not swallow the mouthwash!
- Take your pills with meals or soft foods like applesauce or pudding.
- Suck on sugar-free hard candy or chew sugar-free gum.
- Drink beverages cold rather than hot.
- Spread fluids throughout the day. Drink small amounts from smaller cups.
- Freeze fruit juices or water in ice cube trays. Suck on the ice – don't chew – to make your fluids "last longer."



Watch your salt intake

- Try to buy fresh foods. Packaged or prepared foods may be high in sodium. When you buy fresh foods you are in control of how much salt is added.
- Try lower-sodium versions of your favorite packaged foods and frozen meals.
- To add flavor to your food try herbs and spices that are naturally sodium free.
- Be cautious with salt substitutes or lite salt, they often will replace the sodium with potassium.

Monitor your protein intake

- If you are on dialysis aim for 6–8 ounces of protein.
- Try consuming 2–3 ounces of protein each meal.
- If you are not on dialysis try to eat smaller portions of protein, but be sure to include it in your diet.
- Serum albumin is a protein found in your blood. A lab test can measure this protein to show how well you're eating. Aim for an albumin level between 3.4–5.

Look out for phosphorus

- Start checking the ingredient list of your favorite foods to see if phosphorus has been added.
- Remember that foods higher in phosphorus include meat, poultry, fish, dairy products, whole grains, sodas and milk.
- When your labs are measured, a good range for phosphorus is 2.7 to 4.6.

Choose foods that will help you control your potassium

- Review the list of fruit and vegetables on page five, try to stick with foods that are low or moderate in their potassium.
- Notice the portion sizes of your fruit and vegetables. If you eat more than one portion remember that the potassium will add up too.
- A good range for potassium on your labs is 3.5 to 5.0.

Other Hints:

Removing potassium from potatoes

White potatoes and sweet potatoes are a mainstay in many people's diets. Unfortunately, they're also high in potassium. The good news is that you can remove some of the potassium in potatoes, so you can enjoy them with dinner.

To cook potatoes so they're lower in potassium:

Method 1:

1. Grate or slice potatoes thinly, about 1/8-inch per slice.
2. Combine the potatoes slices with a **LOT of water** — about 10 cups of water to 1 cup of potatoes.
3. Cook the potatoes until they're fork tender:
 - Boil them on the stove for about 10 to 12 minutes.
 - Microwave them for about 20 to 30 minutes.
 - Cook them in a pressure cooker for about 7 minutes.
4. Discard the cooking water.

Method 2:

1. Grate or slice potatoes thinly, about 1/8-inch per slice.
2. Combine potatoes with room temperature water, 2 cups of water to 1 cup of potatoes.
3. Bring to a boil, pour off water.
4. Add 2 more cups of room temperature water to potatoes, bring to a boil again.
5. Discard the cooking water.

Finish by mashing the potatoes, then season.




Food Tables

The food tables on pages 4 – 6 list a variety of foods from different food groups. Use the tables to help safely select foods that fit your diet.



Additional resources:

www.ikidney.com

www.kidney.org (National Kidney Foundation)

Food Groups	Acceptable Foods	Foods to Eat With Caution These foods are high in potassium, phosphorus, or sodium
<p>Milk: Limit to 1 cup per day Remember to measure</p>	<ul style="list-style-type: none"> • Milk • Cream • Half & half • Ice milk, • Ice cream • Yogurt • Evaporated milk • Sweetened condensed milk • Sherbet • Rice milk (rice dream) • Cream cheese** • Sour cream** <p>**Limit to 2 tbsp. per day:</p>	<ul style="list-style-type: none"> • Buttermilk • Chocolate milk • Soy milk • Almond milk 
<p>Milk substitutes: Serving size is ½ cup ____ servings/day</p>	<ul style="list-style-type: none"> • Nondairy frozen desserts • Nondairy dessert toppings • Nondairy creamer 	<ul style="list-style-type: none"> • None
<p>Meat: Limit to 6–8 oz/day Or ____ oz a day</p> 	<ul style="list-style-type: none"> • Red meats: beef, lamb, pork, veal • Poultry: chicken, duck, turkey, goose, Cornish hen • Fish and Seafood: fish — fresh and frozen, tuna packed in spring water, salmon canned without salt, clams, oysters, crab, lobster, shrimp • Other: wild game, eggs, low salt cottage cheese 	<ul style="list-style-type: none"> • Bacon, sausage, hotdogs, luncheon meats, organ meats • Tuna, salmon canned with salt, sardines • Dried beans: black, pinto, kidney, navy, lima. • Nuts, nut butters, peanut butter • Cheese (limit to 3 times /week)
<p>Starches: – Serving size includes: 1 slice of bread, – 1 small muffin or tortilla – 4–6 crackers – 10 chips or pretzels – ½ cup rice, pasta, or cereal Choose 6–11 servings/day Or ____ servings/day</p>	<ul style="list-style-type: none"> • Breads, Cereal, & Grains: <ul style="list-style-type: none"> – Bagel – Bread (French, Italian, sourdough, white) – Cereal, hot or cold (no bran) – Cornmeal – Dinner rolls – English muffin – Hamburger or hot dog bun, – Muffin – Pancake – Pasta – Pita bread – Rice – Tortilla – Waffle • Crackers & Snacks: <ul style="list-style-type: none"> – Butter crackers – Graham crackers – Low salt saltines – Unsalted popcorn (1 ½ cup) – Pretzels, unsalted – Tortilla chips,unsalted • Desserts: <ul style="list-style-type: none"> – Cake – Doughnut – Fruit pie (apple, berry, cherry, peach), – Sugar cookie, – Sweet roll – Sweetened gelatin – Vanilla wafer 	<ul style="list-style-type: none"> • Bread, Cereal & Grains: <ul style="list-style-type: none"> – Bran cereal – Bran muffins – Bread (pumpernickel, dark rye, whole-wheat, and oatmeal bread) – Granola cereals or bars – Grape-nuts – Whole-wheat or whole grain cereals – Whole grain pastas • Crackers & Snacks: <ul style="list-style-type: none"> – Salted crackers – Whole-wheat crackers 

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Food Groups	Acceptable Foods		Foods to Eat With Caution These foods are high in potassium, phosphorus, or sodium									
<p>Vegetables: Serving size: ½ cup Choose 3–4 servings/day Or ____ servings/day</p> 	<p>Must be prepared and/or canned without salt</p> <table border="0"> <tr> <td data-bbox="397 363 641 426">Low potassium (≤150 mg):</td> <td data-bbox="662 363 922 426">Medium potassium (150–200 mg):</td> </tr> <tr> <td data-bbox="397 430 641 940"> <ul style="list-style-type: none"> - Alfalfa sprouts - Bamboo sprouts (canned) - Bean sprouts - Cucumber - Green or wax beans - Lettuce, all types - Peppers, green or sweet - Turnip - Water chestnuts, canned - Watercress </td> <td data-bbox="662 430 922 1123"> <ul style="list-style-type: none"> - Asparagus - Broccoli, raw - Cabbage, cooked - Carrots, cooked - Cauliflower - Celery - Collard, cooked - Corn (½ ear) - Eggplant - Kale - Leached potatoes - Mushroom, canned - Mustard greens - Onion - Peas, green - Snow peas - Summer squash (zucchini, crookneck) - Turnip greens </td> </tr> </table>		Low potassium (≤150 mg):	Medium potassium (150–200 mg):	<ul style="list-style-type: none"> - Alfalfa sprouts - Bamboo sprouts (canned) - Bean sprouts - Cucumber - Green or wax beans - Lettuce, all types - Peppers, green or sweet - Turnip - Water chestnuts, canned - Watercress 	<ul style="list-style-type: none"> - Asparagus - Broccoli, raw - Cabbage, cooked - Carrots, cooked - Cauliflower - Celery - Collard, cooked - Corn (½ ear) - Eggplant - Kale - Leached potatoes - Mushroom, canned - Mustard greens - Onion - Peas, green - Snow peas - Summer squash (zucchini, crookneck) - Turnip greens 	<table border="0"> <tr> <td data-bbox="984 321 1227 384">High potassium (200–400 mg):</td> <td data-bbox="1255 321 1515 384">Very high potassium (≥ 400):</td> </tr> <tr> <td data-bbox="984 388 1227 1123"> <ul style="list-style-type: none"> - Artichoke - Beets - Brussel sprouts - Carrots, raw - Celery, cooked - Chard/collards, raw - Chili pepper - Kohlrabi - Mushrooms, fresh, cooked - Okra - Parsnips - Potato, boiled or mashed - Pumpkin - Rutabagas - Cooked spinach - Tomato, fresh, juice, or sauce, - Vegetable juice (like V-8) </td> <td data-bbox="1255 388 1515 898"> <ul style="list-style-type: none"> - Avocado - Bamboo shoots, fresh cooked - Beet greens - Chinese cabbage, cooked - Chard, cooked - Potato, hashed browned, or baked - Potato chips - Sweet potato - Tomato paste - Winter squash (acorn, banana, butter-nut) </td> </tr> </table>		High potassium (200–400 mg):	Very high potassium (≥ 400):	<ul style="list-style-type: none"> - Artichoke - Beets - Brussel sprouts - Carrots, raw - Celery, cooked - Chard/collards, raw - Chili pepper - Kohlrabi - Mushrooms, fresh, cooked - Okra - Parsnips - Potato, boiled or mashed - Pumpkin - Rutabagas - Cooked spinach - Tomato, fresh, juice, or sauce, - Vegetable juice (like V-8) 	<ul style="list-style-type: none"> - Avocado - Bamboo shoots, fresh cooked - Beet greens - Chinese cabbage, cooked - Chard, cooked - Potato, hashed browned, or baked - Potato chips - Sweet potato - Tomato paste - Winter squash (acorn, banana, butter-nut)
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<p>Fruit: Serving size is ½ cup canned or juice, 1 medium piece Choose 2–3 servings/day Or ____ servings/day</p> 	<table border="0"> <tr> <td data-bbox="397 1155 641 1218">Low potassium (< 150 mg):</td> <td data-bbox="662 1155 922 1218">Medium potassium (150 – 200 mg):</td> </tr> <tr> <td data-bbox="397 1222 641 1705"> <ul style="list-style-type: none"> - Applesauce - Blueberries - Cranberries (1 cup) - Fruit cocktail - Grape juice - Lemon - Lemon juice - Papaya nectar - Pear nectar - Pears, canned - Plums (1) - Raspberries, frozen </td> <td data-bbox="662 1222 922 1938"> <ul style="list-style-type: none"> - Apple - Apple juice - Apricot nectar - Blackberries - Cherries - Figs, canned - Tropical fruit cocktail - Gooseberries - Grapefruit (½) - Grapefruit juice - Grapes (15) - Mango - Peaches, canned - Pear, fresh - Pineapple, fresh, canned or juice - Raisins (2 tbsp) - Raspberries, raw - Strawberries - Tangerine - Watermelon </td> </tr> </table>		Low potassium (< 150 mg):	Medium potassium (150 – 200 mg):	<ul style="list-style-type: none"> - Applesauce - Blueberries - Cranberries (1 cup) - Fruit cocktail - Grape juice - Lemon - Lemon juice - Papaya nectar - Pear nectar - Pears, canned - Plums (1) - Raspberries, frozen 	<ul style="list-style-type: none"> - Apple - Apple juice - Apricot nectar - Blackberries - Cherries - Figs, canned - Tropical fruit cocktail - Gooseberries - Grapefruit (½) - Grapefruit juice - Grapes (15) - Mango - Peaches, canned - Pear, fresh - Pineapple, fresh, canned or juice - Raisins (2 tbsp) - Raspberries, raw - Strawberries - Tangerine - Watermelon 	<table border="0"> <tr> <td data-bbox="984 1155 1227 1218">High potassium (200–350 mg):</td> <td data-bbox="1255 1155 1515 1218">Very high potassium (> 600 mg):</td> </tr> <tr> <td data-bbox="984 1222 1227 1642"> <ul style="list-style-type: none"> - Apricots, canned or fresh (3), dried (5) - Cantaloupe (⅛ of small), - Dates (¼ cup) - Figs, dried (2), - Kiwifruit (½ of medium) - Nectarine - Orange, fresh or juice - Peaches, fresh </td> <td data-bbox="1255 1222 1515 1453"> <ul style="list-style-type: none"> - Banana - Honeydew melon (⅓ of small), - Papaya - Prune juice, - Prunes, dried or canned (5) </td> </tr> </table>		High potassium (200–350 mg):	Very high potassium (> 600 mg):	<ul style="list-style-type: none"> - Apricots, canned or fresh (3), dried (5) - Cantaloupe (⅛ of small), - Dates (¼ cup) - Figs, dried (2), - Kiwifruit (½ of medium) - Nectarine - Orange, fresh or juice - Peaches, fresh 	<ul style="list-style-type: none"> - Banana - Honeydew melon (⅓ of small), - Papaya - Prune juice, - Prunes, dried or canned (5)
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<p>Other:</p> 	<ul style="list-style-type: none"> • Seasonings: <ul style="list-style-type: none"> - Artificial sweeteners - Allspice - Anise - Basil - Bay leaves - Caraway - Cardamom - Chili powder - Cinnamon - Clove - Coriander - Cumin - Dill - Garlic - Marjoram - Nutmeg - Oregano - Paprika - Parsley - Poppy seed - Rosemary - Sage - Savory - Tarragon - Thyme - Turmeric - Mrs. Dash • Fats: <ul style="list-style-type: none"> - Butter/margarine, - Oil - Mayonnaise and mayonnaise-like salad dressing - Shortening • High calorie foods: <i>(not for diabetics)</i> <ul style="list-style-type: none"> - Butter mints - Candy corn - Chews and roll ups - Fruit snacks - Gumdrops - Hard candy - Honey - Jam - Jelly or marmalade - Jelly beans - Lifesavers - Marshmallows - Sugar - Syrup 	<ul style="list-style-type: none"> • Seasonings: <ul style="list-style-type: none"> - Accent - Meat tenderizers - Bbq sauce - Bouillon - Catsup - Chili sauce - Dill pickles - Horse radish - MSG (monosodium glutamate) - Mustard - Relish - Table salt - Salts: onion, celery, garlic - Soy sauce - Steak sauce - Taco sauce - Teriyaki sauce - Worcestershire sauce
<p>Beverages: Limit to fluid restrictions</p> 	<ul style="list-style-type: none"> • Carbonated beverages (except cola) • Fruit flavored drinks • Ice • Kool-aid • Lemonade • Mineral water • Tang • Water 	<ul style="list-style-type: none"> • Bouillon • Broth • Coffee • Cola-type carbonated beverages • Consommé • Hot chocolate • Sport drinks (gatorade) • Tea

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