

## Section 8: Diets for Renal

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### Renal Diet Food Choice Lists

#### Use:

The Renal Diet is for individuals with decreased or absent kidney function. The National Kidney Foundation's Clinical Guidelines reference defines chronic kidney disease (CKD) as either kidney damage or decreased kidney function (decreased glomerular filtration rate [GFR] for three or more months). These clinical guidelines also established five stages of CKD indicating the potential, progressive nature of kidney disease. The kidney is responsible for filtering out many by-products produced by foods consumed. These by-products are not harmful in small amounts but become toxic in large amounts. The Renal Diet assists with controlling the build-up of some of these by-products of digestion and is restricted in protein, sodium, potassium, phosphorus and sometimes fluid. The amount of the restricted nutrients will depend on the individual and treatment provided. Therefore, any medical nutrition therapy must be individualized. Due to the progressive nature of CKD, Renal Diet prescriptions often change and individual diet plans need to be reassessed and readjusted by the Registered Dietitian.

#### Nutritional Adequacy:

The Renal Diet potentially may not provide adequate amounts of protein, iron, calcium, thiamin, riboflavin, niacin, vitamin D, potassium and fiber based on the current Dietary Reference Intakes/Recommended Dietary Allowances/Adequate Intakes, Food and Nutrition Board, Institute of Medicine, National Academy of Science, 1998-2011 for individuals ages 31 years and older.

The Liberalized Renal Diet and Liberalized Renal CCHO (Consistent Carbohydrate) Diet potentially may not provide adequate amounts of calcium, vitamin D, potassium and fiber based on the current Dietary Reference Intakes/Recommended Dietary Allowances/Adequate Intakes, Food and Nutrition Board, Institute of Medicine, National Academy of Science, 1998-2011 for individuals ages 31 years and older.

#### General Principles & Guidelines:

1. The Renal Diet may be contraindicated in individuals with poor food intake and appropriateness should be reviewed by the Registered Dietitian.
2. Individualization of the Renal Diet is essential to assist with diet acceptance, to meet/honor an individual's nutritional needs and preferences and to achieve as near normal blood nutrient levels as possible for the specific stage of renal disease being treated.
3. It is suggested to include an appropriate renal vitamin supplement and possibly a calcium supplement.
4. Salt is not used at the table and salt packets are not added to the tray.

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5. Salt substitutes containing potassium chloride should not be used unless authorized by a physician. These types of salt substitutes will affect the amount of potassium consumed.
6. If an individual is on dialysis, it is suggested that the Registered Dietitian or other member of the interdisciplinary team periodically contact the dialysis dietitian for coordination of care as needed.
7. In health care communities, a Regular Diet alone or a Regular Diet with Renal Precautions may be appropriate for the majority of older adults with CKD (see Section 9: Renal Precautions).
8. The Registered Dietitian can provide further and more specific Renal Diet information and guidelines to those individuals who are interested and have expressed a desire for such information.
9. The Renal Diet is planned utilizing a Food Choice List. Foods with similar amounts of protein, sodium, potassium and phosphorus are grouped together to assist in planning diet patterns. The chart entitled: Renal Food Choice Lists with Highlighted Averages for Renal Diet Calculations, was used to calculate the renal patterns in this manual and is adapted from the American Dietetic Association's National Renal Diet Professional Guide. The complete National Renal Diet may be obtained from the American Dietetic Association.

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**Renal Food Choice Lists with Highlighted Averages for Renal Diet Calculations (range of values is listed below highlighted averages):**

| <b>Food Group</b>                              | <b>Kcal</b>           | <b>Protein Grams</b> | <b>CHO Grams</b> | <b>Sodium Milligrams</b> | <b>Potassium Milligrams</b> | <b>Phosphorous Milligrams</b> |
|--|-----------------------|----------------------|------------------|--------------------------|-----------------------------|-------------------------------|
| Meats  | <b>75</b><br>50-100   | <b>7</b><br>6-8      | --               | <b>85</b><br>20-150      | <b>100</b><br>50-150        | <b>75</b><br>50-100           |
| Grains/Starches                                | <b>125</b><br>50-200  | <b>2.5</b><br>2-3    | <b>15</b>        | <b>75</b><br>0-150       | <b>55</b><br>10-100         | <b>40</b><br>10-70            |
| Vegetables:<br>Low Potassium                   | <b>55</b>             | <b>2.5</b>           | <b>5-15</b>      | <b>25</b>                | <b>85</b><br>20-150         | <b>40</b><br>10-70            |
| Vegetables:<br>Medium Potassium                | <b>55</b>             | <b>2.5</b>           | <b>5 – 15</b>    | <b>25</b>                | <b>200</b><br>150-250       | <b>40</b><br>10-70            |
| Vegetables:<br>High Potassium                  | <b>55</b>             | <b>2.5</b>           | <b>5-15</b>      | <b>25</b>                | <b>400</b><br>250-550       | <b>40</b><br>10-70            |
| Fruits:<br>Low Potassium                       | <b>60</b>             | <b>.5</b><br>0-1     | <b>15</b>        | <b>5</b><br>0-10         | <b>85</b><br>20-150         | <b>11</b><br>1-20             |
| Fruits:<br>Medium Potassium                    | <b>60</b>             | <b>.5</b><br>0-1     | <b>15</b>        | <b>5</b><br>0-10         | <b>200</b><br>150-250       | <b>11</b><br>1-20             |
| Fruits:<br>High Potassium                      | <b>60</b>             | <b>.5</b><br>0-1     | <b>15</b>        | <b>5</b><br>0-10         | <b>400</b><br>250-550       | <b>11</b><br>1-20             |
| Milk (4 ounces)                                | <b>75</b><br>50-100   | <b>4</b>             | <b>6</b>         | <b>85</b><br>20-150      | <b>200</b><br>50-350        | <b>150</b><br>100-300         |
| Liquid Non-Dairy<br>Creamer (LNDC)<br>4 ounces | <b>140</b>            | <b>.5</b>            | <b>12</b>        | <b>40</b>                | <b>80</b>                   | <b>30</b>                     |
| Fat Choices                                    | <b>45</b>             | --                   | --               | <b>55</b>                | <b>10</b>                   | <b>5</b>                      |
| High<br>Calorie/Sweet<br>Choices               | <b>125</b><br>100-150 | <b>.5</b><br>0-1     | <b>22</b>        | <b>50</b><br>0-100       | <b>50</b><br>0-100          | <b>50</b><br>0-100            |
| Salt Choices                                   | --                    | --                   | --               | <b>275</b><br>250-300    | <b>50</b><br>0-100          | <b>10</b><br>0-20             |

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**Meat and Meat Substitute Choice List (High Quality Protein):** One ounce of any of these supplies approximately: 7 grams protein (range 6 to 8), 75 calories (range 50 to 100), 85 mg sodium (range 20 to 150), 100 mg potassium (range 50 to 150), and 75 mg phosphorus (range 50 to 100). The following are weighed or measured in ounces and prepared without added salt.

| Food Item   | Type  |
|---|---|
| Beef  | Chicken<br>Lamb<br>Liver (beef or chicken)<br>Pork<br>Turkey<br>Veal                          |
| Fish  | Bass<br>Cod<br>Haddock<br>Halibut<br>Perch<br>Snapper<br>Catfish<br>Tuna (canned, low sodium) |
| Game Meat   | Lean Duck<br>Frog Legs<br>Rabbit<br>Quail<br>Venison<br>Cod<br>Squirrel                       |
| Other Protein Sources<br>(Use sparingly due to higher sodium and/or phosphorus value per ounce) | Peanut Butter<br>Cheese<br>Cottage Cheese<br>Processed meats like ham and sausage             |

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**Regular Starch/Grain Choice List:** Any of the following supplies approximately 2.5 grams protein (range 2 to 3), 125 calories (range 50 to 200), 15 grams carbohydrate, 75 mg sodium (range 0 to 150), 55 mg potassium (range 10 to 100), and 40 grams phosphorus (range 10 to 70). Remember to not add salt during or after cooking to assist with sodium intake.

| Food Item   | Amount              |
|---|---------------------|
| Bread, Regular, White, Rye, French, Italian   | 1 slice             |
| Hamburger Bun   | 1 small             |
| Bagel   | 1/2 medium          |
| Plain Muffin, Dinner Roll   | 1 medium            |
| Melba Toast, Regular  | 5 slices            |
| Saltines, Unsalted Tops   | 6 squares           |
| Bread Crumbs  | 3 Tbsp              |
| Cereals, Cooked, Unsalted   | 1/2 cup             |
| Cereals, Dry, Lower Sodium  |                     |
| Puffed Rice   | 1 cup               |
| Puffed Wheat  | 1 cup               |
| Sugar Smacks  | 1 cup               |
| Cereals, Dry  |                     |
| Apple Jacks   | 1 cup               |
| Fruit Loops   | 1 cup               |
| Cheerios, Kix, Rice Krispies, Special K, Rice Chex, Cornflakes  | 3/4 cup             |
| Sherbet (count as 4 ounces fluid)   | 1/2 cup             |
| Graham Crackers   | 3 squares           |
| Angel Food Cake, White Cake, White Cup Cakes  | 1 small serving     |
| Pound Cake, Sponge Cake   | 1 small serving     |
| Danish Pastry, Doughnut (no caramel or nuts)  | 1 small serving     |
| Butter Cookies  | 5                   |
| Vanilla Wafers, Sugar Wafers  | 6                   |
| Sugar Cookies   | 2                   |
| Shortbread Cookies  | 4                   |
| Unsalted Popped Corn  | 3 cups              |
| Unsalted Rice, Pasta  | 1/2 cup             |
| Salt Free Pretzels  | 1/2 cup, or 3/4 oz  |
| The following foods are high in sodium and/or phosphorus and are to be limited to one choice per day: |                     |
| Biscuit, Muffin   | 1 small             |
| Cornbread from mix  | 1 piece or 2 oz     |
| Fruit Pie   | 1/8 pie             |
| Oatmeal   | 1/2 cup             |
| Pancakes, Waffles (4 inch diameter)   | 1                   |
| Pretzels, Salted Sticks or Rings  | 10 sticks or 3/4 oz |
| RyKrisp   | 3                   |
| Sandwich Cookie   | 4                   |
| Whole Wheat Cereals, Bran Cereals   | 1/2 cup             |

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**Vegetable Choice List:** Any of the following supplies approximately 2.5 gram protein (range 2 to 3), 55 calories (range 10 to 100), 5 to 10 grams carbohydrate, 25 mg sodium (range 0 to 50), varying amounts of potassium (low, medium, high), and 40 mg phosphorus (range 10 to 70). All serving sizes are 1/2 cup, unless otherwise listed.

|  |  |
|--|--|
| Low Potassium 85 mg (range 20 to 150)      | Alfalfa Sprouts (1 cup)<br>Bamboo Shoots (canned)<br>Beans, Green or Wax<br>Bean Sprouts<br>Cabbage (raw)<br>Chinese Cabbage (raw)<br>Chard (raw)<br>Cucumber (peeled)<br>Endive<br>Escarole<br>Lettuce, all varieties (1 cup)<br>Pepper, Green, Sweet<br>Water Chestnuts (canned)<br>Watercress   |
| Medium Potassium 200 mg (range 150 to 250) | Artichoke<br>Broccoli<br>Cabbage (cooked)<br>Carrots, Raw (1 small)<br>Cauliflower<br>Celery, Ray (1 stalk)<br>Collards<br>Corn (or 1/2 ear)<br>Eggplant<br>Kale<br>Mushrooms (canned, or fresh raw)<br>Mustard Greens<br>Onions<br>Peas, Green<br>Radishes<br>Sauerkraut<br>Snow Peas<br>Spinach, Raw<br>Squash, Summer<br>Turnip Greens<br>Turnips |

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#### Vegetable Choice List (continued):

|  |   |
|--|---|
| High Potassium 400 mg (range 250 to 550) | Asparagus (5 spears)<br>Avocado (1/4 whole)<br>Beets<br>Brussels Sprouts<br>Celery (cooked)<br>Kohlrabi<br>Mushrooms (fresh cooked)<br>Okra<br>Parsnips<br>Pepper, Chili<br>Potato (boiled or mashed)<br>Pumpkin<br>Rutabagas |
|--|---|

**Fruit Choice List:** Any of the following supplies approximately .5 grams protein, 60 calories, 15 grams carbohydrate, 5 mg sodium (range 0 to 10), varying amounts of potassium (low, medium, high) and 11 mg phosphorus (range 1 to 20). All serving sizes are 1/2 cup, unless otherwise listed.

|                                       |  |
|---------------------------------------|--|
| Low Potassium 85 mg (range 20 to 150) | Applesauce<br>Blueberries<br>Cranberries (1 cup)<br>Cranberry Juice Cocktail (1 cup)<br>Grape Juice<br>Lemon (1/2)<br>Papaya Nectar<br>Peach Nectar<br>Pears (canned)<br>Pear Nectar<br>Plums (canned or fresh) (1 medium) |
|---------------------------------------|--|

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#### Fruit Choice List (continued):

|  |   |
|--|---|
| Medium Potassium 200 mg (range 150 to 250) | Apple (1 medium, 2-1/2 inch diameter)<br>Apple Juice<br>Apricot Nectar<br>Blackberries<br>Cherries (sour or sweet)<br>Figs (dried, 1 fig)<br>Fruit Cocktail<br>Grapes (15 small)<br>Grapefruit (1/2 small)<br>Gooseberries<br>Lemon Juice<br>Mandarin Orange Slices<br>Papaya (1/3 of 1 medium fruit)<br>Peaches (canned)<br>Peach (fresh) (1 medium, 2-1/2 inch diameter)<br>Pear (fresh, 1 medium)<br>Pineapple (canned or fresh)<br>Raisins (2 Tbsp)<br>Raspberries (sweetened, frozen)<br>Strawberries<br>Tangerine (2-1/2 inch diameter)<br>Watermelon (1 cup) |
| High Potassium 400 mg (range 250 to 550)   | Apricots (canned or 3 fresh)<br>Apricots (dried) (1/3 cup)<br>Banana (7 to 8 inches long)<br>Cantaloupe (1/8 small) (1 cup pieces)<br>Dates (1/4 cup)<br>Honeydew Melon (1/8 small) (1 cup pieces)<br>Kiwi Fruit (1 medium, raw)<br>Nectarine (1 medium, 2 1/2 inch diameter)<br>Orange Juice<br>Orange (1 medium, 7/8 inch diameter)<br>Prune Juice<br>Prunes (6 dried or 7 canned)<br>Prunes (1/2 cup stewed)   |



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**Milk Choice List:** Any of the following supplies approximately 4 grams protein, 75 calories (range 50 to 100), 6 grams carbohydrate, 85 mg sodium (range 20 to 150), 200 mg potassium (range 50 to 350), and 150 mg phosphorus (range 100 to 300). Each of the following equals one serving.

| Food Item   | Amount  |
|---|---------|
| *Milk, (Whole, Skim, 2%), Buttermilk, Chocolate Flavored  | 1/2 cup |
| Milk, Evaporated  | 1/4 cup |
| *Half and Half, or Cream  | 1/2 cup |
| *Ice Cream  | 1/2 cup |
| Sour Cream  | 4 Tbsp  |
| Yogurt, Plain or Fruit Flavored   | 1/2 cup |
| Cream Cheese  | 4 Tbsp  |
| *Liquid Non-dairy milk substitute supplies .5 gram protein, 140 calories, 12 gram carbohydrate, 12 gram fat, 40 mg sodium, 80 mg potassium, and 30 mg phosphorus. | 1/2 cup |

**Items to Avoid:** Pudding, milk shakes, malted milk and instant breakfast.

\*Remember to count as fluids.

**Oils/Fats Choice List:** Any of the following supplies approximately 45 calories, 55 mg sodium, 10 mg potassium and 5 mg phosphorus.

| Food Item                            | Amount |
|--------------------------------------|--------|
| Margarine or Butter                  | 1 tsp  |
| Oil or Shortening                    | 1 tsp  |
| Mayonnaise                           | 1 tsp  |
| Salad Dressing                       | 2 tsp  |
| Unsalted Gravy (homemade)            | 1 Tbsp |
| Powdered Coffee Whitener (non-dairy) | 1 Tbsp |

Note: Extra servings from the Oils/Fats Group can help increase calories when intake is inadequate to maintain weight.

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**High Calorie Choice List:** Any of following foods can help satisfy hunger. They may be included each day to provide calories without adding significant protein, sodium, potassium or phosphorus. Each serving listed provides approximately .5 grams of protein (range 0 to 1), 125 calories (range 100 to 150), 50 mg sodium (range 1 to 100), 50 mg potassium (range 0 to 100), and 50 mg phosphorus (range 0 to 100).

| Food Item   | Amount    |
|---|-----------|
| Sweets/Candies (if an individual has diabetes, check with your Registered Dietitian): |           |
| Gum Drops   | 8 small   |
| *Hard Candy (unfilled)  | 4 pieces  |
| *Jelly Beans  | 15 pieces |
| *Lemon Drops  | 13 pieces |
| *Life Savers  | 13 pieces |
| *Marshmallows   | 5 large   |
| *Sugar Mints  | 14 pieces |
| Other:  |           |
| Corn Syrup (maple flavored)   | 2 Tbsp    |
| Cranberry Sauce   | 1/4 cup   |
| Sugar (white)   | 2 Tbsp    |
| Honey   | 2 Tbsp    |
| Jam or Jelly  | 2 Tbsp    |
| Syrup   | 2 Tbsp    |

**Items to Avoid:** Candies with chocolate, nuts, licorice and cocoa.

\*Use with caution in individuals with dementia or diminished swallowing capabilities.

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**Beverages Choice List:** Anything that is fluid or melts at room temperature must be counted as a fluid. (See Section 9: Diets for Renal Fluid Restrictions).

| Beverage                                   | Amount                     |
|--|----------------------------|
| Beverages List                             |                            |
| Water                                      |                            |
| Ice  | 1 ice cube = 10 cc         |
| Coffee, Regular and Decaffeinated, and Tea | coffee cup = 6 oz = 180 cc |
| Herbal Tea, Fruit Juices (count as fruit)  |                            |
| Sodas                                      | 1 can = 12 oz = 360 cc     |
| (cola beverages are higher in phosphorus)  |                            |
| Kool-Aid                                   |                            |
| Lemonade, Limeade                          |                            |
| Hi C, Cherry or Grape                      |                            |
| Hawaiian Punch                             |                            |
| Cranberry Juice                            |                            |
| Cranapple Juice                            |                            |
| Others                                     |                            |
| Ice cream, Frozen Yogurt                   | 1/2 cup = 100 cc           |
| Gelatin,                                   | 1/2 cup = 110 cc           |
| Sherbet                                    | 1/2 cup = 120 cc           |
| Soup, Bouillon, Broth                      | 6 oz = 180 cc              |
| Fluid Measuring Guide                      |                            |
| One Quart                                  | = 960 cc = 32 oz           |
| One-Half Quart                             | = 480 cc = 16 oz           |
| One Cup                                    | = 240 cc = 8 oz            |
| One-Half Cup                               | = 120 cc = 4 oz            |
| One-Quarter Cup                            | = 60 cc = 2 oz             |
| Two Tablespoons                            | = 30 cc = 1 oz             |

**Salt Choice List:** Any of the follow items equal one salt serving. Each serving contains approximately 275 mg of sodium (range 250 to 300), 50 mg potassium (range 0 to 100) and 10 mg phosphorus (range 1 to 20).

| Food Item                            | Serving Size         |
|--------------------------------------|----------------------|
| Salt                                 | 1/8 tsp              |
| Seasoned Salts (onion, garlic, etc.) | 1/8 tsp              |
| Accept                               | 1/4 tsp              |
| Barbecue Sauce                       | 2 Tbsp               |
| Bouillon                             | 1/3 cup              |
| Catsup                               | 1-1/2 Tbsp           |
| Chili Sauce                          | 1-1/2 Tbsp           |
| Dill Pickle                          | 1/6 large, or 1/2 oz |
| Mustard                              | 4 tsp                |
| Olives, Green                        | 2 medium, or 1/3 oz  |
| Olives, Black                        | 3 large, or 1 oz     |
| Soy Sauce                            | 3/4 tsp              |

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#### Salt Choice List (continued)

| Food Item            | Serving Size |
|----------------------|--------------|
| Light Soy Sauce      | 1 tsp        |
| Steak Sauce          | 2-1/2 tsp    |
| Sweet Pickle Relish  | 2-1/2 Tbsp   |
| Taco Sauce           | 2 Tbsp       |
| Tamari Sauce         | 3/4 tsp      |
| Teriyaki Sauce       | 1-1/4 tsp    |
| Worcestershire Sauce | 1 Tbsp       |

**Herbs and Spices Choice List:** Herbs and spices can easily play an extremely valuable role by helping to increase the palatability of foods that are nutritionally important. Seasoning blends (Mrs. Dash, Spice of Life, Mr. Pepper), can be used, or various spices mixed and placed in a shaker.

|                 |  |
|-----------------|--|
| Use as Desired: | <ul style="list-style-type: none"> <li>Allspice</li> <li>Basel Leaves</li> <li>Bay Leaves</li> <li>Caraway Seeds</li> <li>Cardamom Seeds</li> <li>Celery Seeds</li> <li>Cinnamon</li> <li>Cloves</li> <li>Coriander Seeds</li> <li>Cumin Seeds</li> <li>Dill Seeds</li> <li>Fennel Seeds</li> <li>Garlic Powder</li> <li>Ginger</li> <li>Mace</li> <li>Marjoram</li> <li>Mustard Powder</li> <li>Nutmeg</li> <li>Onion Powder</li> <li>Oregano</li> <li>Paprika</li> <li>Parsley Flakes</li> <li>Pepper, Black, Chili, Red, White</li> <li>Poppy Seeds</li> <li>Rosemary Leaves</li> <li>Sage</li> <li>Savory</li> <li>Sesame Seeds</li> <li>Tarragon</li> <li>Thyme</li> <li>Tumeric</li> <li>Vanilla Extract</li> <li>Vinegar</li> </ul> |
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#### Herbs and Spices Choice List (continued):

|   |   |
|---|---|
| Herbs, Spices and Condiments to Avoid, unless Counted as a Salt Choice. | Accent<br>Baking Powder<br>Baking Soda<br>Bouillon Cubes<br>Catsup<br>Celery Salt<br>Chili Sauce<br>Prepared Horseradish<br>Prepared Mustard<br>Onion Salt<br>Salt<br>Salt Substitutes (very high in potassium)<br>Lite Salt<br>Soy Sauce<br>Worcestershire Sauce<br>Meat Tenderizers |
|---|---|