

Your Guide to Create a Balanced Kidney-Friendly Meal



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Introduction

MEAL PLANNING CAN be an overwhelming task for patients with chronic kidney disease (CKD) who are not on dialysis. With various nutrition restrictions, patients may have difficulty determining where to start when creating a meal or identifying a recipe that is kidney friendly. This handout provides diet recommendations and modifications for food groups that will help patients with CKD get adequate nutrition while limiting kidney disease progression.

Protein

Protein is an essential building block for skin, hair, and nails. It also plays a significant role in helping to build and maintain muscle, as well as fight off infections. The average person needs 40–65 g of protein per day; however, patients with CKD differ in protein needs due to compromised kidney function. When protein is consumed, waste byproducts are formed and excreted through the urine. Kidney disease prohibits protein from excreting properly and increases blood urea nitrogen and creatinine levels. The recommended average protein intake for patients with CKD who are not on hemodialysis is 0.6–0.8 g/kg of body weight per day.^{1,2} There are about 7 g of protein in a one ounce portion of meat. A standard serving of protein is 3 ounces, which is roughly the size of a deck cards. For patients with CKD, it is recommended that at least 50% of protein consumed is high biological value.³ Limiting dietary protein can help reduce the advancement of CKD.

Grains

Patients should restrict phosphorus-containing foods to maintain a safe phosphorus range between 2.7 and 4.6 g/dL.⁴ Grains, specifically whole grains, contain phosphorus, are good sources of fiber, and should be part of the CKD

diet. Working with a dietitian can help patients consume the appropriate amount of these foods. Label reading is another method to control phosphorus levels. Patients should be encouraged to avoid foods with phosphorus additives or “phos” listed as part of the ingredient list.⁴ In addition to a phosphorus-restricted diet, patients with CKD may be prescribed a phosphate-binding agent that is taken with meals to limit phosphorus absorption.⁵

Fruits and Vegetables

One important role of the kidneys is to keep a balance of minerals in the body. With CKD, potassium may build up to toxic levels in the blood stream. Hyperkalemia and hypokalemia have detrimental effects on the body including heart irregularities; therefore, it is important to keep potassium levels between 3.5 and 5.0 mmol/L.⁴ Fruits and vegetables vary in their potassium content. Patients with CKD should consume low-potassium fruits and vegetables and limit high-potassium fruits and vegetables. Low-potassium fruits contain less than 200 mg per small fruit or ½ a cup of fresh or canned fruit. Low-potassium vegetables contain less than 200 mg per cup of leafy greens or ½ a cup of vegetables.

Dairy and Milk Alternatives

Dairy and milk alternatives provide essential nutrients but also contain varying levels of phosphorus, sodium, and potassium. Healthy kidneys regulate these minerals in our body, but in patients with CKD, this function can be compromised. Hyperphosphatemia pulls calcium from bones, causing bones to weaken.⁵ Another side effect of hyperphosphatemia is itchy skin.⁵ Patients can balance phosphorus levels by reducing their intake of milk, cheese, and yogurt. If the patient has trouble controlling phosphorus levels, the dietitian should be consulted for milk alternative recommendations. In addition, patients with CKD should be evaluated for need of calcium and vitamin D supplementation.⁵

Other Considerations

Sodium restrictions help control blood pressure, lower the risk of cardiovascular disease, and slow the progression of kidney disease.⁵ Patients with CKD should reduce their sodium intake to 2000 mg or less per day and discuss

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with a dietitian about label reading to choose appropriate low-sodium foods. The ability of the kidneys to filter and excrete fluid decreases with CKD, which increases blood pressure and strains the heart and kidneys.⁵ If fluid retention becomes an issue, a patient's physician is likely to recommend a specific amount of daily liquids to help minimize these symptoms. Therefore, as CKD progresses, the patient may need to monitor the amount of fluid they are drinking and reduce beverage serving size with meals.

The attached handout will assist patients with meal planning. The teaching tool places emphasis on identifying different foods groups, understanding portion sizes, and also incorporating foods beneficial to the kidneys' health. Guiding patients with planning their meal can improve their overall quality of life and help manage CKD.

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Websites of Interest

1. Diet and Nutrition: Food IQ for People with Kidney Disease. Available at <https://www.davita.com/kidney-disease/diet-and-nutrition>.
2. Kidney-Friendly Recipes. Available at www.davita.com/recipes.

Food Group	Foods Recommended	Foods to Monitor	Tips:
Protein 1 serving = 2-3 oz. cooked meat ½ cup beans ¼ c. nuts	<ul style="list-style-type: none"> ✓ Egg or egg whites ✓ Fish, shellfish ✓ Chicken or turkey, skinless ✓ Beef, lean ✓ Milk ✓ Beans* ✓ Nuts* 	<ul style="list-style-type: none"> ✗ Canned, cured, or processed meats ✗ Meat packages that say “enhanced” or “extra tender” ✗ Canned beans (choose low-sodium option) 	<ul style="list-style-type: none"> -Choose fresh, unsalted, and unprocessed sources of protein. -Choose packaged meats labeled “All Natural”. -Plant protein may have higher phosphorus and potassium amounts. -*Discuss with a dietitian how you can fit plant protein into your diet.
Grains* 1 serving = ½ cup cooked rice/noodles, or 1 slice of bread	<ul style="list-style-type: none"> ✓ Rice, white ✓ White bread, English muffins, bagels ✓ Cold and hot cereal ✓ Crackers ✓ Pasta, white ✓ Flour tortillas 	<ul style="list-style-type: none"> ✗ Bran & whole wheat cereals* ✗ Bread: bran, oat, pumpernickel, rye, whole wheat ✗ Corn tortillas ✗ Oats & oat cereals* ✗ Cornbread 	<ul style="list-style-type: none"> -Packaged foods often contain added phosphorus, which is more harmful than foods with natural phosphorus. -Read food labels and avoid foods with “phos” in the ingredient list. -*Discuss with a dietitian how you can fit whole grains into your diet.
Fruit 1 serving = <200mg of potassium per ½ cup fresh or one small whole fruit	<ul style="list-style-type: none"> ✓ Apples or applesauce ✓ Berries, grapes ✓ Clementine, tangerine, mandarin oranges ✓ Pineapple ✓ Lemon or lime ✓ Plum, pear 	<ul style="list-style-type: none"> ✗ Avocado ✗ Banana ✗ Orange, peach, nectarine ✗ Melon (Cantaloupe, Honeydew) ✗ Dried fruit ✗ Kiwi ✗ Mango 	<ul style="list-style-type: none"> -Fruits naturally have potassium, some more than others. - Choose fruits with lower potassium. - If diabetic, avoid canned fruits in heavy syrups.
Vegetables 1 serving = <200mg of potassium per 1 cup leafy greens or ½ cup fresh, cooked or canned	<ul style="list-style-type: none"> ✓ Broccoli, Cauliflower ✓ Celery ✓ Carrots ✓ Cucumber ✓ Onion ✓ Cabbage, kale, lettuce ✓ Peppers: all colors 	<ul style="list-style-type: none"> ✗ Corn ✗ Potatoes ✗ Sweet potatoes ✗ Tomato, tomato sauce ✗ Spinach ✗ Zucchini ✗ Pumpkin 	<ul style="list-style-type: none"> -Vegetables naturally have potassium. -Choose low-sodium canned/frozen veggies. -Avoid foods with potassium chloride. -Rinse canned goods before using. -Boiling or leaching potatoes and vegetables will reduce potassium levels, but make sure to discard water used.
Dairy, milk-alternatives 1 serving = ½ cup milk/yogurt or 1 oz. cheese	<ul style="list-style-type: none"> ✓ Low-fat or fat-free milk ✓ Low-fat or low-salt cheese ✓ Low-fat or fat-free yogurt ✓ Almond milk, rice milk 	<ul style="list-style-type: none"> ✗ High-fat milk, cheeses, yogurts ✗ High-salt cheeses (cottage cheese, American, Velveeta, feta) 	<ul style="list-style-type: none"> -Dairy products naturally contain phosphorus, sodium, and potassium. -Choose lower-fat dairy with heart disease.