

Nutrition Recommendations to Keep Your Dialysis Patients Healthy

The Diet Order

Many residents need liberalized diets and supplements to help them meet calorie and protein needs. Providing high protein meals, as well as frequent snacks will help them eat enough.

A renal high-protein diet must provide:

Dietary Element	Requirement
Calories:	30–35 kcal per kilogram (KG) of body weight
Protein:	1.0–1.2 grams (g) per KG body weight—at least 65% high-value from animal sources
Sodium:	2–3g sodium diet or no added salt- (NAS)-adjusted for fluid gains/blood pressure control
Potassium	2–3g
Phosphorus	800–1,000 milligrams (mg)

Note: Dialysis residents, who are also diabetics, need a consistent carbohydrate (CCHO) diet, as indicated by patient medical history and glucose monitoring

Allowed High-Protein Foods	Examples of High-Protein Snacks
Eggs	→ Boiled eggs, egg salad sandwich
Beef (roast, ground, or shredded)	→ Roast beef sandwiches
Chicken/Turkey	→ Chicken salad sandwich, turkey sandwich
Fish, seafood and tuna	→ Tuna salad sandwich
High protein dairy products	→ Greek yogurt cups ,½ Cup cottage cheese with canned fruit
Fresh pork: roast, pork chops	
Nutritional supplements	

Note on Nutritional Supplements: If a resident is eating less than 75 percent of food provided and/or has undesired weight loss, and/or declining protein stores, a nutrition supplement is recommended. If a resident’s weight or weight loss is not a concern but more protein is needed, a protein-only supplement is helpful. Offer supplements between meals or at bedtime to allow residents to eat as much as they can during regular meal time.

If the resident is vegetarian or vegan or has other specific dietary requirements in addition to their dialysis diet, please consult the dialysis clinic dietitian to set up a specialized meal plan for them.

Liquid Supplements: Calories and Protein	Example Brands	Modular Protein Supplements
Renal type: High in calories Low in electrolytes	Nepro, Novasource Renal	Liquacel
Diabetic type: High in protein	Boost Glucose Control—vanilla or strawberry	Proteinex
If electrolytes are ok: High protein “regular”	2CalHN, Ensure Plus Boost Plus	Whey powder

Vitamin supplements are important for dialysis patients! Dialysis-specific supplements, including B- and C-vitamins are best. They should be provided daily, always after treatments, as dialysis removes vitamins from the system. The daily limit of vitamin C is 100mg, even in wound-care patients.

Do not provide extra fat-soluble vitamins, such as A, D, E, and K, as they may contribute to toxicity.

Potassium Management

Potassium levels of dialysis residents need to be controlled to prevent cardiac events, including irregular heart rate and heart attack. Some foods need to be limited or avoided altogether.

High-Potassium Foods to be Limited or Avoided	Lower Potassium Substitutions
Limit: Oranges Avoid: Orange juice; <i>it raises sugar levels!</i>	Mandarin oranges, pineapple Apple juice, grape juice, cranberry juice, lemonade* *Drink low potassium juices or take glucose tablets for low sugar levels
Limit: Tomatoes Tomato sauce	Cucumbers White sauce, garlic sauce, or other low-sodium gravy
Limit: Potatoes, including hash browns, french fries, tater tots, potato salad, yams/sweet potatoes	Rice, pasta/noodles, pasta or macaroni salad, bread/rolls, cooked carrots, green beans, zucchini, corn, mixed vegetables
Limit: Banana, melons	Canned fruits, including peaches, pears, fruit cocktail, apple sauce, mandarin oranges Fresh fruit, including grapes, pineapple, apple slices, berries

Phosphorus Management

Both diet and medication are phosphorus “binders” used to control phosphorus levels. High phosphorus, in the short term may cause itching, skin rash, and/or red eyes; long-term effects include bone and joint pain and vascular calcifications. Phosphorus binders can be:

- Calcium-based
 - e.g., calcium carbonate (Tums®) and calcium acetate
- Non-calcium-based
 - e.g., sevelamer carbonate, lanthanum carbonate
- Iron-based
 - e.g., velporo, auryxia

Tips for Phosphorus Binder Use:

- Order binders *during meals*, with food.
 - May be needed with high-protein snacks.

It is ok to give binders with meals and snacks before dialysis treatments.

High-Phosphorus Foods to be Limited or Avoided	Lower-Phosphorus Recommendations
Limit: Milk/dairy	Limit intake to ½ cup (4 ounces) daily Substitute unfortified rice or almond milk
Avoid: Cheese slices, cheese sauce, macaroni and cheese	? Vegan cheese substitutes?
Limit: Pudding/yogurt	Greek yogurt is ok—high protein food w/ binders
Limit: Peanut butter	Cream cheese, jelly
Limit: Chocolate	Vanilla, lemon, strawberry flavored treats
Limit: Dried beans and peas, baked beans	Mixed vegetables, allowed low-potassium vegetables
Limit: Soft drinks, including Coke, Pepsi, Dr. Pepper, and Hawaiian Punch	Sprite, A&W Root Beer, Ginger Ale

Sodium and Fluid Management

Fluid Restriction: In general, dialysis residents should be restricted to **1500 milliliters (ml) of fluid daily**. This allows for 1200ml divided for meals/snacks and 300ml divided for nursing to give with medications. Rather than leaving a pitcher of water in the room and refilling it throughout the day, provide patients/residents with specific quantities of water throughout the day to ensure plenty of access to fluids while attempting to avoid fluid overload.

Sodium Restriction: Dialysis residents should be restricted to of **2–3mg daily** or be on an **NAS diet** to limit thirst/ fluid intake and help to control blood pressure. Nursing staff should conduct clinical assessments daily to evaluate patients’ blood pressure, lung sounds, and edema. Such assessments are invaluable tools to assess fluid status.

Prevent Missed Meals on Dialysis Days

Since a controlled diet is so critical to dialysis residents’ health, they should be sent with a sack lunch to eat whenever they must be away from your facility.

Sack Lunch Ideas
High protein double-meat sandwich, “hold the cheese,” including turkey, roast beef, egg salad, tuna salad
Fruit cup: peaches, pear, mandarin oranges, fruit cocktail
Dessert/cookies: vanilla wafers, sugar cookies, shortbread , graham crackers
Drink: 8 oz or less of water or a juice box
Phosphorus binders, if prescribed

Resources

- There are many resources for ideas and sack lunches for dialysis. Visit:
<http://n411.consultant360.com/n411/content/bag-lunch-ideas-patients-dialysis>
- Additional nutritional resources are available from the National Kidney Foundation:
 - Cookbooks for Kidney Patients
<https://www.kidney.org/atoz/content/list-cookbooks-kidney-patients>
 - Food Safety is a Must
<https://www.kidney.org/atoz/content/foodsafety>
 - Dining Out With Confidence
<https://www.kidney.org/atoz/content/diningout>
 - Dietary Guidelines for Adults Starting on Hemodialysis
https://www.kidney.org/atoz/content/dietary_hemodialysis