



LOW PROTEIN DIET AND CHRONIC KIDNEY DISEASE

We all need protein in our diets every day. Protein is used to build muscle, heal wounds, fight infection, and stay healthy. Protein comes from both animal and plant sources. Following a low protein diet can help delay kidney failure.

Do I need to eat less protein?

You need protein every day to meet your body's needs, but people with CKD may have more trouble removing waste products from their blood. Excess protein waste can build up and cause nausea, loss of appetite, weakness, and taste changes. By decreasing the amount of protein you eat, you can help your kidneys have a lighter workload, and they may be able to function for a longer time.

Plant sources of protein

Protein from plant sources is low in one or more of the essential amino acids. Plant sources of protein include beans, lentils, nuts, peanut butter, seeds, and whole grains. A plant-based diet can meet protein needs and provide all needed amino acids with careful planning by eating a wide variety of plant-based foods. Another bonus with plant proteins is that they are low in saturated fat, high in fiber, and have no cholesterol.

Animal sources of protein

Protein from animal sources have all the essential amino acids (the building blocks of protein). Animal sources of protein vary in their amount of fat—with fatty cuts of red meat, whole-milk dairy products, and egg yolks being the highest in saturated fat (less healthy for the heart). While fish, poultry, and low-fat or fat-free dairy products are lowest in saturated fat.

Examples of animal proteins include red meat, chicken, turkey, pork, eggs, and dairy products. Dairy products are also high in phosphorus and calcium. You may need to use fewer dairy products in your diet to control the phosphorus levels in your blood.

A kidney dietitian can help you plan a low protein diet. To find a kidney dietitian in your area, visit bit.ly/nkfckdrd

How much protein do I need?

Protein needs vary based on your age, sex, and overall general health. There are some very clever and practical ways to use foods with less protein so that a smaller amount will still leave you feeling full.

SANDWICHES

- Make sandwiches with lots of lettuce, cucumber, chopped celery, apple, parsley, or water chestnuts
- Use unsalted meats that are sliced very thin; this will spread them out to look like a larger portion
- Use whole grain bread that is more thinly sliced or lower in protein

SOUPS

- Use lower-protein foods such as rice and pasta to add bulk to soups without adding much protein
- Vegetables are a great addition to soups to add texture
- Use milk substitutes (without phosphate additives) that are low in protein when making cream soups

MAIN DISHES

- Use vegetables and grains as the main dish and meats or other high-value protein as the side dish
- Stir fry dishes and fajitas are a great way to combine vegetables with small pieces of meat or chicken

- Try grilling kebabs, using smaller pieces of meats and more vegetables or fruits
- Mix small pieces of meat, ground meat, or chicken with rice or pasta
- Toss together a chef salad with lettuce and crisp vegetables adding smaller strips of meat and egg
- For casseroles, use less meat than the recipe calls for and increase starches (rice or pasta) and vegetables –use reduced sodium or homemade soups or broths in your casserole recipes
- Allow yourself extra portions or larger servings of whole grain bread, rolls, pasta, rice, fruits and vegetables to help meet your caloric needs without eating more protein
- Buy sharp cheddar, Parmesan, or Romano cheeses for a stronger taste—using just a little bit of these cheeses will provide flavor that can go a long way for tasty meals

Calorie boosters

Eating less protein may mean you are likely to also eat fewer calories, which can cause unplanned weight loss. You can make up some of the lost calories by replacing proteins with higher calorie foods, which are known as calorie boosters.

- Use heat-healthy fats such as canola and olive oils in larger amounts to saute and season foods.
- Use spreads such as cream cheese or peanut butter
- Use candies such as hard candies, gumdrops, jellybeans, chewy fruit flavored candies and marshmallows as desserts or snacks. Sweeteners such as honey, jams or jellies and white sugar can be added to foods or drinks to increase calories (consult your kidney dietitian if you have diabetes)

Modifying recipes to lower protein

Here is an example of a typical recipe that was modified to lower the protein content:

PASTA CASSEROLE WITH CHICKEN OR BEEF

YIELDS: 8 SERVINGS (CUT 9" X 13" PAN 4" X 2")

ORIGINAL RECIPE	MODIFIED RECIPE
1 12-oz pkg egg noodles	1 12-oz pkg regular or low-protein noodles
1-1/2 lb ground chicken or beef	1/2 lb ground chicken or beef
1 tsp onion salt	1 cup diced celery
1 tsp garlic salt	1 tsp onion powder
Ac'cent® Flavor Enhancer to taste	1 tsp garlic powder
1 tsp black pepper	1 tsp black pepper
1 6-oz can tomato paste	1 6-oz can tomato paste
1 4-oz can mushroom stems and pieces (drained)	1 4-oz can mushroom stems and pieces (drained and rinsed)
8-oz sour cream	4 oz sour cream
1/4 cup cottage cheese	3 tbs cottage cheese
1/2 lb grated cheddar cheese	1/4 lb grated sharp cheddar cheese

INSTRUCTIONS

Prepare noodles according to package directions. Drain in colander, rinse with cold water and set aside. Brown chicken (and sauté celery until tender in modified recipe). Add seasonings, tomato paste, one tomato-paste can of water and mushrooms. Place noodles in large bowl; mix in sour cream and cottage cheese. Line bottom of 9" x 13" baking dish with noodle mixture. Top with ground chicken mixture. Sprinkle cheddar cheese on top. Bake at 350°, until cheese melts and casserole is heated through.

PROTEIN CONTENT

Original recipe= 33 grams protein

Modified recipe with regular noodles= 19 grams protein

Modified recipe with low protein noodles= 15 grams protein

The National Kidney Foundation wishes to thank its Council on Renal Nutrition (CRN) for the development of this fact sheet.

For more information, contact the National Kidney Foundation

Toll-free help line: **855.NKF.CARES** or email: **nkfcares@kidney.org**