



Vegetarian Nutrition

a dietetic practice group of the
Academy of Nutrition and Dietetics



Experts in Plant-Based Nutrition

RDN Resources for Consumers:

Plant-based Diets in Chronic Kidney Disease

You might be considering more plant-based nutrition for health benefits! Perhaps you are a lacto-ovo vegetarian or vegan! Plant-based foods can “fit” in your nutritional management of chronic kidney disease (CKD).

Chronic Kidney Disease

Research shows a plant-based diet may slow the progression of CKD as well as some of the risks and complications from hypertension, heart disease, and Type 2 diabetes.

A meal plan for CKD is highly individualized and depends on the level of kidney function that is remaining. Kidney function is measured by GFR (Glomerular Filtration Rate). As GFR declines this indicates kidney function is declining. Carefully following a meal plan meeting your individual needs helps keep minerals in your blood at normal levels and keeps protein optimum. Consulting with a Registered Dietitian Nutritionist (RDN) can help you plan personalized nutrition guidance.

Nutrients of concern:

- Protein, Phosphorus, Potassium, Sodium, Fluid

Key Take Away Points:

- Be proactive and embrace nutrition for health to delay to progression of kidney disease.
- As kidney disease progresses, nutrient needs change.
- A low protein diet (LPD) helps support residual kidney function. Once GFR is <15, dialysis may be started; protein needs increase at this time. Your RDN will help guide you.

Nutrients of Concern

Protein

Newest literature suggests >50% of protein sources

should come from plant sources. See below for protein sources offering high quality proteins.

Examples of High Quality Protein Sources*

Plant-Based

Lentils	Plant-based milks***
Cooked, dried beans**	Quinoa
Tempeh	Nut-butters**
Tahini**	Protein fortified pasta, cereal
Tofu	Seitan
Seeds (sunflower, pumpkin)*	
Vegetables offer excellent protein sources*	

Lacto/Lacto-Ovo:

Egg whites	Cheese**
Egg yolk**	Milk (cow, goat)**
Yogurt**	

*Check with your RDN for appropriate serving sizes

**Indicates higher in phosphorus

***mineral content/protein varies and may change based on brand

Fluid

Fluid restriction is typically not necessary until dialysis; your Health Care Provider (HCP) and RDN will give you guidance if and how much of a fluid restriction is needed.

- What counts as a fluid? If it is liquid at room temperature it is fluid. Examples include water, tea, coffee, soda, gelatin, ice cream, sherbet, and broth. Fluid includes liquid used to take medications.

Potassium

Potassium helps manage blood pressure, heart, and muscle contraction, and needed for many other body functions. As kidney function declines potassium can increase and high potassium foods may need to be limited or avoided. Potassium is found widespread in foods from fruits and vegetables to meats and dairy! Fruit and vegetable intake are shown to be beneficial to the kidneys; your RDN can provide guidance to manage

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this. There are medications available to help control potassium levels called potassium ‘binders’ and your HCP will identify if this is beneficial. Here are potassium pointers:

- Potassium is listed on the Nutrition Facts food label, however the absorption may vary depending on the food source
- Potassium additives from processed foods is 90 – 100% absorbed
- Plant-based sources (fruits/vegetables) offer rich sources of vitamins, minerals, and fiber
- Soaking or boiling vegetables can help reduce

Sodium

Sodium is a mineral widespread in food, however, processed and canned foods are typically higher in sodium. You may be using meat alternatives to meet protein needs; these are ‘processed’ food items. For processed and convenience foods check the Nutrition Facts food label per serving and talk with your HCP and RDN about the sodium intake per day for you to manage blood pressure and fluid management as CKD function declines. See the following sodium pointers:

- Use caution with convenience foods such as frozen meals, canned foods, salted snack foods, processed cheese, vegetable miso
- Look at the Nutrition Fact labels for meat analogues/alternates: veggie burgers, veggie sausage, veggie bacon, tofu hot dogs
- Condiments such as soy and teriyaki sauces, salt to include seasoned salts.

Phosphorus

Phosphorus is a mineral found in almost all food, especially foods with protein. Phosphorus is necessary with calcium to maintain bone health, energy transfer, protein synthesis and more. As kidney function declines, phosphorus builds up in the blood and this can lead to weakened bone tissue and calcified muscle tissue,

including the heart! Your RDN will guide you to how much phosphorus should be limited based on your kidney function. Medication may be needed to help keep phosphorus in normal levels in the blood and these are referred to as phosphorus ‘binders’. These medications act by binding to phosphorus in the ‘gut’ to food as you eat, before phosphorus is absorbed into the bloodstream; your HCP will provide guidance if this is needed. Here are a few pointers:

- Absorption of phosphorus varies depending on the food source
- Plant-based protein sources are less absorbed
- Processed foods often have high amounts of phosphorus additives and this is 90 – 100% absorbed
- The Nutrition Facts food label does not have to list phosphorus; look for “Phos” in the ingredients such as words like “Phosphoric acid”
- The USDA database is often a good place to review foods but often underestimates phosphorus [FoodData Central \(usda.gov\)](https://ndb.nsl.gov/)

Additional Tips!

Vitamins and Minerals:

An over-the-counter multivitamin may be adequate to meet your needs; discuss this with your HCP and RDN. A vitamin and mineral supplement may be beneficial when following a plant-based diet. Discuss dietary or herbal supplements you are taking.



Find a Registered Dietitian Nutritionist

A registered dietitian nutritionist (RDN) can help you develop a healthy vegetarian eating plan that meets your needs. To find an RDN in your area, visit <https://findanrd.eatright.org>