

## Kidney Disease Information

### **What is kidney disease?**

Kidney disease is used as broad term to indicate several kidney conditions. Chronic kidney disease is the irreversible, persistent loss of kidney function over time, typically over 3 months or longer. Many causes can lead to chronic renal disease that include birth defects, kidney infections, diseases associated with the immune system, acute kidney injury, certain cancers, and various metabolic and endocrine disorders. There are other kidney diseases, such as kidney infections, kidney stones, or protein losing nephropathies. Chronic kidney disease occurs more commonly in older cats and dogs. Any breed of dog or cat can develop chronic kidney disease.

### **What are the signs?**

The clinical signs of chronic kidney disease will depend on the severity of the disease. Pets in the early stages may have no clinical signs. Increased drinking and urination are often the first signs to appear. Other possible signs include poor appetite, weight loss, dehydration, vomiting, diarrhea, bad breath, oral ulcerations, drooling, and lethargy.

### **What are the stages of kidney disease?**

The International Renal Interest Society (IRIS) has developed a staging system for chronic kidney disease to facilitate appropriate treatment and management. Staging is based on factors such as blood markers, blood pressure, urine concentration, and urine protein levels. There are four stages, with Stage 1 characterizing early chronic kidney disease and Stage 4 being the most advanced. Many variables contribute to the prognosis for pets with chronic kidney disease. For more information on staging, you can visit the IRIS webpage: [http://www.iris-kidney.com/pdf/IRIS Staging of CKD modified 2019.pdf](http://www.iris-kidney.com/pdf/IRIS_Staging_of_CKD_modified_2019.pdf)

### **What are the dietary goals for kidney disease?**

**For those patients with advanced stage kidney disease**, proper nutrition is essential for optimizing both quality and quantity of life. A prescription diet formulated for chronic renal disease is recommended for advanced disease (Stages 3 & 4), and sometimes for patients with Stage 2. Some key features of diets appropriate for renal disease are listed below.

- **Restricted protein:** Feeding a restricted quantity of a high-quality protein can help to minimize the adverse symptoms associated with kidney disease. Pets with kidney disease can develop taste aversions as their disease progresses, which can make getting them to eat one diet consistently by mouth tricky.
- **Phosphorous restriction:** Retention of phosphorus is a common consequence of renal disease. Elevated phosphorus levels can contribute to the progression of renal disease when, in response, parathyroid hormone levels rise and cause calcium deposition in soft tissues and damage remaining functioning renal cells. Therefore, phosphorous restriction in diets may effectively slow the progression of chronic kidney disease in pets.

- **Omega-3 Fatty Acids:** Omega 3 fatty acids can be beneficial for renal disease when supplemented properly. Omega 3 fatty acids (EPA and DHA) are anti-inflammatory, and therefore recommended for many conditions. In renal disease, they are used to reduce protein loss in the kidneys, to manage renal hypertension, and to slow the decline in glomerular filtration rate. Omega 3 fatty acid supplements specifically for pets can be purchased from your regular veterinarian.
- **Additional beneficial features:** Renal diets also typically contain controlled sodium levels and increased levels of B-vitamins, making them ideal to suit the metabolic needs of a pet with kidney disease.

### What treats are safe for my pet?

Ideally, 90% of your pet's calories should come from a complete and balanced diet to ensure nutritional adequacy. We can set aside at most 10% of their daily calories for treats and snacks.

**Treats and snacks that are LOW in protein, phosphorus, and sodium are ideal for pets with kidney disease.** A table of common food items that are approved to feed your pet with chronic kidney disease has been provided below. This is not an all-inclusive list, but just an example. Please discuss your pet's treat allowance and recommendations with your veterinarian.

<b>Low-Protein Treat Items APPROVED for Kidney Disease</b> <small>*Do NOT to exceed treat allowance*</small>	<b>Calories Supplied</b>
Blueberries, raw	21 kcal per 1/4 cup
Raspberries, raw	64 kcal per cup
Apple slices, with skin (no core), raw	29 kcal per 1/2 cup
Bananas, medium, raw	105 kcal per banana
Cantaloupe, raw, cubed	14 kcal per 1/4 cup
Watermelon, raw, cubed	12 kcal per 1/4 cup
Baby carrots, raw	4-5 kcal per carrot
Broccoli, raw	31 kcal per cup
Yogurt, plain, low-fat	20 kcal per 1/8 cup
Cheerios® Original Cereal	13 kcal per 1/8 cup
Mini Marshmallows (Example: Kraft Jet-Puffed Miniature Marshmallows)	3 kcal per marshmallow
Marshmallow Crème (Example: Kraft Jet-Puffed Marshmallow Crème)	23 kcal per tablespoon
Whipped Cream, pressurized (Example: Reddi-wip Original Whipped Cream)	8 kcal per tablespoon
Cranberry Sauce, canned, sweetened	15 kcal per gram
Smucker's® Natural Fruit Spread Strawberry	13 kcal per teaspoon
Applesauce, no sugar added (Example: Treetop Apple Sauce)	35 kcal per 1/4 cup
Maple Syrup (no artificial sweeteners, specifically xylitol which is toxic)	18 kcal per teaspoon
Butternut Squash, cooked, without salt, cubed	41 kcal per 1/2 cup
Pumpkin, canned	20 kcal per 1/4 cup
Potato, white, cooked	1 kcal per gram
Potato, sweet, cooked	0.8 kcal per gram

**What foods should I avoid?**

Please avoid feeding treats and snacks in excess of your pets treat allowance. Please avoid foods that are high in protein, phosphorus, and sodium. We also recommend avoiding raw, freeze-dried, or dehydrated products for all pets, especially those with chronic disease due to the increased risk for foodborne illness. The term raw foods in this case *includes* raw meats, raw pet commercial food products, unpasteurized milk, raw eggs, freeze-dried treats or snacks, freeze-dried commercial pet foods, dehydrated or air-dried treats or pet foods, dehydrated chews, rawhides, bully sticks, pig ears, bones, hooves, bladder sticks, etc.

**What prescription diets are available for my pet?**

There are numerous prescription diets for pets with chronic kidney disease. A custom home-cooked diet formulated for kidney disease can also be made for your pet by the nutritionist. Homecooked diets for cats can be challenging due to palatability and texture preferences that cats have if they have never been exposed to human foods before.

**What if my pet does not want to eat any of the prescription diets?**

In advanced stages of kidney disease, the elevation of kidney values can make your pet feel unwell and develop dietary aversions relatively frequently. It is recommended to try and rotate through the prescription diets. A home-cooked diet can be formulated for your pet. However, please keep in mind that it is likely your pet will continue to develop food aversions which can make formulating a homecooked diet challenging. A feeding tube is often considered at this time so that reliable nutrition can be given to your pet and so can medications. If you are interested in a feeding tube for your pet, please discuss this with your veterinarian.

**How long does my pet have to be on a kidney diet?**

In pets with chronic kidney disease in advanced stages (Advanced IRIS Stage 2 and higher), a prescription kidney diet is recommended lifelong. If your pet has an acute kidney injury and kidney function returns to normal, then your pet can return to a normal commercial diet as directed by your veterinarian or the nutritionist.