

Dietary Management of Cats with Kidney Disease ***After Treatment with Radioiodine for Hyperthyroidism***

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Chronic kidney failure (CKD) is common in geriatric cats, so it should not be surprising that many cats with hyperthyroidism will develop concurrent CKD as they age. For a good overview of feline CKD, see the website “Tanya’s Comprehensive Guide to Feline Chronic Renal Disease” (<http://www.felinecrf.org/index.htm>).

Nutritional modification is one of the mainstays of long-term management of CKD. Commercial renal diets are available for cats and work well — these diets are restricted in protein and phosphorus and are generally supplemented with potassium, omega 3 fatty acids, and water-soluble vitamins.

MUSCLE WASTING COMMON IN THE OLDER CAT

As most prescription kidney diets are restricted in protein, this is not ideal in the older cat prone to developing muscle wasting. This is especially true to cats just treated with radioiodine for hyperthyroidism. We want to feed these cats enough protein to maintain and even restore lost muscle mass.

Cats tend to lose muscle mass as they age, a phenomenon called sarcopenia. Therefore, geriatric cats require more protein than younger animals as they age, not less! Studies have shown that diets containing higher levels of protein will decrease the incidence of sarcopenia in geriatric subjects. Feeding a low-protein diet would do the opposite and increase muscle loss. Therefore, I believe that protein restriction only becomes necessary in the late stages of renal failure (late IRIS stage 3 to Stage 4 CKD).

For a description of the IRIS staging system that veterinarians use to tell how bad a cat’s kidney disease really is, see the “How Bad Is It” page on Tanya’s website (www.felinecrf.org/how_bad_is_it.htm).

Although it has long been one of the cornerstones of diet therapy for CKD, protein restriction is controversial at best. Reducing consumption of non-essential amino acids theoretically results in decreased production of nitrogenous waste, reduced solute workload on the kidney, and improvement of clinical signs of uremia. However, we have no evidence that feeding low-protein diets slows progression of disease or is even needed in the early stages of CKD in cats. Low dietary protein only decreases the symptoms associated with severe, end-stage kidney failure; it does not slow it or cure it.

RECOMMENDED DIETS FOR HYPERTHYROID CATS **WITH CONCURRENT KIDNEY DISEASE**

Hyperthyroid cats develop a number of metabolic problems that should to be addressed with nutritional modification. These include muscle wasting, insulin resistance (which predisposes to diabetes), and secondary hyperparathyroidism (which causes worsening kidney disease).

The recommendations listed below apply to cats both before and after treatment of the cats' hyperthyroid condition.

Feed higher protein, lower carb diets:

I recommend feeding a diet relatively low in carbs (<20% of calories) and relatively high in protein (>35% of calories) to best manage the treated hyperthyroid state and to prevent the further loss of lean muscle mass.

You can see a list of OTC canned foods with the protein and carbohydrate content at the website www.catinfo.org (www.catinfo.org/docs/FoodChartPublic9-22-12.pdf). To get to this link, go to the home page and look at the sidebar on the right — click on the link for “Protein/Fat/Carbs Chart” on the heading of *Feline Nutrition*.

In some cats with kidney disease, it is best to feed a homemade diet that is formulated for them (see Dr. Lisa Pierson's web site at www.catinfo.org for more information). This, by far, is my favorite way to feed my CKD cats, but it is more practical to feed commercial canned cat foods.

Restrict phosphate intake:

Phosphate restriction is key for cats with CKD so we can either formulate a low-phosphate diet or select an OTC cat food relatively low in phosphorus.

For this purpose, a phosphate content that is < 100 mg per 100 kcal is ideal, especially in a cat with severe kidney disease. This can be done either by feeding a prescription diet (again, these are too low in protein) or having a homemade diet formulated.

In cats with mild or early kidney disease, use of an OTC diet with lower phosphate levels may be used. If an OTC diet is selected, look for one that contains < 250 mg of phosphate per 100 kcal. You may have to call a company for specific information. Fish-based cat foods are often high in phosphorus, so I stay away from these diets for cats with CKD.

You can download a list of OTC canned foods with the phosphate content at the catinfo.org website (www.catinfo.org/docs/FoodChartPhosphorus9-22-12.pdf). To get to this link, go to the home page and look at the sidebar on the right — click on the link for “Phosphorous in Cats Food-Chart” on the heading of *Feline Nutrition*.

If a low-phosphate diet cannot be fed or serum phosphate concentrations remain above 4.5 mg/dl, use of phosphate binders is started. Aluminum hydroxide (100 mg/kg/day) is commonly used and can be mixed with canned or dry food (can be purchased at www.thrivingpets.com).

Encourage water intake:

All cats with CKD need to drink more water than clinically normal cats do— remember that cats with kidney disease can not conserve water and produce excessive amounts of urine. Maintaining normal hydration plays a key role in these cats with CKD.

Water is an extremely important nutrient that contributes to overall health in every living creature. Cats inherently have a low thirst drive and, in the wild, normally consume most of their daily water from their food. A cat's normal prey (e.g., mice and other rodents, birds) contains ~70% water — this percentage compared nicely with the water content of canned foods, which contain 70-80% water, but not at all with the very low 7-10% found in dry cat food.

Once we realize cats do not have a very strong thirst drive, it's easy to understand why it is critical for cats with CKD to ingest a water-rich diet. The cat's lack of a strong thirst drive can lead to low-level, chronic dehydration when dry food makes up the bulk of their diet.

I know what you're thinking: "But my cat drinks a lot of water so dry food is just fine for him!" Of course, a cat consuming a predominantly dry food diet does drink more water than a cat consuming a canned food diet. But in the end, when water from all sources is added together (what's in their diet plus what they drink), the cat on canned food consumes approximately twice the amount of water compared with a cat eating dry food.

Most, if not all CKD cats will be chronically dehydrated when they are on a diet of predominantly dry food. It is troubling to think about the role that chronic dehydration may play in causing or exacerbating feline kidney disease.

Other supplements and vitamins to consider:

Other supplementation for OTC diets to consider include the following:

- Fish oil - 1,000 mg/day (1 capsule of most products) for the omega-3 fatty acids. Poke a pin in a capsule, drip it onto the food, and mix well.
- Potassium gluconate (or citrate if acidotic), as needed for hypokalemia.
- Water-soluble B-complex vitamins are also given to most cats.

Monitor blood pressure, urine protein, and urinary tract infections:

All cats with CKD need to be monitored at least every 3-6 months. In addition to a complete physical examination, we should monitor the cat's complete blood count and serum chemistry panel (including renal function and electrolytes). In addition, periodic urinalyses should be done, looking for signs of infection or excessive urinary protein excretion (proteinuria), both of which can cause worsening of renal function.

Blood pressure should also be monitored in these cats, since high blood pressure (hypertension) is a common complication of CKD in cats. Untreated hypertension will accelerate the progression of renal disease so high blood pressure should always be controlled with medication in cats with CKD.