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Renal Failure Dietary Therapy

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Many aspects of kidney failure require attention. The goal of renal therapy, dietary or otherwise, is to prevent or at least postpone advanced uremia (poisoning by toxins the kidneys could not adequately remove) and extend life expectancy and quality. Diet is an important part of achieving these goals and we are lucky to have commercially available diets made specifically for renal patients.

The idea behind using diet as therapy for kidney disease involves making alterations in the patient's diet to correct or at least dampen the toxic metabolic state of kidney failure. A modified diet can thus be used to correct imbalances and slow progression of disease while maintaining a healthy muscle mass and body condition.

Additional Resources

- Kidney Failure in Dogs and Cats: Where to Begin
- Fluid Therapy in Pets
- Kidney Dialysis: Is it for your Pet?
- Kidney Transplants for Cats and Dogs
- Kidney Failure (Chronic) Links
- Calcium Phosphorus Balance in Dogs and Cats
- Renal Anemia, or Inadequate Red Blood Cells
- Glomerulonephritis in Dogs and Cats
- High Blood Pressure in our Pets

In one famous study where 38 dogs in kidney failure were tracked for 2 years, dietary therapy reduced the risk of dying by 69% over dogs allowed to continue eating regular dog food.

Another study in dogs showed that beginning the renal diet when the creatinine was between 2.0 and 3.1 delayed the onset of uremic crisis by 5 months.

A study of 50 cats with stable, naturally occurring renal failure were divided into two groups, one receiving a renal diet and the other receiving regular food. The cats on the renal diet survived over twice as long as the others.

There are more studies where these came from showing great survival and life quality benefit for renal patients who eat renal diets rather than regular maintenance diets.

What Makes a Renal Diet Different?

A renal diet takes into consideration reduction in uremic toxins, control of high blood pressure, calcium/phosphorus balance, maintenance of proper potassium levels and reduction in inflammation. Let's review the features of a renal diet and why they are important:

Phosphorus Restriction

This is an important part of a renal diet since phosphorus balance is crucial. Phosphorus comes into the body via the diet and leaves the body via the kidney, only in renal failure phosphorus is not well removed as it is supposed to. Obviously using less phosphorus in the diet may be adequate to keep the blood phosphorus levels normal, thus balancing the intake with the output, but sometimes addition of medication (i.e. a phosphate binder) is needed to further reduce intake. Restricting dietary phosphate has been shown to slow the progression of renal disease.

Photo Courtesy Dr. Teri Ann Oursler

If the goal phosphorus level has not been achieved in 4 to 6 weeks after starting the renal diet, a phosphorus binder should be used.

Potassium Supplementation and Sodium Restriction

In chronic kidney disease, potassium is not conserved properly and becomes depleted. When potassium depletion becomes excessive, the patient's overall muscle strength, energy and general life quality are affected. Potassium supplements may be needed in the form of oral gels or powders but ideally, potassium is supplemented in the easiest possible way which generally means incorporating more potassium in the diet. If potassium levels can be maintained simply with food, this would mean less medication for the patient to have to take.

High blood pressure (hypertension) is a common complication of kidney failure. High blood pressure leads to further kidney damage, not to mention increased risk of stroke (vascular accident), sudden blindness and retinal detachment, and general circulatory problems. Restriction in sodium is helpful in the management of high blood pressure. Ideally, this would translate into less medication to take as well.

Omega 3 Fatty Acids

Studies suggest that kidney failure patients taking omega 3 fatty acids are likely to live longer than patients who do not take them. This has led to the supplementation of most renal diets with fish oils. The full import of fatty acid supplementation is still being worked out.

Other dietary features include B vitamin supplementation (since the damaged kidneys tend to lose excess B complex), which have non-acidifying features to help control acidosis.

Low Protein

Since a number of renal toxins come from the break-down and processing of protein, one way to give the kidneys less work to do is to eat less protein. How much less protein depends on how serious the kidney disease is as there is a minimum protein requirement for maintaining body condition and a protein-restricted diet must not be restricted below that level.

Exactly how to restrict protein involves a lot of choices. Older animals tend to require a higher dietary protein level in general when compared to their younger counterparts. Protein also adds palatability to the food so that if we try to restrict protein too much we may end up with a pet who will not eat at all. Further, plant proteins tend to produce less difficulty with

phosphorus balance but animal origin proteins may be needed for required amino acids. It is no surprise that decades of research have gone into how protein selection is accomplished to create an effective but tasty diet.

- There is no protective value to restricting protein prior to the onset of kidney failure. It is not preventive or at all helpful for a healthy senior pet to be restricted in dietary protein.
- High-protein diets do not cause kidney failure (though they certainly make the patient worse after kidney failure has begun).
- Protein restriction is probably the least important dietary modification in early stages of kidney disease. There are special diets available for patients with less restrictive needs and others for patients in more advanced states.

At What Point Should a Special Diet be Started?

This question has been controversial for a long time. For many animals, changing diet to a less palatable food represents a definite reduction in life quality. There was some thinking that we are changing the diet too soon. On the other hand, if a pet is in a more advanced state of disease before the switch is made, the pet will be much less willing to change to a food of less palatability. The companies that make these foods have put a great deal of research into improving palatability over the years, which has helped tremendously.

Now the International Renal Interest Society finally has guidelines. The IRIS Guidelines recommend changing to a renal diet for sure by IRIS Stage III (when the blood creatinine level is between 2.9 mg/dl [0.26 mmol/L] and 5.0 mg/dl [0.44 mmol/L] for cats and between 2.1 mg/dl [0.19 mmol/L] and 5.0 mg/dl [(0.44 mmol/L)] for dogs). At this stage and beyond, a renal diet is going to have benefit. At earlier stages, the benefit is not as clear. In IRIS Stage I (creatinine less than 1.4 mg/dl [0.12 mmol/L] for dogs or less than 1.6 mg/dl [0.14 mmol/L] for cats but with known kidney disease), there is no benefit to beginning a renal diet.

In IRIS Stage II (creatinine between 1.6 mg/dl [0.14 mmol/L] and 2.8 mg/dl [0.25 mmol/L] for cats and between 1.4 mg/dl [0.12 mmol/L] and 2.0 mg/dl [0.18 mmol/L] for dogs) benefit is not clear and renal diet is considered optional. Because some animals will not accept a diet change in a more advanced disease state, IRIS Stage II may be a good time to switch.

These guidelines allow the patient to benefit the most from the preventive advantages of the diet. If the pet finds the diet palatable, then there should be no life quality issues with changing foods.

What if my Pet Will Not Eat the Renal Diet?

Animals with insufficient kidney function frequently do not feel well and will not be inclined to eat bland food. Here are some tips in increasing acceptance of renal diet.

Is the Pet Feeling Ill?

As mentioned, the pet that feels ill may be disinclined to eat a new food. Consider using other medical treatments until the pet is feeling better before changing diets.

Consider Feeding Access

If the pet feels ill, he or she may not feel like walking across the house to the feeding area. Be sure the food is accessible.

Offer a Choice of Renal Diets

At this point, there are many renal diets available in different textures and different

flavors. There are kibbled foods, stews, morsels and gravy, pates, and loaf formats. Commonly a renal patient will eat one food for a while and then stop accepting it only to accept a new format, even if it was rejected on a prior location. Your vet can help you get a selection so that even a picky pet find something acceptable.

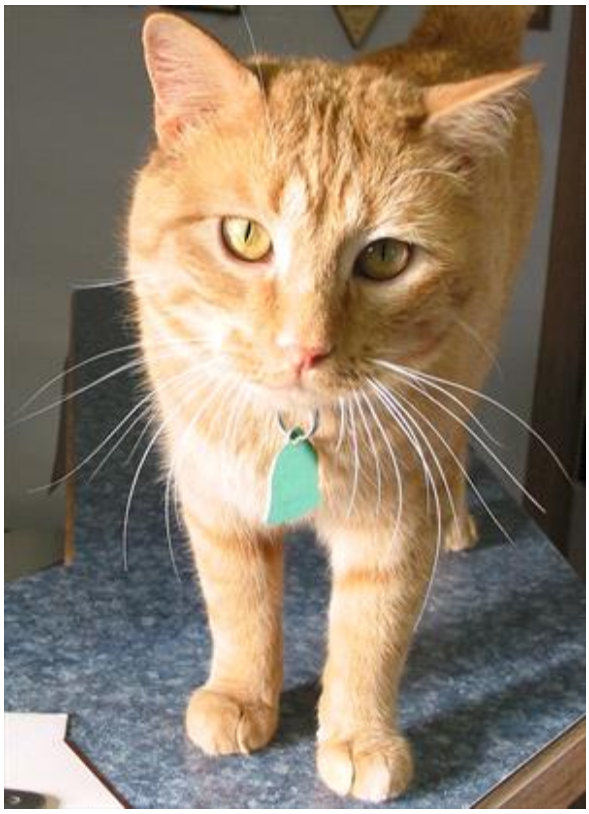

Photo Courtesy Dr. Teri Ann Oursler

Appetite Stimulants/Medications

Medication can be used to enhance hunger and encourage eating. If the pet simply does not respond, it may not be possible to use a renal diet and other medications may be needed (as reviewed in other areas of our Kidney Failure Center) to provide therapy.

If the patient is simply too sick to eat at all, assisted feeding may be in order.

Home Cooking a Renal Diet

Home cooking an appropriate renal diet is a complicated task as might be surmised from the information above. Commercial diets have decades of research behind them as well as government regulation and professional quality control. They are also convenient to use. That said, some pet owners prefer to have more control over the ingredients they feed their pets and want more involvement with diet choices. Commercial diets tend to represent a "one size fits all" approach that may not be best.

For renal patients, it is important not to simply try to make up your own diet based on recipes from non-professional sources. Many recipes float around the internet and many pet owners may support them but this is not the same as getting guidance from a nutrition professional. Your regular veterinarian can guide you to an appropriate service for nutritional consultation. or you may wish to visit the American College of Veterinary Nutrition.

Related resources

- Renal Anemia, or Inadequate Red Blood Cells, in Dogs and Cats - *February 4, 2021*
- Kidney Failure (Chronic) Links for Additional Information - *October 7, 2020*
- Kidney Failure in Dogs and Cats: Where to Begin - *September 23, 2020*
- Fluid Therapy in Pets - *June 16, 2020*
- Glomerulonephritis in Dogs and Cats - *October 29, 2019*
- Calcium Phosphorus Balance in Dogs and Cats - *June 5, 2019*
- Kidney Transplants for Cats and Dogs - *June 1, 2019*
- Kidney Dialysis: Is it for your Pet? - *August 1, 2018*

- High Blood Pressure in our Pets - *July 19, 2018*

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