

## **Scottsdale Veterinary Clinic Chronic Kidney Disease Diagnosis** **And** **Recommendations for Dogs**

Kidney failure is the one of the more common causes of death in dogs and cats. It is important to recognized kidney failure in the early stages (70-85% loss of function) when your pet has minimal to no symptoms to prevent progression to the later, more severe stages. Kidney failure will not show up on blood profiles until 85 % of kidney function has been lost.

Watch for the following signs of early kidney failure in your pet: weight loss, excessive drinking, excessive urination, constipation, and high blood pressure. Once severe symptoms have developed it is more difficult to treat your pet.

### **Stage 1 Kidney Insufficiency Diagnosis:**

1. Blood kidney values are normal- Creatinine is less than 1.4
2. Urine Specific Gravity (urine concentration) of early morning sample is less than 1.030. This means the urine is not concentrating correctly or protein is in the urine. If bloodwork is normal, but protein is in the urine, this is a sign of early kidney failure.
4. Abnormalities on ultrasound of the kidney may also indicate early kidney failure.
5. Urine culture, blood pressure, tick fever test, and x-rays are recommended.
6. Your pet will most likely appear normal at this stage of kidney failure!

### **Stage 1 Kidney Insufficiency Treatment:**

1. Diet designed for kidney failure can double the lifespan of your pet at this stage. We recommend K/D or Royal Canine Modified LP for life.
2. Make sure that your dog always has access to water. We recommend bottled drinking water to encourage them to drink more.
3. Start epakitin (phosphorus binder) to prevent additional damage to the kidneys. The goal is to maintain the phosphorus between 2.5 - 4.5 mg/dl on bloodwork.
4. Start fish oil (DHA) 10 mg per pound per day. A 50 pound dog would receive 500 mg of DHA per day. If too much is given they may develop diarrhea.
5. Recheck bloodwork and urine in 1 month. We will add Rehmannia-8 if the abnormal values have not improved. Rehmannia-8 is a dilator for the blood vessels in the kidneys to improve function.
6. Bloodwork and Urine will be rechecked every 3-6 months for the life of your pet, this will help adjust therapy as the disease slowly progresses. Blood pressure monitoring may be performed to make sure that additional medications are not required.
7. Treatment in this stage is important to prevent and slow progression of the kidney failure.
8. If your pet has dental disease a dental cleaning is recommended.

**Stage 2 Kidney Insufficiency Diagnosis:**

1. Blood kidney values are slightly elevated- Creatinine is 1.4-2.0
2. Urine Specific Gravity (urine concentration) of early morning sample is 1.015- 1.008.
3. Severe amount of protein may be present in the urine.
4. You may start to notice your pet is drinking more, losing weight, and acting more lethargic.

**Stage 2 Kidney Insufficiency Treatment:**

1. Continue encouraging water consumption, kidney diet, fish oil, epakitin.
2. If not already started Rehmannia-8 may be started at this time.
3. If plasma potassium levels are low normal or low (less than 4.5 mmol/l) we will start potassium supplements.
4. If kidney infections are suspected, long term antibiotics may be recommended.
5. Blood work, blood pressure, and urine will be checked every 3-6 months.
6. If your pet has dental disease a dental cleaning is recommended

**Stage 3 Kidney Failure Diagnosis:**

1. Moderate kidney value elevation- Creatinine is 2.1-5.0. BUN values are elevating.
2. Urine Specific Gravity is 1.012- 1.008 (No concentration)
3. Many times anemia is noted on bloodwork.
4. Symptoms that your pet is showing include: drinking excessively, weight loss, frequent urination, vomiting, significant decrease in appetite, significant increase in lethargy. At this stage medications and treatments are necessary to maintain the quality of their life.

**Stage 3 Kidney Failure Treatment:**

1. Continue encouraging water consumption, kidney diet, fish oil, epakitin, Rehmannia-8, and potassium. If blood pressure medications are needed they may be added at this time.
2. Add Azodyl at this time. This is a bacteria that aid in digestion of the toxins in the kidneys.
3. SQ fluids may be recommended at this time. We give these fluids under the skin 2 times per week to help flush out the kidneys. This acts similar to dialysis to help flush out the kidneys. Adding flavoring to the water may help stimulate them to drink more- viyo or small amount of chicken broth.
4. If albumin is low egg whites may be recommended on a regular basis.
5. Vitamin B in the form of injections or pet tincture may also be recommended.
6. At this stage bloodwork, urine, and blood pressure should be checked every 3 months for life.
7. Appetite stimulants (mirtazapine, cyproheptadine, diazepam) may be recommended.
8. Famotidine and Sucralfate may be recommended to help settle the stomach.
9. If your pet has dental disease a dental cleaning is recommended
10. If your pet has high blood pressure benazepril and/or amlodipine may be recommended.

**Stage 4 Kidney Failure Diagnosis:**

1. Severe kidney value elevation- Creatinine is greater than 5.0, and moderate to severe elevations in BUN.
2. Many clinical signs are present including mouth ulcers, diarrhea, vomiting, dehydration, bone and joint pain, and anorexia.
3. Many values are irregular on bloodwork including anemia.

**Stage 4 Kidney Failure Treatment:**

1. All previously recommended medications are continued. The doses of these medications may be increased or altered depending on bloodwork, urine, blood pressure, and clinically how your dog is doing. Medications will be required to prevent the rapid decrease in quality of life.
2. Dental cleaning may be recommended; however at this stage the dental will usually require additional hospitalization to flush out the kidneys before and after the dental. Antibiotics both before and after the dental will be required.
3. Aluminum Hydroxide may be added to help reduce phosphorus.
4. If diarrhea develops fortiflora may be recommended.
5. The fluids that are given under the skin may be increased to every other day or even daily if needed. If you are having trouble giving the fluids under the skin a GIF tube may be implanted under the skin to allow you to give fluids quicker and easier.
6. If your dog is not eating well we will discuss placing a feeding tube. This allows easier access to perform feedings and administer the medications.
7. If your dog is anemic- less than 20 on the PCV we may recommend erythropoietin or darbepoetin.
8. To encourage your pet's appetite anabolic steroids can aid in kidney function and regrowth of red blood cells.
9. Arthritis medications or pain medications may be required for joint pain.
10. Hospitalization, IV fluids, and IV medications may be required to help flush out the kidneys.

**Stage 5 Kidney Failure:**

Stage 5 kidney failure will require dialysis or kidney transplant for survival and for most, euthanasia is best for the patient.