

Paw Prints
The Mighty Kidney!
April '07

The recent recall of canned pet foods has alerted the public about the possibility of kidney damage occurring as a result of toxicity, or poisoning. Kidney disease occurs in people and pets for many reasons and the diagnosis and treatment of kidney ailments is indeed a complex and fascinating subject.

Normal dogs and cats are born with two kidneys. They are richly supplied with blood and have a lot of work to do! Kidneys not only regulate the water balance, deciding when to save body water and when to eliminate it, they also filter the blood to clean it of waste products. This cleaning function is a complex and difficult job. A very delicate blood vessel structure must select which are the good proteins and chemicals to save in the blood stream and which are the waste products to be eliminated. Part of this function includes helping regulate blood minerals like calcium and electrolytes like potassium. Kidneys also monitor the level of red blood cells in dogs and cats and secrete a hormone to tell the bone marrow when to "top off the tank." As if all this wasn't enough of a job description, kidneys play a vital role in regulating blood pressure. This is by no means a complete list. The kidneys are truly a vital organ system ... pets can't live without them.

Unfortunately kidneys do not heal well when they are injured. Injury can occur from infection, toxins including some drugs, stresses such as dehydration or blood pressure fluctuations, trauma, immune system attacks, aging and more. Sometimes the delicate filtering structures just get clogged up with the left over debris from chronic infections as far away as dental disease and skin problems. Pets are only born with a finite number of functional kidney units and once they die, they do not re-grow. Fortunately they start out with a tremendous reserve capacity.

Diagnosing kidney impairment is not at all easy. It is believed that the common blood testing procedures in use today will not detect kidney dysfunction until approximately 4/5 of all of the kidney tissue is no longer working. That's right, once the pet is down to only 20% of function, only then will our blood tests begin to register a problem. A complete urinalysis will tend to show changes much earlier. A urine culture may be necessary to rule-out a treatable infection. And a newer test for loss of a "good" protein

in the urine, called an ERD test for Early Renal Diagnosis, can alert the practitioner to problems fairly early as well.

Even when the above tests do show significant changes, the pet may have temporarily altered, even very high values, as a response to a recent 'insult' to the kidneys that may indeed be correctable. Re-hydrating the pet, usually over 48 hours, with re-testing and re-evaluating must be done to confirm a diagnosis of kidney impairment ... re-hydrate, re-test, re-evaluate!

Early diagnosis of kidney problems can open the door to a wide range of treatment and management options. Once again, we're stressing the importance of wellness physical exams and diagnostic testing. Please work with your veterinarian to establish a baseline for your furry friend and then monitor for changes.

Until next month, healthy pets, happy people! Dr Pat Mahoney

Dr. Pat Mahoney, DVM, is the owner of American Animal Hospital in Neenah, an AAHA certified pet care clinic. To submit your pet related questions for a future column, go to the email link at www.ameranimal.com.