

# **Kidney Disease?! Now What?**

## **What Does This Mean?**

Kidney disease or kidney failure means that the kidneys are not able to do some of the tasks they are supposed to do as well as they are supposed to do them.

## **So What Do The Kidneys Do?**

They do far more than just make you pee! The kidneys filter substances you want to keep in your body from substances you want to get rid of. The stuff you want to get rid of is dissolved in water, and that's urine! The kidneys can conserve water in times of dehydration, and when you drink too much they can remove excess fluid to prevent dilution of the blood stream. They also keep our electrolytes, vitamins, and minerals at a steady level. They regulate blood pressure, help to make red blood cells, manage the pH of our bloodstream, and conserve proteins in the body.

## **What Happens When the Kidneys Start to Fail?**

We are typically born with 2 kidneys. This means we have a huge excess of kidney tissue when we are young and healthy. It takes losing roughly 60-75% of our kidney tissue to create kidney failure. This can happen as a result of toxin exposure, chronic disease, infection, or simply age.

When the kidneys are not working at their finest, they cannot make concentrated or strong (dark yellow) urine. A pet with insufficient kidney function will need to drink more and urinate more in order to process the body's waste. At a certain point, the kidneys will not be able to keep up and toxins will start to build up in the bloodstream. Once the toxins build up to a certain level, the pet starts to feel ill. These pets can lose muscle, become lethargic, stop eating, vomit, and just generally feel miserable. Up until this point, pets with kidney disease feel pretty good and lead a good quality of life.

In addition to toxin buildup, pets with kidney disease can have high blood pressure (hypertension), anemia, and suffer from dehydration, loss of blood proteins, and electrolyte imbalances.

## **How Is This Problem Diagnosed?**

We are able to detect and stage kidney disease based on a combination of clinical signs, exam findings, and the results of bloodwork and a urinalysis. We are able to not only diagnose kidney disease but track our progress over time by measuring certain markers in the bloodstream. Creatinine and BUN are two substances created by our bodies and constantly removed by the kidneys. When these values rise, it is a good indication that the kidneys are not performing at their best. SDMA is a newer marker that can detect kidney disease at an earlier stage. The urine analysis confirms kidney disease by showing that the urine is not concentrated. We also monitor electrolytes, blood counts, blood pressure, and urine protein to help determine the stage of kidney disease. We will probably culture the urine to check for possible urinary infection.

Kidney failure is staged to help guide treatment and to determine the pet's prognosis (outlook). Stage 1 is early kidney disease, and stage 4 is end-stage where we are likely to have to make end-of-life decisions. If kidney disease is detected and managed early enough, pets can live for months to years in the earlier stages of disease and lead quite happy lives.

### **Enough Of The Bad News, How Do We Treat It?**

In a word, FOOD! This is a disease where food is used as medicine. A modified (prescription) diet can correct imbalances and slow the disease process. Cats with kidney disease who are on a kidney diet live on average twice as long as cats who eat regular food.

A good renal (kidney) diet takes into consideration reducing toxins, controlling high blood pressure, electrolyte balance, pH balance, and reduces inflammation as well. These diets restrict phosphorus which has been shown to slow kidney disease. They supplement potassium, restrict sodium, have lower levels of proteins (the kidneys work hard to break down proteins), and they are supplemented with fatty acids. The diets we prescribe have many decades of research behind them.

There's more to it of course. Pets with kidney disease need unrestricted access to fresh clean water at all times. Remember, they can't conserve their body's water, so if they can't drink consistently, they will become dehydrated quite quickly. As the disease progresses, we may provide your pet with additional fluids in the form of subcutaneous (SQ) fluids delivered under the skin. This can be done in the office or you can learn to do this at home. If your pet is feeling very sick, he or she may be hospitalized to receive intravenous (IV) fluids to get rehydrated and help flush out the toxin buildup.

In addition to fresh, clean water and the proper food, your pet will need his or her blood pressure measured regularly. Most cats and dogs with kidney disease have high blood pressure which needs to be managed to prevent worsening of the kidney disease as well as stroke, heart problems, blindness, and other consequences. The most common treatment is amlodipine, which is a pill that dilates blood vessels to reduce pressure.

If your pet has abnormal levels of protein in the urine, additional testing and medication will be recommended. Abnormal protein levels in the urine can further damage the kidneys by clogging the filtering mechanism and can lead to low protein in the bloodstream.

As the disease progresses, your pet may require additional medications to help with appetite, low blood counts, and other factors. If your pet progresses to stages 3 and 4 kidney disease, we will discuss his or her quality of life with you and help you make appropriate decisions.

Regular exams as well as blood and urine monitoring will be recommended to follow your pet's progress and catch new problems early. With early intervention and regular follow ups, your pet can do well for months to years!