

## **KIDNEY DISEASE IN DOGS AND CATS**

The kidneys play an integral role in the removal of metabolic waste from blood and regulate fluid balance with waste products eliminated from the body via urine. They are made up of millions of tiny functional units called nephrons that filter the blood and regulate blood volume and pressure, electrolyte and metabolite levels and influence blood pH. Kidney disease and ultimate failure of the kidneys can occur acutely with an abrupt decline in kidney function, usually the cause of a toxic insult, trauma, or cardiovascular shock, or can occur chronically with a gradual decline of the number of functional nephrons in the kidney. Acute renal failure can often be reversible, especially if due to a toxic insult, while chronic renal failure is usually irreversible and kidney function declines over a period of weeks, months and years.

Kidney disease is a relatively common disease of older dogs and cats (average age of onset is 6-8 years of age) and older cats in particular are overrepresented. As the function of the normal healthy kidney is to concentrate toxins into smaller volumes of urine for excretion from the body, kidney disease is usually characterized by the passing of increased volumes of dilute urine and increased thirst. The early clinical signs of chronic kidney disease can be quite subtle and some pets may have depleted over 75% of their functioning kidney before their owner is even aware that there is a problem. Unlike liver tissue, damaged nephrons do not regenerate or replenish and chronic kidney damage is irreversible.

In addition to increased thirst and urination, signs of advanced kidney disease include weight loss, anorexia, vomiting, diarrhoea, constipation, foul breath and sudden blindness due to hypertension (high blood pressure). Diagnosis of the condition is based on blood tests and analysis of urine. Animals in renal failure will have very dilute urine and bloods will usually reveal, among other things, elevated blood urea nitrogen and creatinine, two enzymes that are usually excreted efficiently by a normally functioning kidney. The earlier a diagnosis is reached, the better the chance of controlling the disease for as long as possible and slowing down further nephron loss. In extremely sick pets with advanced kidney disease, it is often necessary to hospitalise the pet and keep it on intravenous fluids initially to correct fluid and electrolyte deficits. Once the animal is stable, the animal can sometimes be treated as an outpatient with medication and dietary modification.

Early detection is by far the most effective means of slowing down the progression of kidney disease and, as the signs of kidney disease can be very subtle, regular check ups of pets once they reach middle age and routine blood tests to monitor kidney function are highly recommended. If you suspect your pet may be exhibiting signs of kidney disease please schedule a check up with your veterinary clinic.