



Chronic Kidney Failure in Cats



PETVET clinics are well-equipped, full-service, small animal veterinary practices providing comprehensive diagnostic, medical, surgical and dental care. We aim to offer quality service, giving your pet the maximum opportunity to lead a long and happy life.

ALL THE CARE YOUR PET NEEDS!



What do my cat's kidneys do?

Kidneys have many functions, they principally act to remove nitrogenous waste products from the blood stream, maintain essential nutrients e.g. potassium at the correct level, maintain hydration and produce urine.

What is chronic kidney failure?

The kidneys have a large amount of spare capacity to perform their various functions, so at least 70% of the kidneys need to be dysfunctional before clinical signs are seen. In many cases this means that the damage to the kidneys has been occurring over a number of months or years (chronic) before failure is evident. As chronic kidney failure (CKF) is most commonly seen in old cats, early signs of disease such as weight loss and poor coat quality are often put down to normal ageing. In the initial stages of disease the kidneys cope with their inability to concentrate waste products by excreting them at a lower concentration over a larger volume (compensated kidney failure). At some point this is no longer possible, resulting in a relatively rapid rise in waste products in the bloodstream and an apparent sudden onset of severe disease. Although chronic kidney failure is not a curable or reversible disease, appropriate support and treatment can both increase the quality of life, and prolong life by slowing down progression of the disease.

What are the causes of chronic kidney failure?

A large number of different disease processes can eventually lead to chronic kidney failure including:

-  Congenital malformations of the kidneys - e.g. polycystic kidneys.
-  Bacterial infections (pyelonephritis).
-  Glomerulonephritis - damage to the filtration membrane.
-  Neoplasia - various cancers of the kidney are seen, most commonly lymphosarcoma.
-  Amyloidosis - a build up of an unusual material in the kidney which prevents the kidney from functioning normally.
-  Viral infections e.g. Feline Immunodeficiency Virus or Feline Infectious Peritonitis virus.

Chronic kidney failure is therefore the end stage of a number of different disease processes rather than a specific condition in its own right.

How is the disease diagnosed?

Kidney failure is usually diagnosed by looking at the level of two waste products in the bloodstream, Urea and Creatinine. However, as some other conditions can also elevate Urea and Creatinine a urine sample also needs to be analysed at the same time. The urine specific gravity is measured to assess its concentration, and in most cats with kidney failure this is less than 1.030. Tests to measure the blood levels of other substances e.g. Potassium, Phosphorus and Calcium, as well as red and white blood cell counts, blood pressure and urine Protein-Creatinine ratios are also important in order to determine the best course of treatment once chronic kidney failure is diagnosed.

Could kidney failure have been diagnosed earlier?

Unfortunately this is very difficult as neither clinical signs of kidney failure nor rises in Urea and Creatinine are evident until significant loss of kidney function has occurred. In the early stages of disease there are no clinical signs to indicate that sophisticated kidney function tests, which can pick up early kidney damage, are required.



Diet and the management of chronic kidney failure

Dietary management is critical in cats with kidney failure, and there are three main aspects to this:

Water intake

Cats with kidney failure are more likely to become dehydrated (due to the reduced ability of the kidneys to conserve water). Maintaining a good fluid intake is therefore very important, and may help to slow progression of kidney failure. As cats obtain much of their water intake from their food, whenever possible, cats with kidney failure should be fed tinned (or sachet) foods rather than dry foods.

Protein content

An ideal diet for a cat with kidney failure should have a restricted protein content. Many of the toxic products that accumulate in the blood with kidney failure are a result of protein breakdown, and feeding a reduced protein diet will help to minimise this and improve quality of life. Protein restriction has to be performed with care though, as too little protein can be extremely detrimental to general health.

Low phosphate content

Restricting the phosphate content of the diet appears very beneficial in protecting the kidneys from further damage in cats with kidney failure. While restricting protein in the diet helps maintain quality of life, restricting phosphate appears to prolong the life of cats with kidney failure. Studies suggest this effect may be quite dramatic. If blood phosphate concentrations remain high, despite being on a low phosphate diet, further treatment with drugs known as 'phosphate binders' may be indicated to reduce the amount of phosphate absorbed from the intestine.

Other dietary measures

Other aspects of the diet may also have an important role to play in helping manage cats with kidney failure. These include:

- Anti-oxidants to try to protect the kidneys against further damage.
- Essential fatty acids to help maintain blood flow through the kidneys and reduce inflammation.
- Added Potassium to prevent hypokalaemia (low blood Potassium).
- Added bicarbonate (or similar) to help prevent acidosis (a build up of acid in the body which can also occur in kidney failure).

All these measures may help and have a role to play in keeping cats with kidney failure as healthy as possible for as long as possible. Because of the exacting nutritional demands in cats with kidney failure, feeding a specific veterinary therapeutic diet designed to manage all these aspects is strongly recommended. These diets are available through PETVET, and have a vital role to play in managing the disease.

Managing the change to a new diet

Cats will often develop a strong preference for particular diets, and low protein diets tend to be less palatable. This means that changing cats with kidney failure to an appropriate therapeutic diet can sometimes be difficult.

These tips may help:

-  Always make a change in diet gradual - over several days at least and sometimes over a few weeks if your cat is quite fussy.
-  Start by mixing a very small amount of the new food with your cats old food, and make sure it is well mixed.



-  Increase the amount of the new food slowly. Once your cat is happy to eat the old mixture, gradually replace the old food a small amount at a time. It may take a few weeks to transition to the new diet.
-  Warming the food to body temperature (around 30C) may help increase the palatability.
-  If necessary, talk to us about using appetite stimulants to make the transition easier.

In most cases, with sufficient care and time, cats can be very successfully transitioned to a new diet. As this is such an important part of managing kidney failure it is worth taking the time to do this properly. If cats absolutely refuse to eat a new diet, it is important that they eat something, so keep offering their old diet in this situation and contact PETVET for further advice.

Managing dehydration

Some cats do not consume enough water to compensate for what is being lost in the urine. In these cases, additional measures may need to be taken. These may include:

-  Making sure a good supply of fresh water is always available, and cats should be encouraged to drink by offering water from different bowls.
-  Using flavoured waters (chicken or tuna, for example) or water fountains to encourage drinking.
-  Adding further water to the food (if tolerated without affecting the appetite).
-  Using intermittent intravenous fluid therapy in hospital at PETVET.
-  Using intermittent sub-cutaneous fluid therapy which can be given at PETVET or at home.

Phosphate binders

If, despite using a low phosphate diet, blood phosphate levels remain high, using a phosphate binder added to the diet (such as Alutabs) may be valuable. This is important, as controlling blood phosphate levels appears to have a good protective effect on the kidneys in cats with kidney failure.

Potassium supplementation

Some cats with kidney failure develop low blood Potassium levels. This can cause muscle weakness, can contribute to inappetence, and itself can worsen kidney failure. Where this is identified, Potassium supplementation (usually Potassium Gluconate liquid given by mouth) is important.

Controlling blood pressure

Cats with kidney failure are at risk of developing high blood pressure (hypertension). This can have a number of damaging effects, potentially including blindness and worsening of the disease. Blood pressure should be monitored in all cats with kidney failure and where hypertension is found it should be treated. This is usually achieved with a group of drugs known as 'vasodilators'. In cats a drug called Amlodipine is particularly effective, but other drugs may also be used.

Treatment of anaemia

In advanced kidney failure, anaemia is quite common. This may be due to lack of production of the hormone erythropoietin (EPO) by the kidneys. EPO stimulates production of red blood cells in the bone marrow. But other factors, such as loss of blood in the intestines, can also be the cause. Severe anaemia can cause lethargy and weakness and a poor quality of life. Depending on its cause and severity, a number of treatment options may be available to manage anaemia including anabolic steroids, iron supplementation, management of gastrointestinal ulcers and in some cases supplementation with EPO.



Treatment of nausea and vomiting

Nausea and vomiting are more common in advanced kidney failure and can cause inappetence and significantly affect quality of life. Various drugs can be used to control these signs including Cerenia and Omeprazole.

Use of 'ACE inhibitors'

Blocking activation of a hormone known as Angiotensin may be of benefit in chronic kidney failure when there is significant leakage of protein into the urine. This can be achieved by using so called 'ACE-inhibitors' (Angiotensin converting enzyme inhibitors).

What is the prognosis for cats with kidney failure?

Once sufficient damage has been done to cause kidney failure, the compensatory changes and adaptations that occur to try to maintain normal kidney function usually eventually fail and progressive kidney damage occurs. The disease is usually progressive over time and will eventually lead to the need for euthanasia. However, the rate of progression of kidney disease varies considerably between individuals and appropriate support and treatment can increase the quality of life of affected cats as well as slow down the progression of the disease.

Notes

CLINIC LOCATIONS

PETVET Lower Hutt
70 Pharazyn Street, Melling
Lower Hutt 5010

PETVET Silverstream
9 Kiln Street, Silverstream
Upper Hutt 5019
+64 4 5277552