

CHRONIC KIDNEY FAILURE

What is meant by the term "Chronic Kidney Failure"?

The term "chronic kidney failure" suggests that the kidneys have stopped functioning and are, therefore, not making urine. However, by definition, kidney failure is the inability of the kidneys to remove waste products from the blood. This definition can occasionally create confusion because some will equate kidney failure with failure to make urine.

When is this likely to happen in my dog?

The typical form of chronic kidney failure is the result of ageing; it is simply a "wearing out" process. The age of onset is related to the size of the dog. For most small dogs, the early signs occur at about 10-14 years of age. However, large dogs have a shorter age span and may go into kidney failure as early as 7 years of age. In some breeds there is a genetic predisposition to kidney failure.

What changes are likely to occur in my dog?

The kidneys are nothing more than filters. When ageing causes the filtration process to become inefficient and ineffective, blood flow to the kidneys is increased in an attempt to increase filtration. This results in the production of more urine. To keep the dog from becoming dehydrated due to increased fluid loss in the urine, thirst is increased; this results in more water consumption. Thus, the early clinical signs of kidney failure are increased water consumption and increased urine production. The clinical signs of more advanced kidney failure include loss of appetite, depression, vomiting, diarrhoea, and very bad breath. Occasionally, ulcers will be found in the mouth. When kidney failure is accompanied by these clinical signs, it is called uraemia.

How is chronic kidney failure diagnosed?

The diagnosis of kidney failure is made by determining the level of two waste products in the blood: blood urea nitrogen (BUN) and blood creatinine. The urinalysis is also needed to complete the study of kidney function.

Although BUN and creatinine levels reflect kidney failure, they do not predict it. A dog with marginal kidney function may have normal blood tests. If that dog is stressed with major illness or surgery, the kidneys may fail, sending the blood test values up quickly.

Since this is basically just a wearing out process, can it be treated with anything other than a kidney transplant?

In some cases, the kidneys are worn out so that they cannot be revived. However, with appropriate treatment many dogs will live for several more months or years.

Treatment occurs in two phases. The first phase is to "restart" the kidneys. Large quantities of intravenous fluids are given to "flush out" the kidneys. This flushing process, called diuresis, helps to stimulate the kidney cells to function again. If enough functional kidney cells remain, they may be able to adequately meet the body's needs for waste removal. Fluid therapy includes replacement of various

electrolytes, especially potassium. Other important aspects of initial treatment include proper nutrition and drugs to control vomiting and diarrhoea.

What can I expect from this phase of treatment?

There are three possible outcomes from the first phase of treatment:

1. The kidneys will resume functioning and continue to function for a few weeks to a few years.
2. The kidneys will resume functioning during treatment but fail again as soon as treatment stops.
3. Kidney function will not return. Unfortunately, there are no reliable tests that will predict the outcome.

If the first phase of treatment is successful, what happens next?

The second phase of treatment is to keep the kidneys functioning as long as possible.

This is accomplished with one or more of the following, depending on the situation:

1. A high quality protein diet. This helps to keep the blood tests as close to normal as possible, which usually makes your dog feel better. Also, once kidney disease is advanced, a controlled protein diet will decrease the workload on the kidneys. We can recommend commercially prepared foods that have the quantity and quality of protein needed by
2. A phosphate binder. Phosphorous is removed from the body by filtering through the kidneys. Once the filtration process is impaired, phosphorous begins to accumulate in the blood. This also contributes to lethargy and poor appetite. Certain drugs will bind excess phosphates in the intestinal tract so they are not absorbed, resulting in lower blood levels of phosphorus.
3. A drug to regulate the parathyroid gland and calcium levels. Calcium and phosphorus must remain at about a 2:1 ratio in the blood. The increase in blood phosphorus level, as mentioned above, stimulates the parathyroid gland to increase the blood calcium level by removing it from bones. This is recommended if there is evidence of abnormal function of the parathyroid gland.
4. A drug to stimulate the bone marrow to produce new red blood cells. The kidneys produce erythropoietin, a hormone that stimulates the bone marrow to make red blood cells. Therefore, many dogs in kidney failure have a low red blood cell count, or anaemia.
5. A drug to increase blood flow to the kidneys- benazepril

How long can I expect my dog to live?

The prognosis is quite variable depending on response to the initial stage of treatment, your ability to perform the follow-up care and your dog's willingness to eat the special diet. Treatment can be effective. Many dogs will have a good quality of life for months or even years.

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