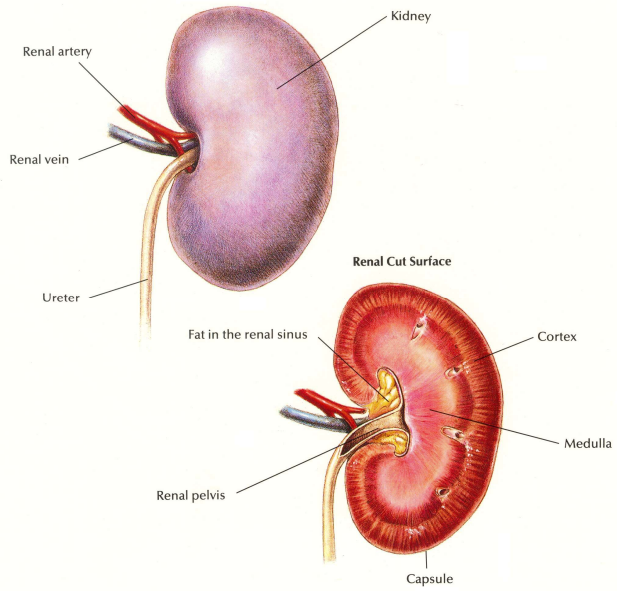
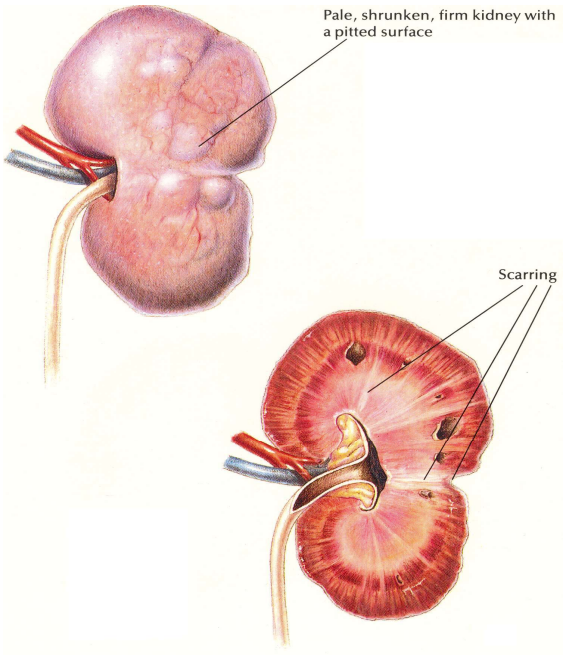
WHAT IS CHRONIC KIDNEY FAILURE?

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. Kidney failure is NOT the inability to make urine. Ironically, most pets in kidney failure are actually producing large quantities of urine, but the body's wastes are not being effectively eliminated.



When is this likely to happen in my pet?

The typical form of chronic kidney failure is the result of aging; it is simply a "wearing out" process. The age of onset is related to the size of the pet. For most cats & 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 seven years of age.



What changes are likely to occur in my dog?

The kidneys are nothing more than filters. When aging 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 pet 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, diarrhea, and very bad breath. Occasionally, ulcers will be found in the mouth. When kidney failure is accompanied by these clinical signs, it is called uremia.

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. A 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 pet with marginal kidney function may have normal blood tests. If that pet 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 aggressive treatment many pets 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 toxins in the body. 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 diarrhea.

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:

Special diet: The ideal diet is low in protein, low in phosphorus, and not acidified. The low protein reduces the amount of ammonia the body has to eliminate through the kidneys. The less ammonia in your pet, the better they feel. This one step alone has been found to increase survival time by 4-times the duration of making no changes.

Hypertension Medication: pets with kidney failure often have high blood pressure too. The body is designed to divert a certain percentage of the blood flow through the kidneys for "cleaning". As kidney disease develops there is less and less healthy kidney to handle this volume of blood so the blood is forced through the remaining healthy kidney with more force which leads to high blood pressure. High blood pressure damages the remaining kidney which causes progression of the kidney disease.

Fluids given at home: Once your pet is stabilized, fluids can be given under the skin (subcutaneously). This serves to continually "restart" the kidneys as their function begins to fail again. This is done once daily to once weekly, depending on the degree of kidney failure. Although this might not sound like something you can do, you will be surprised at how easily the technique can be learned and how well most dogs will tolerate it.

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.

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 can be helpful for the sake of the normalizing calcium to phosphorus ratio, but it can make the bones brittle and easily broken. Calcitriol can be used to reduce the function of the parathyroid gland and to increase calcium absorption from the intestinal tract.