KIDNEY DISEASE

The kidneys are essential to life, they:

1) Control the hydration (water content) of the body by adjusting the volume of water excreted in the urine. If the body needs water, the kidneys reduce the amount of water lost in the urine (ie. concentrate the urine).
2) They excrete the toxic waste products of protein breakdown (mainly urea and creatinine).
3) They help to control electrolyte levels and pH of the blood.
4) They produce hormones which are responsible for the absorption of calcium and for the production of red blood cells.

The kidneys have substantial reserves hence an animal can have kidney disease long before they show clinical signs of kidney failure. Although there is no cure for chronic kidney failure, since existing renal damage is irreversible, measures to correct biochemical changes, alleviate clinical signs and slow the progression of renal damage will improve quality of life.

KIDNEY FAILURE CAN BE SECONDARY TO INFECTIONS, TOXINS, IMMUNE DISEASES, HEART DISEASE, GENETIC PROBLEMS (E.G. POLYCYSTIC KIDNEY DISEASE IN PERSIAN AND RELATED CAT BREEDS) OR CANCER, BUT WHATEVER THE CAUSE IT RESULTS IN :
A) An inability to keep water in the body so the animal becomes dehydrated despite the fact that it drinks more than usual.
B) A build up of toxins and electrolytes which may result in depression, loss of appetite, weight loss, bad breath, ulceration in the mouth and intestines, vomiting, and in severe cases death.
C) Anaemia and weak bones due to lack of hormone reproduction.

SIGNS OF KIDNEY FAILURE
1) Increased thirst and urination
2) Loss of appetite
3) Weight loss
4) Lethargy, anemia
5) Ulcerations of the mouth and intestines - bad breath
6) Vomiting
7) Dehydration
8) Blindness, heart and neurological disease due to high blood pressure

DIAGNOSIS
This involves blood and urine tests. There is an increase in urea, creatinine, phosphorus, total protein and albumin in the blood, and there may also be a non-regenerative anaemia.

TREATMENT
Involves intravenous fluids (a drip) to rehydrate the animal and to correct the electrolyte balance and flush the toxins out of the body. In some cases hormone and antibiotic therapy is also required to stimulate the appetite and prevent or combat infections. Sometimes drugs are also needed to treat gastrointestinal ulceration. A low protein diet is essential to reduce the amount of toxins produced. If there is at least 1/3 of the kidneys left undamaged then within 3-5 days of intensive treatment the kidneys will start to function.

HOME TREATMENT
1) The animal must have access to fresh water at all times. Feeding moist food is another way to increase water intake to help flush the kidneys.
2) Special diets for kidney disease

Diets available:
1) ***Prescription diets***

eg. Walthams low protein diet, Hills K/D: medicated canned diets available only through veterinary surgeons.
These have the following features:
1. Restricted phosphorus - this will slow the progression of renal failure. The effect of phosphorus restriction should be monitored by 12 hour fasting blood test. If the phosphorus is still high then phosphorus binding agents can be given also eg. aluminium hydroxide, carbonate, oxide.
2. Moderate (not excessive) protein restriction - this will reduce the work the kidneys have to do to excrete protein metabolites, reduce the intake of phosphorus and reduce the increased thirst, urination and acid load. There must be enough of the protein to prevent protein malnutrition.
3. Added vitamins as water soluble vitamin deficences are common and B complex vitamins may need to added to the diet
4.They are energy dense as appetite is poor and you want the animal to be able to obtain its nutritional requirements in a small volume of food. Fat is the best way to provide this energy and also enhances the taste of the food.

2) ***Homemade diets***:
You need to add a B multivitamin (low in phosphate) and mineral supplement.
These are quite fiddly and often not very appetising, and it is difficult to get all the animals specific requirements in a diet, hence the commercial diets are preferable. It is recommended you don't give milk to kidney cats as this is high in phosphorus which the kidneys can't excrete, also feed low salt products as animals with kidney disease retain salt and this can lead to high blood pressure.

CATS

1) mix 60g boiled brown rice, 20g yoghurt, 15g raw beef, 5g sugar, 0.2g CaCo3 - feed approx 240g of this mixture daily and multivit.
2) or mix 60g boiled rice, 20g cream cheese, 15g raw lamb, 5g sugar, 0.2g CaCo3 - feed approx 160g daily and multivitamins.
3) or braise 115g liver add 2 large hard boiled eggs, 2 cups of cooked rice, 1 tablespoon of vegetable oil, 1 teaspoon CaCo3. Moisten with water and multivitamins.

DOGS

Egg & Potato Diet (low protein, low phosphorous, high-potassium, normal sodium)
1 egg
3 cups potato, boiled with skin
1 tablespoon chicken fat
1 1/2 calcium carbonate tablets (600 milligrams calcium)
1/2 multiple-mineral tablet
Supports the caloric needs of an 8kg

Chicken & Potato Diet

(Low protein, low phosphorous, high potassium, low sodium)
1/4 cup cooked chicken breast
3 cups potato, boiled with skin
2 tablespoons chicken fat
1 1/2 calcium carbonate tablets (600 milligrams calcium)
Supports caloric needs of dog over 10kgs

Meat diets

1) braise 115g beef mince, add 1 hard boiled egg, 2 cups of cooked rice, 3 slices of white bread crumbed, 1 teaspoon CaCo3 and moisten with water and multivitamins.
2) or 100g lamb, 100g white bread, 300g boiled white rice, 10g vegetable oil, 40g butter sugar and multivitamins.

REGULAR MONITORING

Regular monitoring of renal failure patients is essential to optimise therapy and management and to hopefully slow down the progressive damage to the kidneys. We recommend animals with kidney disease have bloods, urine and blood pressure tests every three months.

1) Bloods tests to test urea, creatinine, to follow progression of kidney disease, and to see if phosphate, potassium, calcium and sodium levels are low or high. Supplementation of the diet may be required to correct these abnormalities.

2) Urine test to test for subclinical infections which can lead to further damage to the kidneys. Antibiotics may be need to fight off the infection.

3) Blood pressure testing as many kidney patients develop high blood pressure. Tablets can be given to reduce the blood pressure and so reduce the risks of blindness, heart problems and increased damage to the kidneys.

FOR MORE INFORMATION PLEASE DON'T HESITATE TO ASK.