



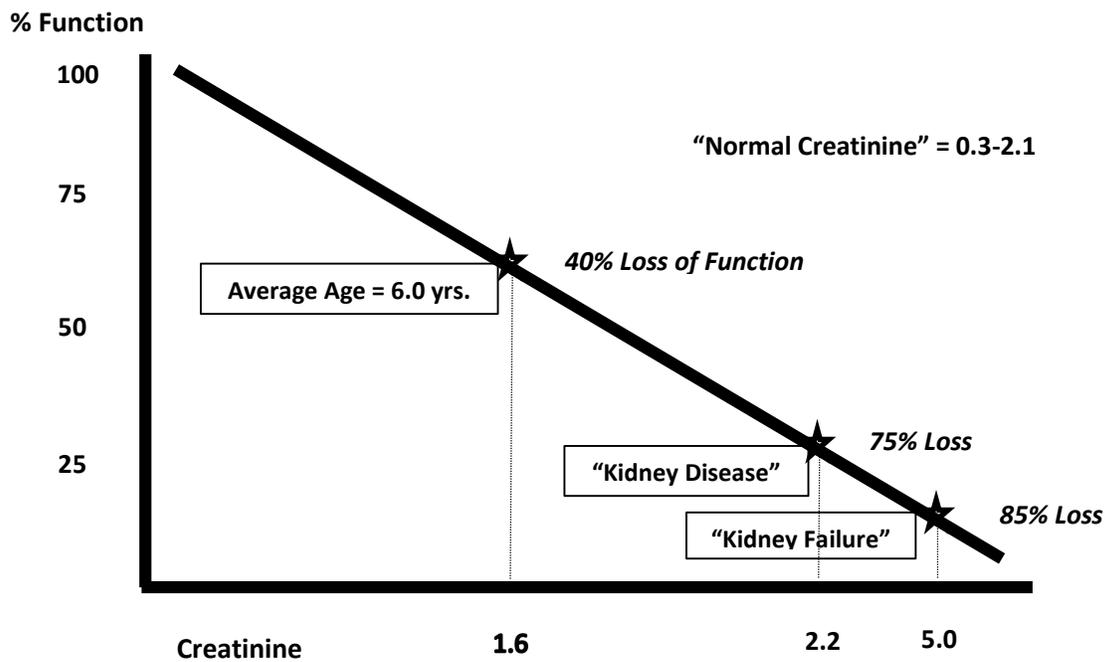
Gary D. Norsworthy, DVM, Diplomate ABVP (Feline) ♦ Lisa M. Restine, DVM ♦ Anne Romeo, DVM

Screening for Early Kidney Disease

For many years, we have recommended an annual blood panel for cats 10 years of age or older. The most common abnormality found is early chronic kidney disease. Recent advances have made earlier blood screening successful in finding and treating kidney disease even before age 10. Now we are recommending that cats six years of age or older have annual blood screens. The Midlife Screen is for cats 6-9 years of age. (A cat at age six is equivalent to a human at age 45.)

Kidney disease is the number one killer of cats over 14 years of age. Although finding the disease at 10-12 years of age gives us a head start on treatment, finding it even earlier means that we can now add several extra years of quality life to thousands of cats. We now have the tests to find it when about 40% of function is lost. About 40% of cats ages 6-9 already have this ultimately fatal disease.

Progression of Kidney Disease



Important Kidney Facts

- Most older cats die from kidney failure if they do not develop another life-threatening disease.
- The kidney deterioration continues throughout the cat's lifetime until the kidneys can no longer remove sufficient waste products from the blood to support life. This is called kidney failure.

- There are three points in the progression of kidney disease (deterioration) that we can reliably identify:

1) 40% loss of function. The creatinine value is about 1.6 mg/dl. Although this value is still in the “normal range” for creatinine, the kidneys are not normal. About 40% of cats ages 6-9 are affected.

2) 75% loss of function. The creatinine value first exceeds the high end of the normal range. The cat may appear normal; however, it often has mild weight loss and an increase in thirst and urination. The most easily identified sign is more wet litter in the litter box.

3) 85% loss of function. The creatinine is about 5.0 mg/dl. The cat is losing weight, has a poor to decreased appetite, drinks and urinates excessively, experiences moderate to severe dehydration, and becomes progressively less active. Aggressive treatment in the hospital and at home is required if the cat is to improve. With treatment some cats return to a fairly a normal state of health; however, the cat should not be expected to live more than a year. Many live only a few weeks.

Treatment with Calcitriol

Calcitriol (cal sa TRY ol) is the active form of vitamin D. It is made only in the kidneys and is our latest tool to slow the progression of chronic kidney disease. Protocols for its use have been developed, and a recent study demonstrates its effectiveness in cats. The following is a summary of how it works to extend the life of your cat:

- The body demands a 2:1 ratio of calcium to phosphorus in the blood. There needs to be twice as much calcium as phosphorus.

- Phosphorus is found in all foods and is absorbed into the blood as the food is digested.

- If the phosphorus level gets too high, normal kidneys release the excess into the blood (Plan A). However, kidney disease prevents that from happening, resulting in too much phosphorus in the blood and an improper calcium to phosphorus ratio.

- Calcitriol is a hormone made by the kidneys that has a major role in calcium and phosphorus levels in the blood. It causes an increase in calcium in the blood (Plan B). However, calcitriol can no longer be made by the time there is 40% loss of kidney function. This occurs about age 6 years.

- Without calcitriol, the body goes to Plan C to fix the improper calcium to phosphorus ratio by raising the calcium level in another manner. The parathyroid gland is stimulated to fix the problem. It “fixes” it by removing calcium from the bones and moving it into the blood.

- Plan C fixes the problem in the short-term, but it ultimately results in uncontrolled production of parathyroid hormone causing too much calcium to accumulate in the blood.

- Excess blood calcium results in calcium deposited in various body tissues including the kidneys. This is called calcification and leads to a more rapid onset of kidney failure.

- In short, Plan C (also known as renal secondary hyperparathyroidism or RSHPT) initially is a good thing, but it ultimately results in severe damage to the kidneys. Once started, it cannot be stopped, so the kidneys decline at a faster rate.

- If given before Plan C (RSHPT) occurs, calcitriol can add 1-2 years of good-quality life to most cats with kidney disease.

Calcitriol is a preventive drug. It works best when started early in the course of kidney deterioration. Because it is a hormone made by the kidneys, it has no side-effects as long as it is dosed properly.