

# FELINE IMMUNODEFICIENCY VIRUS

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Feline immunodeficiency virus (FIV) was first identified in an immunosuppressed cat in 1986. FIV is a lentivirus (slow virus), so named because of the slow development of disease. FIV is of the same family of viruses as human immunodeficiency virus (HIV), which causes acquired immunodeficiency syndrome (AIDS) in people. It is important to remember that FIV is infectious only to cats.

Immunodeficiency related to FIV infection occurs most often in free-roaming, male cats older than 6 years of age. Transmission of FIV is usually through cat bites incurred when fighting. Defense of territory explains the higher incidence of disease in male cats. FIV is occasionally transmitted to kittens by their mothers.

Random testing of cats seen by veterinarians shows a healthy cat prevalence of 1 to 2 percent in the United States and up to 12 percent in Japan, where most cats are kept outside and are not neutered. 12 to 40 percent of sick cats are infected with FIV. Once cats develop FIV infection, they are infected for life. Studies of frozen serum samples from 20 years ago show that the prevalence of FIV infection has not changed.

Cats with FIV, like people with HIV, have an acute phase of illness that begins four to six weeks after a bite from an infected cat. Most cats develop fever, depression and enlarged lymph nodes that last from weeks to months. These symptoms are usually mild enough that owners rarely notice. Kittens infected as newborns may die in the acute phase. After recovery from the acute phase, these cats may appear completely normal for three years or more. During this asymptomatic period, the FIV virus is gradually destroying the immune system, limiting the ability to fight infection.

When the immune dysfunction is relatively mild, cats have bacterial and viral infections commonly seen in cats, such as mouth infections, abscesses, chronic nasal and eye discharges, skin infections, ear infections, and diarrhea. FIV infected cats have ringworm at three times the expected rate. These infections respond to usual treatment, but not as well as expected, and often recur after treatment is completed.

FIV can also affect the bone marrow, causing anemia. Parasitic diseases such as Toxoplasmosis that normally cause only mild signs become life threatening. The FIV has an affinity for the brain tissue and can produce personality changes. Shy cats may become aggressive and outgoing cats may hide. Malignancy of lymph node cells (lymphoma) may develop. Cats infected with FIV are also more likely to develop kidney failure.

When immune depression is severe, cats may develop opportunistic infections (infections that do not usually occur in that species) such as demodectic mange seen in dogs. During the later stages, standard treatments are not effective because they require the help of the immune system to resolve infections. Nevertheless, immunosuppressed cats may live a year or longer if treated.

When FIV is suspected, a blood test can be done. A negative test usually excludes a diagnosis of FIV, but an early infection (first two months) could be missed. A positive test with appropriate signs is quite reliable, but an occasional false positive test can occur. A Western blot test (a more specific and definitive test) of blood confirms the diagnosis.

A positive test for FIV is not a reason for euthanasia. A study of newly diagnosed FIV infected cats showed that seven of eleven were still alive two years later. We rarely know when cats become infected. A cat with early infection may have three or four more years of disease-free life. FIV positive cats should be kept indoors for the safety of other cats and to limit their exposure to disease.

The response to treatment of FIV infected cats depends on the degree of immune suppression. There are no good antiviral drugs for the cat. Azidothymidine (AZT), a drug used in people to inhibit virus reproduction, works against the FIV virus but has significant toxicity in the cat. There are other promising drugs but they are not yet available. Most of the illnesses in FIV infected cats result from secondary bacterial infections that can be controlled with antibiotics. Antibiotics can prolong the cat's life in a poorly functioning immune system.

