

# Feline Immunodeficiency (FIV)

FIV, or Feline Immunodeficiency Virus, is a contagious disease that presents different challenges to shelters, rescue groups, and foster homes. In this information sheet we offer an overview of the disease in an effort to assist organizations in formulating their own strategy to deal with this frustrating disease.

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## What is FIV?

FIV, or Feline immunodeficiency virus, is a disease of cats that is quite similar to human HIV/AIDS. Like a person with HIV, a cat can be infected with FIV and enjoy a good quality of life for quite some time before, if ever, developing full blown disease. There is no cure for FIV, and cats with this disease are vulnerable to a number of secondary infections due to a suppressed immune system.

## Who gets FIV?

Although some wild cats can get FIV, there is no evidence that this disease is transmissible to any other species besides felines. FIV infected cats do not pose a risk for HIV infection in humans. Although it can affect cats of any age or gender, adult age, outdoor access, male gender, intact neuter status, and the presence of clinical disease remain the prime risk factors for seropositivity.

As with FeLV, practitioners have reported that FIV is more common in cats with certain clinical conditions, such as oral disease (9.7%), respiratory disease (6.4%), and abscesses (12.3%). Identifying these conditions in cats should trigger testing for both FeLV and FIV, especially if cats are not recovering from a course of treatment for "run of the mill" upper respiratory disease in the shelter setting.

## How is FIV spread?

Like HIV virus, FIV is not very readily spread. The main route of transmission is through bites. It is rarely spread through casual contact, and cats may cohabitate for years without transmitting the disease. However, bites are relatively likely to occur when a cat is newly introduced into a group. Introduction of an FIV positive cat to a household with FIV negative cats (or vice versa) therefore poses a moderate risk of disease transmission. Individually housed infected cats in a shelter do not pose an infectious risk to the shelter population.

Although transmission to kittens at or near the time of birth has been experimentally reported, in nature this appears to be extremely uncommon. Kittens born to FIV positive mothers are at low risk for infection, although they may initially test positive due to the presence of maternal antibodies.

FIV is not very durable in the environment. It is inactivated by most commonly used disinfectants. It can survive for up to 48 hours in a moist environment at room temperature.

## **How is FIV Diagnosed?**

Blood tests are available for screening for FIV in-house or at most labs. The most commonly used test is the ELISA test, which looks for viral antibodies in the blood. It is imperative to follow the instructions exactly for whatever test is used, as the consequences of both a false positive and a false negative test are potentially severe. Staff members performing the test should be trained and periodically evaluated.

## **How accurate is the test?**

The blood test is quite accurate, but false positives and occasionally false negatives do occur. In healthy, low-risk populations FIV is quite uncommon, and this leads to an increase in the relative number of false positive results. The blood test may also falsely identify recently infected cats as negative. To be absolutely certain, cats must be tested 1-3 months after their last known exposure. Kittens under 5 months old may test positive due to the presence of maternal antibodies OR true infection (see below for more information on this).

Recently, two point-of-care tests have been shown to provide positive results only in infected cats, allowing practitioners to differentiate infection from vaccination<sup>1</sup>.

## **What additional tests are available?**

If resources allow, cats testing positive by the ELISA test should be retested by sending the appropriate sample to a laboratory for PCR. A positive test on IDEXX PCR means the cat is very likely truly infected, but a negative test does not rule it out. Several recent studies have demonstrated improved sensitivity and specificity of FIV PCR tests (>90% accuracy).

Western blot testing and IFA have been used in the past, but both tests have relatively low sensitivity and specificity compared to the ELISA. At the very least, the ELISA test should be repeated to ensure that correct technique was used.

## Strategies for FIV testing

Maternal antibodies complicate FIV testing in kittens. Maternal antibodies are usually eliminated by 3 months of age but can remain up to 5 months, though this is rare. If kittens are tested, kittens testing positive should be held and retested if possible, as many will eventually test negative. The logistics of this can be challenging: holding kittens for weeks in a shelter is likely to compromise their health and socialization as well as strain shelter resources. Foster care is much preferred, but because the FIV status of these kittens is unknown, they must be isolated from other cats in the household. Emotionally, it may be difficult for foster parents to manage the possibility that the kittens will ultimately test positive. In a shelter with a high euthanasia rate for kittens, holding for retesting may not be feasible. Although the risk of FIV is low in kittens, it is higher in kittens testing positive than in those testing negative. If some kittens are going to be euthanized, it may be reasonable to euthanize FIV positive kittens rather than healthy, friendly FIV negative kittens. In this case, the long term strategy should be reducing kitten intake through spay/neuter and preventive programs, such that more resources will be available in the future to manage these special needs cases.

False negatives are also possible in recently infected kittens. As mentioned, even in adult cats infection may take up to 1-3 months to develop, so a final test should be performed in a cat of any age 3 months after the last known exposure to be absolutely certain. Samples should be tested individually. **Pooling samples significantly decreases test accuracy.** Depending on agency resources and priorities, FIV testing may be performed at various points:

- Upon admission
- Prior to being placed for adoption; this strategy is most practical for shelters that rarely euthanize adoptable cats.
- At the time of adoption; this can be offered as a service with or

without a fee. This may be more practical than testing all cats in shelters where significant numbers of cats are euthanized rather than adopted. This approach risks heartache when adopters and staff have grown attached to the cat.

- Prior to significant investment such as extended treatment and foster care. This is ideal but especially important in high-risk groups (adult intact males, bite wounds/abscesses) and populations where FIV is relatively common.

## **What is the prognosis for cats with FIV?**

Cats with FIV can live for a number of years without developing clinical signs. Cats that are showing clinical signs at the time of diagnosis will likely succumb to the disease sooner than those that are healthy at the time of diagnosis.

A recent study compared survival of neutered FIV-infected cats housed in households with 1-2 cats with those housed in a single sanctuary population of 60 cats, 27 of which were infected with FIV<sup>2</sup>. The two-year survival was 94% of the household cats compared to only 37% of the sanctuary cats, which suffered a high rate of emaciation and lymphoma. These results suggest that crowding and stress increase morbidity and mortality associated with FIV infection and should be avoided. (Despite poor outcomes of FIV-infected cats in high-density housing, transmission to uninfected cats did not occur, suggesting that neutering was effective in controlling transmission.) Another recent study compared survival of FIV-infected household cats to uninfected cats and found no significant difference<sup>3</sup>. This suggests that well-cared for cats are likely to enjoy prolonged survivals, even if infected with FIV.

Again, while there is no cure for FIV, it is important to provide these cats with consistent good nutrition, protection from stress and infectious disease, and management of secondary conditions.

## **FIV Positive Cats in Shelters**

Due to the prolonged survival of FIV-infected cats, it is increasingly common for animal shelters to make them available for adoption. Some cat adopters may choose to house FIV-infected cats with uninfected cats if cats are neutered and show no signs of aggression since the risk of transmission appears to be very low. Practitioners can support these clients and contribute to a better understanding of the level of risk for transmission with education for risk mitigation, stress reduction in the household and increased surveillance for new infections that might occur.

If FIV positive cats are to be maintained in shelters, the following precautions should be taken:

- Cats should be housed individually or with other FIV positive cats
- FIV positive status should be noted on the cage and on paperwork
- Adopters should be counseled by knowledgeable staff to help in the understanding of the disease. [Click here](#) for an FIV Positive Adoption Counseling Checklist shared by our friends at Cat Adoption Team in Oregon.

## What about vaccination?

There is a vaccine available for FIV, although it is not 100% effective in preventing infection. In March of 2002 the USDA approved the use of an FIV vaccine developed by Dr. Janet Yamamoto at the University of Florida and manufactured by Fort Dodge under the brand name Fel-O-Vax™. The efficacy rate of the vaccine has been reported to be 67-84%.

Because FIV is not very readily spread, the routine use of FIV vaccination in a shelter is rarely indicated. Rather, the new owner and their veterinarian should decide whether the vaccine is appropriate for the individual circumstances of the cat. A cat should always be tested for FIV prior to vaccination.

## References

1. Westman, M.E., et al. Determining the feline immunodeficiency virus (FIV) status of FIV-vaccinated cats using point-of-care antibody kits. *Comparative Immunology, Microbiology and Infectious Diseases*. October 2015, 42: 43–52.
2. Beczkoski, P.M., et al. Contrasting clinical outcomes in two cohorts of cats naturally infected with feline immunodeficiency virus (FIV). *Veterinary Microbiology*. March 2015, 176(1-2): 50-60.
3. Liem, B.P., et al. Clinical findings and survival in cats naturally infected with feline immunodeficiency virus. *Journal of Veterinary Internal Medicine*. July/August 2013, 27(4): 798-805.