



**Veterinary Emergency  
+ Referral Center**  
of Hawaii

**Ettinger: Textbook of  
Veterinary Internal Medicine, 7th Edition  
Feline Leukemia Virus Vaccinations  
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**What is the Feline Leukemia Virus?**

Feline leukemia virus (FeLV) is a communicable agent in cats that is usually transmitted through virus-infected saliva via cat-fight wounds, mutual grooming, or sharing food and water dishes. The most hazardous situation for FeLV transmission is a multicat household in which a large number of cats are crowded into a limited space. The virus causes a fatal infection through development of malignancy or depression of immunity (inability to fight infection) with the development of secondary diseases. The virus lives only a few days in the environment and is easily killed by common detergents and disinfectants. Thus most of the risk of transmission is due to direct contact between cats.

**What are the symptoms of Feline Leukemia Virus?**

Most cats with FeLV infection die within 2 or 3 years of the time of infection. The most common problem is depression of the immune system, which makes the cat susceptible to a variety of secondary infections. Cats may have persistent and recurring abscesses, chronic mouth infections, chronic respiratory diseases, diarrhea, and poor appetite. The virus can also suppress the cells of the bone marrow that produce red and white blood cells. Red blood cell suppression produces severe anemia. Suppression of the white blood cells needed for prevention of bacterial invasion allows the development of uncontrollable infections.

Development of malignancies is also a major concern in FeLV-infected cats. FeLV was originally identified in 1964 in Scotland in catteries where there was an epidemic of malignancies. It was later found that months to years after infection, many cats develop malignancies of the cells of the lymph nodes and the bone marrow. When these malignant cells are found in the blood, the malignancy is called *leukemia*. These malignancies can also be found in many organs including the bone marrow, chest, kidneys, liver, and intestinal tract (called *lymphoma*).

**What tests are needed?**

A number of in-office blood tests exist that your veterinarian can perform to identify FeLV-infected cats. Cats in multiple-cat households should be checked to be sure they are not carriers of FeLV. All new cats introduced into the household must be quarantined for 3 months and checked twice for FeLV infection before being admitted into the household. Checking cats in the household and preventing the entry of infected cats are effective in developing a FeLV-free environment where vaccination is not necessary.

**What treatment is needed?**

No treatment exists to eliminate FeLV; only supportive care and treatment of the secondary bacterial infections with antibiotics are possible. Some of the malignancies induced by FeLV can be controlled with chemotherapeutic drugs for a few months to a year or longer.

Fortunately, vaccines are quite effective in preventing FeLV infection. Young cats are more susceptible to infection than adult cats and should be vaccinated before they come in contact with possible FeLV carrier cats. The current recommendation is an initial vaccine after 9 weeks of age and a second booster dose 3 weeks to a month later. Yearly booster vaccines are recommended for cats at risk.

Only killed virus vaccines are available for vaccinating cats against FeLV because of concerns that a modified live virus in a vaccine could undergo a mutation into a potentially dangerous virus. Killed virus vaccines of any type can cause the development of a tumor called a *fibrosarcoma*. This is an aggressive malignancy of fibrous tissue that develops in response to inflammation at the site of vaccination. The rate of development of malignancies at vaccine injection sites is estimated to be 1 in 5000 doses of vaccine given. In cats that are exposed to FeLV, outside cats, and cats that come in contact with cats that go outside, the infection rate for FeLV is 2 per 100. In these cats, the benefits of vaccination far outweigh the possible problems of vaccine-induced tumors. In cats very unlikely to be exposed, the risk/benefit ratio of vaccination is less evident. Cats that are kept strictly indoors are not at risk for infection if other cats in the same household are not infected with FeLV and all cats in the household are kept indoors.

**What is the prognosis?**

FeLV infection is a lethal infection of cats that can be readily prevented. All cats at risk should be vaccinated regularly.