

# FELINE LEUKEMIA VIRUS INFECTION

## About the Diagnosis

Feline leukemia (FeLV) is a virus that can infect cats. The virus acts by entering a cat's cells and "taking control" of the process that cells use for replicating themselves. In this way, the virus guarantees that it will survive in future generations of cells and spreads throughout the body. Some infected cats can develop very serious diseases as a result of the feline leukemia virus infection, and these include some types of cancer, bone marrow suppression, and immunosuppression (weakened immune system). This virus has been diagnosed in cats throughout the world and is not known to infect people; however, cats with this disease may harbor other infectious agents that can be spread to humans with weakened immune systems (such as individuals with HIV/AIDS, people undergoing chemotherapy treatments, etc.). Therefore, cats with feline leukemia infection should be monitored closely for any symptoms of illness and should be evaluated promptly if symptoms of any sort are seen.

Feline leukemia virus can be transmitted among cats in close, prolonged contact with each other through saliva (grooming, bites), urine, and other bodily fluids including nasal and eye secretions. It is extremely uncommon for a one-time exposure to lead to infection; rather, repeated exposure such as sharing food/water dishes and using common litter areas contribute to the spread of this virus between cats. Unneutered male cats that wander and fight have an increased risk of becoming infected or of transmitting the disease to other cats because of this behavior.

Feline leukemia virus can also be transmitted from an infected pregnant cat to her unborn kitten (fetus) or to her newborn kitten in her milk or through grooming. Infected fetuses may die in the uterus, such that a cat's owner may never know that the cat was pregnant. The infected fetus may be aborted or the newborn infected kitten may die shortly after birth. Some kittens that are born with FeLV survive to become adults but have intermittent illness during their lives (persistently infected adults).

Some infected cats do not show signs (asymptomatic) of infection outwardly; however, they can still pass the infection on to other cats. Infected cats that do show signs of illness (clinical signs, symptoms) may have weight loss, weakness, fever, dehydration, inflammation of the lining of the nasal passages (rhinitis), diarrhea, red eyes (conjunctivitis), sores in the mouth, enlarged lymph nodes, and/or abscesses under the skin. Anemia (decreased number of red blood cells) in cats is commonly caused by FeLV. Because this virus also infects white blood cells, the immune system is weakened. As a result, cats infected with FeLV are susceptible to infections with other organisms (secondary infections) such as bacteria, other viruses, protozoa, and fungi that in turn can lead to other symptoms, including respiratory and intestinal problems.

There are several blood tests currently used for establishing the diagnosis of FeLV. No test is 100% reliable, so if there is any question about the validity of a test result, a second type of FeLV blood test is warranted because a pair of tests is often superior to one test alone. There are many factors to consider when interpreting the results of these tests. For example, early in the disease, the test may be negative when, in fact, the cat has the virus but the number of virus particles is too low to be detected in the bloodstream. For this reason, if a cat with symptoms consistent with FeLV has negative test results, some veterinarians will repeat the test one to several months later. The cat's lifestyle must be considered when interpreting results of tests. Cats that roam or have been exposed to other cats that are known to have the disease are at a higher risk of testing positive for this virus, and repeated testing is more likely to be necessary in such cases.

The most commonly performed test for FeLV involves taking a small blood sample and screening for a piece of the virus itself using a small instrument (ELISA test). Results can be obtained in a few minutes. If results of this test are questionable, the veterinarian may suggest sending a sample to a laboratory for another blood test (IFA or PCR) to be performed to confirm the diagnosis.

Because there is no medication that will completely eliminate FeLV once a cat is infected, prevention of contagion through environmental control (indoor-only lifestyle, avoidance of contact with cats of unknown FeLV status) and vaccination are extremely important.

## Living with the Diagnosis

Cats that are diagnosed with FeLV must be confined indoors to prevent spreading this disease to other cats in the neighborhood. This confinement also prevents an infected (and therefore possibly immunosuppressed) cat from

contracting diseases from other cats and the environment. Infected cats should be examined by their veterinarians at least every 6 months so that subtle symptoms can be detected. Asymptomatic cats infected with FeLV should receive vaccinations to reduce the risk of other common, serious infections. The FeLV vaccine should not be given to FeLV-positive cats because once a cat has FeLV it is too late for the vaccine to help.

In multicat households, FeLV-positive cats should be isolated from all other cats and their environment (litter box, bowls, etc.). For this reason, cats with FeLV are sometimes adopted out to other homes with no cats. All other cats in the household should be tested for FeLV according to your veterinarian's testing scheme. Those cats that test positive should likewise be isolated or removed. Cats that test negative should be vaccinated against the virus if they are considered "high risk" by you and your veterinarian; for example, vaccination is recommended if an FeLV-negative cat roams outdoors, or lives with an FeLV-positive cat.

## TREATMENT

**Pet:** Feline leukemia virus can be very difficult to control because no medication can eliminate the virus entirely. Many factors influence the effectiveness of a treatment plan, including the cat's age, concurrent illnesses, and the strength of the immune system. There are different strains of virus, some more difficult to treat than others. Two general types of medicine are available. Immune modulators help to strengthen a cat's immune system. Antiviral agents directly impair the virus to prevent it from replicating. Treatment may require several weeks of injections or giving medications orally at home. Supportive care, including fluids to prevent dehydration, may necessitate occasional visits to the veterinarian. Proper nutrition is essential. Secondary infections and other concurrent diseases must be treated. For example, anemic cats may require blood transfusions. Cats with cancer may require chemotherapy. Even for cats that respond to treatment, the disease may recur. None of these treatments can completely rid your cat of the virus. Your veterinarian can tailor a treatment regimen for your pet.

**Environment:** FeLV is susceptible to most detergents and disinfectants (for example, diluted household bleach 1 part bleach to 30 parts water). It survives for several hours outside of the animal on objects such as food and water bowls. Litter box liners may be helpful in preventing transmission of this disease because the liner can be discarded.

## DOs

- Know the FeLV status of all cats in your household.
- Keep all FeLV-positive cats strictly isolated indoors **AT ALL TIMES**.
- Understand that having FeLV does not mean a cat is suffering; some cats keep the virus in check for years and have a normal quality of life and life expectancy, while others can become very ill.
- Realize that the seriousness of FeLV is highly variable and that the most reliable information comes from the evaluation of your specific cat (rather than generalizations in brochures, textbook chapters or Internet sources).
- Establish a schedule of regular visits to your veterinarian if your cat has FeLV.
- Give medication(s) prescribed for your pet exactly as directed.
- Contact your veterinarian immediately if your pet shows negative reactions to the medication(s) or new symptoms (that might be linked to FeLV-induced secondary disease).

## DON'Ts

- Do not introduce new cats to cats that you already have until you are sure that their FeLV status is negative.
- Do not assume that a cat vaccinated against FeLV cannot acquire the disease. No vaccine offers a 100% guarantee that a disease cannot be acquired.
- Do not allow a cat diagnosed with FeLV to roam freely outdoors.
- Do not allow a cat diagnosed with FeLV to eat uncooked meat (toxoplasmosis).

## When to Call Your Veterinarian

- If your pet shows negative reactions to the medication(s).
- If you cannot return for a scheduled visit.
- If your cat has been exposed to a cat with an unknown or positive FeLV status.
- If your cat has lost weight, decreased appetite, weakness, been bitten by another cat, diarrhea, sores in the mouth, or abscesses (lumps under the skin).

## Signs to Watch For

- When giving medication, watch for depression, weakness, decreased appetite, hives (bumps under the skin), vomiting, diarrhea, or any abnormal behavior.