

Viral Disease Testing in Cats

What viruses do we commonly test for in cats?

Feline viral testing typically encompasses testing for feline leukemia virus (FeLV), feline immunodeficiency virus (FIV), and feline coronavirus which causes feline infectious peritonitis (FIP).

What diseases do these viruses cause?

Feline leukemia virus (FeLV) is one of the most important infectious viruses in cats. FeLV is responsible for a number of diseases in cats including leukemia. FeLV is highly contagious and is transmitted through body fluids, and may be transmitted across the placenta in pregnant cats. See handouts “Feline Leukemia Virus Disease Complex” and “Feline Leukemia Virus Vaccination” for further information on this disease.

Feline immunodeficiency virus (FIV) is another virus that is specific to cats. FIV reduces the capacity of the cat's immune system to respond to other infectious agents. FIV is highly contagious and is transmitted primarily through cat bite wounds, although it may be transmitted by other routes such as across the placenta. See handout “Feline Immunodeficiency Virus” for further information.

Feline Infectious Peritonitis (FIP) is a disease caused by a mutated strain of feline coronavirus. FIP can cause a variety of clinical signs including the production of fluid in the abdominal and chest cavities. See handouts “Feline Infectious Peritonitis” and “Feline Infectious Peritonitis Testing” for further information on this disease.

When is testing indicated for these viruses?

There are a number of reasons for recommending testing for FeLV and FIV. Because both conditions can be associated with a wide variety of diseases, including those causing bone marrow and immune dysfunction, testing for FeLV and FIV is strongly recommended whenever a cat is ill.

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Testing might be recommended for other reasons. Examples include testing a cat that has been exposed to another cat of unknown FeLV or FIV status, or testing a new cat prior to its adoption into a household with other cats.



Because the number of cats exposed to and therefore carrying antibodies to feline coronavirus is high (estimated to be up to 50% of the general population, and up to 90% of cats in catteries), but the percentage of cats that actually develop FIP is very small (about 5–10% of infected cats), routine blood testing for feline coronavirus is probably not clinically useful. Therefore testing is generally restricted to those cats in which a diagnosis of FIP is strongly suspected due to other clinical information and supportive laboratory data. Occasionally catteries or multi-cat households wishing to maintain a feline coronavirus free status may routinely test for feline coronavirus.

What tests are used to detect feline leukemia viral infections?

FeLV screening tests look for the presence of viral antigen (viral protein) in a blood sample. Your veterinarian can perform a screening test for FeLV in the clinic setting using a special test kit. The test kit changes color if the FeLV antigen is present in the blood sample.

A positive screening test result is indicative of viremia, or the presence of virus. However, as a percentage of cats are able to eliminate the virus from their systems, this viremia may not be permanent. Because no test is reliable all of the time, and because of the possibility of transient viremia, it is important to confirm a positive test result, especially in a clinically healthy animal. Such confirmatory testing is usually done at a veterinary referral laboratory.

A positive test result indicates the presence of the virus and indicates that the cat is not likely to eliminate the FeLV virus from his body.

Newer DNA (PCR) diagnostic tests that detect viral genetic material have also been developed to confirm FeLV infections. These PCR based tests do not appear to have much advantage over the screening tests when used to evaluate blood samples for the presence of virus.

What tests are used to detect feline immunodeficiency virus infections?

FIV screening tests look for the presence of an immune response (antibodies) against the virus in a blood sample. Screening tests for FIV can be done in the clinic setting using test kits. Just like for FeLV screening, these kits change color when FIV antibody is present in the blood sample.

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There is a good link between a positive test result and FIV infection. Nevertheless, it is important to confirm a positive screening test result, especially in a clinically well animal, as no test is entirely accurate all of the time.

It is important to know that the presence of maternally derived antibodies in kittens less than 6 months of age may result in a **false positive** test result. In such a situation, these kittens should be retested after 6 months of age or after 60 days when the antibodies from their mother have gone.

In addition, since this test specifically looks for the presence of antibody to FIV, which takes time for the cat's immune system to produce, a single FIV test may produce a **false negative** result if the patient has very recently picked up the viral disease. Therefore, retesting in two months may be indicated if there is any history of potential recent exposure to the virus such as recent fight wounds, or exposure to a stray cat.

For FIV, confirmatory testing is done at an outside laboratory using one of two different test methods.

"It is very important to realize that cats infected with either FeLV or FIV may live for many years."

It is very important to realize that cats infected with either FeLV or FIV may live for many years. Depending upon the initial reason for testing, a confirmed positive test result should be considered only an indication of viral infection and not necessarily disease.

What tests are used to detect FIP viral infections?

FIP testing is somewhat more problematic. FIP is due to a mutated strain of feline coronavirus, but exposure to any strain of feline coronavirus will result in the production of an immune response (antibodies). There is no blood test that will distinguish between antibodies produced against a non-FIP strain of coronavirus and a FIP-causing strain of coronavirus. To complicate diagnosis even further, a negative blood test result for coronavirus antibodies does not mean that the cat could not have FIP, as detectable antibody concentrations may be reduced in animals with the terminal form of the disease.

"A negative blood test result for coronavirus antibodies does not mean that the cat could not have FIP"

Even newer DNA tests that have been designed to detect viral genetic material are unable to distinguish accurately between the different strains of coronavirus.

While the combined information obtained from clinical signs, laboratory tests, and characteristic features of any fluid present in the abdominal or chest cavities may be supportive of FIP, the definitive diagnosis of FIP continues to rely upon microscopic examination of affected tissue or post-mortem findings.

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