EUROPEAN ADVISORY BOARD ON CAT DISEASES

ABCD

ABCD FeLV diagnostic tool

ABCD TOOL

Possible outcomes

after exposure to the feline leukaemia virus (FeLV):

	Progressive infection	Regressive infection	Abortive infection	No infection
What's going on?	**Persistent viraemia** (poor immune response)	**Transient viraemia** (good immune response)	**Virus eliminated** (strong immune response)	**No FeLV infection**
Free (soluble) FeLV antigen by p27 ELISA or other immunomigration	+ *~ 6 weeks after infection*	– *	–	–
Intracellular FeLV antigen IFA on blood smear	+ *~ 3 weeks after soluble FeLV antigen testing positive*	– *	–	–
Proviral DNA (Quantitative) PCR on whole blood	+++	+++/+ **	–	–
FeLV antibodies Different tests	– / ±	+++	+/++	–
Replicating virus Viral culture of blood	+	– *	–	–
Viral RNA RT-PCR of blood/saliva	+	– *	–	–
Viral shedding	+++	– *	–	–
Consequences	FeLV-associated disease **common**, **poor prognosis.**	**Latent infection** ('carriers') FeLV-associated disease **uncommon**. Possible **reactivation** in case of immunosuppression; potential source of infection.	**No** FeLV-associated disease.	No infection. FeLV vaccination useful.

** Positive during initial transient viraemia*
*** Initially +++, subsequently +*

Notes on tests

1. Only viraemic (antigen-positive) cats shed FeLV.
2. Cats with either regressive or abortive FeLV infection will test negative for FeLV p27 antigen.
3. Vaccination and maternal antibodies do not interfere with FeLV p27 antigen testing.
4. A positive FeLV p27 antigen result indicates antigenaemia; in general, antigenaemia equates with viraemia. Cats will test positive from a few weeks after infection.
5. In geographical areas with low prevalence of FeLV infection, the potential for false positive results must be considered: at low prevalence, the (inevitable) small number of false positives can exceed the number of true positives. Positive antigen test results in low prevalence areas should therefore be confirmed by provirus quantitative PCR.
6. PCR tests that detect genome-integrated FeLV provirus reveal a higher percentage of FeLV-infected cats compared to tests routinely used to detect FeLV p27 antigen.
7. Regressive and progressive infections can be distinguished by repeated testing for viral antigen in peripheral blood.
8. Regressively infected cats usually test FeLV antigen-negative by 12 weeks after infection (longer in exceptional cases), while progressively infected cats remain FeLV antigen-positive.
9. PCR tests detecting genome-integrated FeLV provirus are recommended on whole blood for doubtful and positive p27 serum test results. True positive p27 samples will test highly positive on FeLV provirus PCR.
10. Initially, both regressive and progressive infections are accompanied by high levels of FeLV provirus in the blood. Subsequently, regressive infections are associated with low provirus loads, progressively infected cats maintain high provirus loads.
11. Detection of FeLV RNA in blood samples by RT-PCR is rarely used; it is recommended if a very early phase of infection is suspected, as viral RNA can be detected in the blood 1 week after exposure.

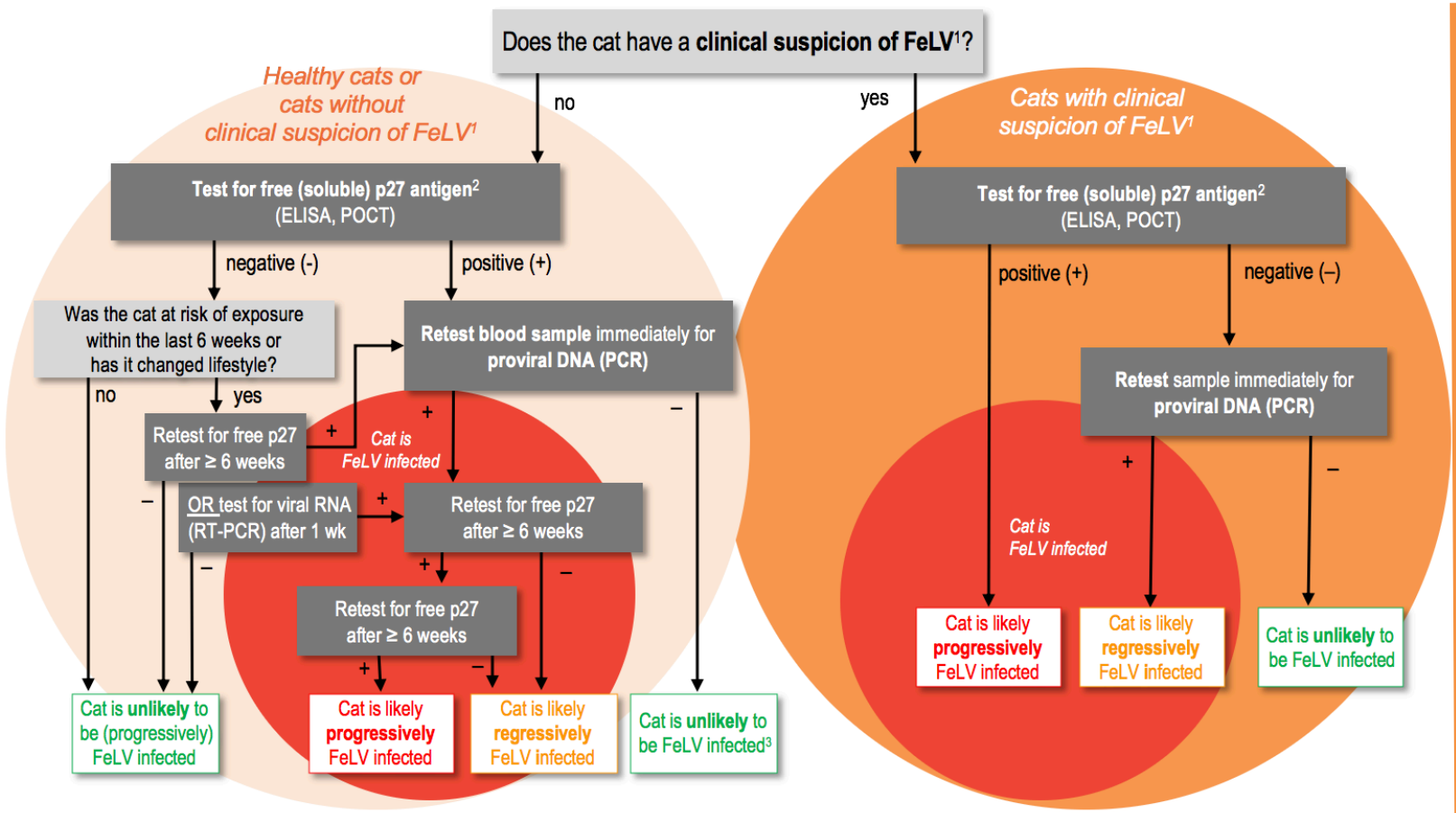
If you found this ABCD information valuable, please tell a colleague. To download the ABCD fact sheets, or the full disease guidelines, please visit our website: www.abcdcatsvets.org
The ABCD is an independent panel of experts in feline health supported by supported by Boehringer Ingelheim (the founding sponsor of the ABCD) and Virbac. September 2020.

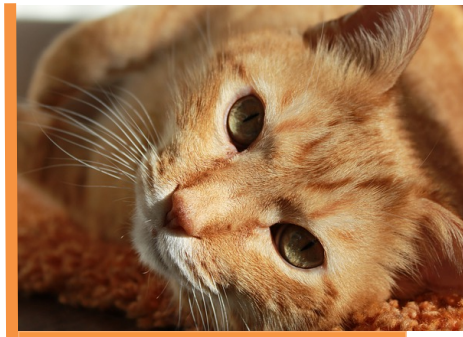
EUROPEAN ADVISORY BOARD ON CAT DISEASES

ABCD

ABCD FeLV diagnostic tool

ABCD TOOL





Risk factors and clinical problems that can be associated with FeLV infection
Mixed breed, free-ranging or feral cat, cat from household with FeLV-positive cat(s)
Cats from an area with high FeLV-prevalence
Presence of neoplasia (lymphoma, leukaemia, other neoplasia)
Bone marrow suppression (non-regenerative anaemia, thrombocytopenia, neutropenia, pancytopenia)
Chronic or recurrent infections suggesting immunosuppression
Chronic gingivostomatitis
Immune-mediated haemolytic anaemia
Neurological signs (peripheral >> CNS)
Reproductive disorders
Fading kitten syndrome
Rarely, other disorders such as immune-mediated uveitis or erosive polyarthritis

When to test?

- FeLV testing is not recommended in cats that have never been exposed to FeLV with certainty.
- It is recommended in all other situations.
- Screening for FeLV is particularly recommended:
  - *At the time cats are first acquired*
  - *Prior to initial vaccination against FeLV*
  - *If there is concern that a naïve cat has been exposed to infected cats*
  - *If clinical signs are present*

Notes on testing

1. For risk factors or clinical disorders associated with FeLV, see table above.
2. Whenever testing for free FeLV p27 antigen of blood samples is suggested (ELISA, POCT) in any of the boxes in the figure, alternatively testing for viral RNA of saliva samples (RT-PCR) can be used.
3. In very rare cases, a focal FeLV infection can be the reason for such a result: positive in free p27 antigen and negative in provirus-PCR, both from blood samples.

POCT = point-of-care test