

# Feline Immunodeficiency Virus (FIV)



**A Cats Protection Guide**

**Feline immunodeficiency virus (FIV) is a virus infection of cats which can cause severe disease leading to death in some infected cats. It is a similar virus to human immunodeficiency virus (HIV) which is the cause of AIDS in people although FIV does not infect humans and in reverse HIV does not infect cats.**

**A**lthough FIV was first recognised in 1986 there is evidence that infection has been around in cats for much longer. Different types of the virus exist and there are geographical differences in the types found, with some types only isolated from particular countries or areas.

FIV is characterised by a long incubation period so cats which are infected can remain healthy for long periods of time before clinical disease is seen. It is still debated whether all FIV-infected cats go on to develop disease or not. Cats may well die from other causes before their FIV infection creates problems. Therefore, not all cats which are diagnosed as FIV-positive should necessarily be euthanased straight away.



## Transmission and spread

FIV is a very delicate virus and therefore cannot survive for long periods outside the cat. For transmission to occur there must therefore be close contact between cats. Only domestic cats and larger wild cats are infected and there is no risk to people from this virus.

The main route of transmission of FIV is thought to be by fighting and biting. This would explain why infection is more likely in entire male cats that are more prone to fighting, and in stray and feral cats. Middle-aged and older cats are more commonly infected than younger cats.

### *Mothers and kittens*

Infection from a mother to her kittens can occur but not all kittens born to FIV-positive cats will be infected; in fact the majority are uninfected.

Transmission from the mother may occur through the placenta while she is pregnant, during the birth process, in the milk or, very rarely, in grooming in the first few weeks of the kitten's life. There is some evidence that cats are more likely to pass on infection to their kittens if they themselves have become infected recently.

## Signs and symptoms

Clinical signs are very varied. The majority of cats will have a long incubation period (the time following infection prior to the development of disease). Therefore, many cats that are FIV-positive may be clinically healthy. When disease does develop it is largely due to the immunosuppression caused by depletion of certain immune cells within the cat's immune system. Because of this immune deficiency the cat cannot fight off normal infections and may also develop infectious diseases which


The clinical signs which occur most frequently in cats with FIV-associated disease are:

- Weight loss
- Fever
- Chronic diarrhoea
- Chronic skin disease
- Chronic respiratory disease
- Disease of the mouth
- Eye disease
- Abscesses
- Chronic renal disease
- Neurological disease

may be with pathogens that would not normally cause disease. Some direct effects of the virus can also occur and it is replication of the virus within the cells of the nervous system which is thought to account for some of the neurological signs seen.



Minimal risk: Not all kittens born to FIV-positive cats will be infected



Mother's milk: Maternally derived antibodies are passed to the kittens in the colostrum

## Diagnosis

It is possible to diagnose that a cat is infected with FIV by testing the blood for antibodies against the virus. This can be done routinely in the majority of veterinary practices.

Care should be taken in interpreting positive results in young kittens as they may still have some maternally derived antibody which interferes with the test (maternally derived antibodies are passed to the kittens from the queen in the colostrum). For this reason blood tests for antibodies against the virus that are positive in kittens are not reliable until six months of age although negative results are accurate from an earlier age. Kittens that test positive on a screening test for antibodies should have a sample sent to a laboratory to test for the virus.

The screening tests used in veterinary practices are not 100 per cent reliable and where positive results are obtained these should be confirmed by another laboratory test, especially where the result is unexpected.

## Treatment

Once the virus has infected the cat his immune system produces antibodies to try and get rid of infection. Unfortunately, these antibodies are not able to get rid of the virus and, once infected, the cat will remain persistently infected for the rest of his life. As yet, no antiviral drugs have been found for use in cats which are able to eliminate the virus and get rid of infection.

Because an FIV-infected cat may be more susceptible to disease, he may require more frequent veterinary care.

### *Drug therapy*

Some of the antivirals which are used to treat HIV infection in man have been tried in the cat with variable success. In man, these drugs are used to reduce the viral load and are not able to actually get rid of the virus. They also have potential side effects. Many of these drugs are potentially toxic to the cat and can cause severe clinical signs. It is possible that in the future drugs may become available which prove to be more useful in cats.

## Managing the disease

### *Rescue shelters*

Because the virus does not survive well in the environment and requires relatively close contact to spread between cats, there isn't a huge risk of the virus spreading within a rescue cattery situation providing the cats are housed separately.

A high number of cats coming into rescue shelters may be at risk of being positive, so it may be helpful for all cats to be FIV tested in order to limit the spread of the disease and to ensure new owners are aware of their cat's viral status.

### *Boarding catteries*

In a boarding cattery FIV-positive cats are not a high risk for spreading virus to other cats. However, their immune systems may not be functioning 100 per cent and so they may be at risk of developing other infectious diseases, eg cat 'flu. If accommodation is available separately for these cats then this may reduce their risk of other infections and becoming ill whilst in the boarding cattery.

### *Rehoming the FIV-positive cat*

As the incubation period with this disease can last for many years there are clinically healthy cats which are FIV-positive and these cats may remain apparently healthy for years to come. Therefore, in a rescue situation, there is the potential to rehome cats which have been identified as FIV-positive. These positive cats will be a source of infection to other susceptible cats and should only be rehomed to a single cat household or a household where the other cats are also FIV-positive. As most transmission occurs by fighting and biting then these cats should not be

allowed access outside otherwise they may spread the infection to other cats. The infected cats may at some point develop a weakened immune response and so it is important to try and protect them from these infections. Whilst this will not be possible for all infections it may be possible to limit their access to areas where infections will be highly prevalent.

### *Protection*

Vaccinations against other diseases can be given and it has been suggested that killed rather than live vaccines may be safer to use.



Limiting the spread: FIV testing is recommended for cats coming into shelters

## *Informing new owners*

It is essential that the new owners are aware of the virus status of the cat and that they have been fully informed of the special requirements for him. They must also be aware that unfortunately there is no guarantee that he will remain healthy for years and that clinical disease could appear at any time which may require the cat to be euthanased on humane grounds.

## **Prevention**

Prevention of the disease can now be attempted in cats by using vaccination. At the time of writing, this is not currently available in the UK but is commercially available in the United States. The vaccine is a killed vaccine and it appears to give reasonable protection against infection although it is of no benefit to use this vaccine in cats which are already infected.

Vaccination in human HIV infection has proved difficult as the virus is constantly able to evolve and the same may occur with FIV vaccines whereby a vaccine that is effective at the moment may become ineffective over time. One potential problem with vaccination is that currently, the screening test used to diagnose FIV, detects antibodies which will also be produced by vaccination. So, it will not be possible with the currently available tests to differentiate between a cat which is infected and one which has been vaccinated.

*With thanks to Susan Dawson BVMS PhD MRCVS, for writing this leaflet.*



All photos: CP Library