

Feline parvovirus – FPV



Information and advice

What is feline parvovirus (FPV)?

Also known as feline infectious enteritis (FIE) or feline panleukopenia, feline parvovirus (FPV) is a small, hardy virus. FPV was thought to be almost eliminated from the cat population because of vaccination. However, it is still causing problems for some cat rescuers, pet shops and cat breeders.

Can dogs or people catch FPV from infected cats?

No. FPV does not infect dogs or humans, although it can infect other large cats and mink.

Can cats catch canine parvovirus?

Recently it has been shown that occasionally canine parvovirus can infect cats.

How are cats infected with FPV?

FPV is a very tough virus. It survives for up to a year in the environment and requires special disinfectants, like *Domestos* or *Parvocide*, to kill it. Most cats contract FPV from a contaminated environment, rather than from infected cats.

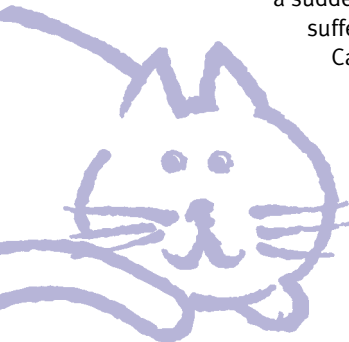
Which cats are vulnerable to FPV?

Kittens are most susceptible, especially when the protective antibodies they receive in their mother's milk have waned. This is usually between four to 12 weeks old but in exceptional cases it can be as late as 20 weeks. Unvaccinated adult cats are also susceptible and allowing booster vaccinations to lapse may be risky.

What clinical signs does FPV cause?

Many cats infected with FPV show no clinical signs but some FPV affected cats or kittens become acutely ill. They may vomit, bringing up froth or they may just look wet around the lips. Despite the name 'infectious enteritis' the cats usually do not have diarrhoea. Temperature is variable. It may be raised in the early stages, but often by the time the cat is taken to see a vet it can be subnormal. Affected cats often appear hungry or thirsty, sitting hunched over a water or food bowl but unable to drink or eat. Sometimes they present as a sudden death, indeed cats which 'go off to die somewhere' may be suffering from this condition.

Cat rescuers and breeders who have a problem with 'fading kittens' should check whether or not they have this virus in their premises (see section on how FPV is diagnosed). If a pregnant queen is infected with FPV, the brains of her unborn kittens may be affected. This can cause damage to the kittens' balance. From about two weeks of age, when kittens first become really mobile, they can be seen to have a wobbly gait. At weaning they have difficulty feeding because their heads bob up and down.



How is FPV diagnosed?

From a living cat or kitten a sample of faeces and a sample of blood should be sent to a reputable laboratory where they are tested for virus and antibodies respectively. From a dead cat or a faded kitten, your veterinary surgeon should send three samples of the intestines, preserved in formalin and sent in a clean receptacle.

If you want to know if FPV is present in your premises but none of your cats are presently sick, test them for antibodies against FPV. The levels of antibodies (ie their antibody titres) are much higher than they would be from just having been vaccinated, so testing healthy in-contact cats can reveal the presence of FPV in the environment.

How is FPV disease treated?

If sick cats are detected in time, they can be treated symptomatically by good nursing and drip feeding. Many cats do recover if treatment is instigated early enough.

How do you prevent FPV infection?

The main method is by vaccination. Kittens are normally vaccinated at nine and 12 weeks of age, although any age of cat can be vaccinated and older cats may respond to a single dose of vaccine. It is usual to give boosters every year with cat 'flu vaccines; 'flu vaccines need to be boosted yearly, but FPV boosters can often be given only every other year.

Photo: North Shore Animal League, New York



Nursing the sick: A kitten suffering from FPV being treated by intravenous drip



Are there any side effects of the vaccine?

Two kinds of FPV vaccine are available; 'live' vaccines, in which the virus can still grow in the vaccinated cat, so producing a better immune response, without producing disease, and 'inactivated' or 'killed' vaccines that do not grow in the vaccinated cat, but can be used safely in pregnant queens. Live FPV vaccines are not recommended in pregnant queens because there is a tiny risk that they can produce the brain damage in unborn kittens as described earlier. Other than that, both types of vaccine have been widely used for many years without any side effects.

What should a CP worker do after FPV diagnosis?

The cat accommodation will be full of virus and very infectious for around a year following FPV diagnosis. There are three possible options. Firstly, stop fostering for a year. Secondly, only foster those cats that have already been fully vaccinated against FPV, and so are immune. Thirdly, if kittens must be fostered, greatly reduce contamination of the environment by disinfection with a veterinary disinfectant such as *Parvocide*.

Since parvovirus is excreted in the faeces, the litter trays in particular should be disinfected. Remember that disinfectants only work when thorough cleaning has already been done. Reduce the number of foster kittens and do not allow them into the room(s) that the diseased cat or kitten has occupied.

Should a cat breeder stop breeding after FPV diagnosis?

There are a number of options open after FPV diagnosis. Firstly, no susceptible animals should be introduced to the contaminated environment for at least a year, so that all newcomers should have had a full vaccination course before entering the premises.

Secondly, kittens receive antibodies from their mother's milk which protects them for a few weeks (the exact time depends on how well the kittens suckle and how high the mother's antibody titre was when she gave birth: the higher the titre, the longer the kittens are protected). Therefore, an option for breeders is to sell their kittens at five to six weeks old, before they lose these antibodies, known as maternal antibodies, and become susceptible to infection. This option of course depends on all of the kittens suckling adequately to obtain the antibodies.

Vaccinating kittens from an earlier age, say six weeks, usually doesn't work because the maternal antibodies may interfere with the vaccine, so that the kitten is not protected. If the breeder wants to keep a good kitten, perhaps it could be fostered at a friend's house from five weeks of age, vaccinated when old enough and then brought back.

Thirdly, the best thing a breeder can do to eliminate FPV is to cut down considerably the number of litters during the year following



FPV diagnosis. Every new kitten that gets infected, even if it doesn't become ill, adds to the virus dose in the environment. Reducing the number or even discontinuing breeding for a year would allow the virus to die out completely from your premises.

Some breeders have special premises built for rearing their kittens. They may think that by thoroughly cleaning and disinfecting these areas with a very powerful disinfectant like *Parvocide* they can rear kittens safely. However, they must remember that the virus is present everywhere on their premises and can be transmitted from one place to another on their shoes and clothing.

Should you revaccinate the adult cats after a parvovirus outbreak?

Probably not. Most already have protective high antibody titres, although booster vaccination status should be maintained.

But – the kitten that died had a high antibody titre but it wasn't protected!

The reason that high antibody titres are sometimes found in diseased cats is that they have started to make their immune response to FPV just too late. By the time the antibodies arrive, the virus has already destroyed the gut and the cat is already dying.

Do FPV carrier cats exist?

No, the virus passes very quickly through the cat, most cats only shed FPV for a couple of days.

Our thanks to Diane Addie PhD BVMS ALCM MRCVS, a member of the Council of Cats Protection, for writing this leaflet and to Dr Hal Thompson for his advice.



