

Health and welfare information about your cat from Vetlexicon Felis.



Feline Infectious Anemia (FIA)

Feline infectious anemia, also known as FIA, is an anemia in cats caused by a blood-borne bacterial infection. If your cat is unwell and pale, it may be that it is anemic, but there are many different causes of anemia in cats and FIA is just one of these. Early recognition and treatment of FIA is important to maximize the chances of full recovery.

What causes infectious anemia?

There are a number of infectious diseases (eg *Babesia felis* in South Africa, feline leukemia virus) that can result in anemia in the cat, but FIA typically refers to anemia caused by the parasites called hemoplasmas. Hemoplasmas are bacteria that live on the surface of red blood cells. Hemoplasmas reduce the lifespan of parasitized red blood cells by damaging the red blood cell surface either causing cell rupture, or marking them for early destruction. As numbers of circulating red blood cells drop, anemia develops.

Several different species of hemoplasma infect cats: *Mycoplasma haemofelis* is most frequently associated with severe, life-threatening anemia; *Candidatus Mycoplasma haemominutum*, the most common feline hemoplasma, rarely causes clinical anemia in the

absence of other diseases; *Candidatus Mycoplasma turicensis* can cause anemia in some cats. All hemoplasmas can cause persistent infection.

How is disease spread?

Being male with outdoor access and having a history of cat fight injuries are risk factors for hemoplasma infection; however, the common routes by which hemoplasmas are naturally spread between cats have not been determined. Fleas are suspected to play a role, at least in some cases, but experimental studies have not provided strong support that this is a common route. Ticks are thought to provide a common route of hemoplasmas transmission in dogs, and feline hemoplasmas have been detected in ticks; however, experimental studies into the role of ticks in the transmission of hemoplasmas in cats have not been performed.

Cat bites injuries may transmit infection, since hemoplasmas are found in the saliva, but transmission this way isn't always thought to be very effective. Vertical transmission from infected queen to her kittens is also suspected to occur. Transfusion of infected blood can also spread infection.

Cats may be at increased risk of getting anemia due to hemoplasma infection if their immune response is impaired. This can occur in cats that are ill with other diseases including infections (eg with viruses like FeLV and FIV) and cancer (either due to the cancer or the drugs used to treat it).

How would I know if my cat has infectious anemia?

Cats are very good at hiding signs of illness, so it is possible that you won't recognize signs of anemia in your cat until the anemia is very severe. Cats with anemia are generally depressed, lethargic and their appetite may be reduced – but these signs are frequently seen in sick cats that are not anemic. Their gums and ocular conjunctiva may appear paler than normal, or sometimes these membranes and the eyes take on a yellowish tinge due to jaundice (as a result of excessive red cell breakdown). Severely affected cats may have breathing problems and become breathless after minimal exercise. Cats with infectious anemia often have a high temperature (fever), and they can become very dehydrated as they stop eating and drinking.

The absence of anemia does not rule out infection with hemoplasmas as many cats can be infected with them without being anemic.

How would my veterinarian know that my cat has infectious anemia?

Your veterinarian may become suspicious that your cat is anemic from their examination. It will be necessary to take blood samples to confirm the presence and assess the severity of the anemia. If anemia is confirmed then further tests, such as X-rays and ultrasound, may be required to look for other possible causes. Further samples of blood may need to be sent away to get final confirmation of the presence of hemoplasmas in the blood. Because of the association between FIA and other diseases such as cancer and FeLV/FIV your veterinarian may want to do other tests to find out if any of these conditions is present in your cat.

How can infectious anemia be treated?

If your cat is very severely anemic, they may need to be hospitalized for emergency treatment such as a blood transfusion, intravenous fluids and/or nutritional support. Cats may be started on specific treatment for hemoplasmas whilst waiting for results to come back. Hemoplasmas can only be killed by specific types of antibiotics. Cats with FIA usually show a rapid response to treatment in terms of improvement in clinical signs (a few days), but clinical cure is often not achieved. Generally, the outlook for your cat is good if they do not have any underlying diseases.

If my cat has been treated will they be immune to disease again?

Unfortunately, infection persists in some cats despite long courses of antibiotics, but they usually don't show any signs of disease; these are called carrier cats. Following treatment your cat may appear to be quite well again but there is always the potential for a stressful trigger to result in the disease returning in carrier cats, although this is probably not that common. Cats that have a history of FIA should not be used as blood donors, even if they appear normal and hemoplasmas can no longer be detected in their blood.

In cats infected with *Mycoplasma haemofelis*, the hemoplasma that usually causes the most severe form of FIA, a longer course of treatment can be considered to maximize the chance of cure. However, this involves up to 8 weeks of combination antibiotics and blood monitoring. It is unclear whether it is necessary to completely clear infection.

It is important to control fleas (and ideally ticks) in all cats, as fleas are suspected to be involved in transmission. Neutering cats and limiting their outdoor access will also reduce their risk of becoming infected.