

# **FELINE HERPESVIRUS INFECTION**

One of the more common ophthalmic problems seen in cats is herpesvirus infection. This virus causes conjunctivitis (inflammation of the pink tissue that surrounds the eye) and/or corneal ulcers. Occasionally sneezing and mouth ulcers are also seen. **This virus is contagious between cats.**

## **WHAT DOES A VIRUS DO?**

A virus is not alive in the sense that people, animals, and even bacteria are alive. A virus is a capsule that contains only protein or nucleic acids known as DNA. This DNA is the building block that makes all of us who and what we are. As it is not alive, a virus particle cannot reproduce without a living cell to attach itself to. Once attached to a susceptible cell, the viral DNA (vDNA) is injected into the cell. The vDNA then invades the cell's nucleus (the "control centre") and inserts itself into the cell's DNA. This causes the cell to start manufacturing new virus particles. To do this, the cell takes nucleic acids and proteins from the area surrounding itself and uses them to form new vDNA. This concept is important in how we treat viral infections.

## **WHAT IS HERPESVIRUS?**

Feline herpesvirus is specific to cats. There are also dog, people, cow, chicken, and horse herpesvirus. In fact, most animals have their own type of herpesvirus. These viruses will not infect other species, i.e., when a cat has herpesvirus, the owner has nothing to fear as far as getting the disease. The virus is a common respiratory pathogen (infectious agent) that causes an upper respiratory disease in most cats. The virus is everywhere and it infects most cats in almost every cattery in the country. As a respiratory disease, the virus is acquired through the air (i.e. one cat sneezes around another cat). In the environment, it is killed by drying and sunlight but can live for many hours in a moist, cool environment. The problems associated with herpesvirus depend on the age the cat was when the virus was acquired:

- Neonatal conjunctivitis occurs in kittens who have not yet opened their eyes.
- In young cats (6 months to 4 years) conjunctivitis and possible corneal ulcers (erosions) may occur.
- In older patients, conjunctivitis is often seen.

Sneezing may or may not be seen in any of these cats. Most often, the cat has a long standing history of conjunctivitis and/or corneal ulcers that will not heal. Perhaps only 15-20% of cats with these infections have relapses, yet this possibility must be kept in mind. Stress is the biggest cause of relapse, triggered usually by changes in the cat's daily routine (i.e. strangers/new animals in the house, boarding while the owner is away, etc.)

## **HOW IS HERPESVIRUS DIAGNOSED?**

Herpesvirus infection is suspected anytime a cat has an eye problem that does not respond to antibiotics (which have no effect on viruses). To diagnose herpesvirus, a blood sample is drawn and cells are collected from the conjunctiva with a swab. These samples are submitted to a laboratory for a specific test procedure known as a Polymerase

Chain Reaction (PCR) test. This test is quite specific when compared to other tests.

### **WHAT IS THE TREATMENT FOR HERPESVIRUS?**

With a bacterial infection, antibiotics are used because they can kill the organisms since bacteria are living cells that reproduce on their own. Viruses, as mentioned before, are dormant until they invade and take over another cell. Antibiotics do not kill body cells and that is why they are useless in the treatment of viral infections. Since the body's cells must bring in nucleic acids and protein building blocks from the local cellular environment to make new viruses, the only way to kill susceptible viruses is to put abnormal proteins into the environment in the form of medicated eye drops. When the infected cell draws these proteins in to make new viruses, the process is stopped. Because we do not know how long it takes to kill all the virus particles this way, treatment must be continued for 4-6 weeks or longer. Occasionally, herpesvirus become resistant to these medications and use of a different medication is required. Another point to keep in mind is that any type of protein has the ability to cause an allergic reaction. If you notice that the eye and eyelid are becoming red, call us. Because of these two concerns, re-examinations are very important. In addition to the antiviral protein, the eye drops also contain Interferon. Interferon is a natural chemical produced by the body to fight off viruses. Applying it to the eyes induces the body to produce more of their own interferon.

Although herpesvirus infections are treatable (**not curable**), they can be quite frustrating because not all cats respond to the medications the same way. Sometimes medications need to be changed to provide the best results.