

## Feline Viral Rhinotracheitis

Rhinotracheitis, is the most severe of all upper respiratory viruses. Be aware, however, that infections from different viruses can occur at the same time in the same cat, and to differentiate which virus is causing a problem would be based on the characteristics of the disease symptoms.

Rhinotracheitis is known and referred to by different names and symbols: 1. Rhinotracheitis 2. FHV (Feline Herpes Virus) 3. FHV-1 (Feline Herpes Virus-1) 4. FVR (Feline Viral Rhinotracheitis) 5. FRV (Feline Rhinotracheitis Virus).

FVR is the more severe of the two most common upper respiratory viruses, the other being Calici virus. It affects the nose ("rhino"), eyes, throat area and sinus areas. The "itis" refers to the inflammation/infection that is happening. It is referred to as an "upper" respiratory virus because it affects the area involved with breathing that is before the lungs and trachea. FVR is actually a herpes virus, specifically Herpes Virus 1, and it is specific for cats.

**Active Disease:** The virus attacks and grows in the nose, sinuses, eyes, the membranes surrounding the eyes, throat, tonsils, upper palate of the mouth and trachea. One to three days after a cat becomes infected, there are signs of severe sneezing (very important first symptom). The cat/kitten will become very depressed, run a fever, lose its appetite, and start to form a thick, mucous discharge from the nose and possibly eyes. In some cases, the cat/kitten may drool. The lining around the inside of the eye is noticeably red and swollen. Sometimes ulcers may develop in the mouth, or the cat/kitten may develop pneumonia. These symptoms may go on for seven to 14 days, depending upon the amount of virus with which the cat/kitten was infected. (Note: The more virus that infects, the more severe the sickness produced.) If a pregnant cat becomes infected during pregnancy, the kittens may either be aborted or be born with brain or liver problems that can cause death. Cats will be very depressed with this disease, and if it is the first time they have been exposed to this virus, very ill. Kittens are more affected than adults, and up to 70% can die with severe infection. Severe infection in kittens can also cause lack of balance and seizures before death. Adults will not often die, but require much attention and nursing to make it through the disease. At some point during this infection, bacteria will also infect this same area because of all the damage the virus has caused. (This is referred to as an "opportunistic" infection, as it would not normally occur if the other had not happened first.) These bacteria behave in the same fashion as the virus, and will often permanently remain to flare up time after time for the remainder of the cat's life, usually despite treatment. In the eye the damage can be great, and is a major cause of eye ulcers in cats. There is usually a decrease in tear production for the eyes as a result of this infection as well. How many of the above symptoms a cat gets, and to what degree, is dependent on a number of things, all of which are important.

**Age:** The very young and the very old are the most affected.

**Amount of Virus in Exposure:** The more virus a cat/kitten contacts, the sicker you can expect it to be. This can vary from a few mild symptoms, all of the above, or anywhere in between.

**Presence of Other Disease:** The healthier a cat is, the better the natural immune system will be able to work to fight infection. The virus can make an unhealthy or stressed cat very ill, while it may just depress and cause mild symptoms in a healthy one. FIV/FELV and FIP are examples of disease(s) which can make cats more susceptible to Rhinotracheitis.

**Nutrition:** The better the state of nutrition, the better a cat will be able to fight the disease.

**Stress:** The more stress (physical and emotional) it has, the more susceptible a cat will be. An example of physical stress might be a pregnancy, while emotional stress could be a cat show or a visit to the vet.

**Genetics:** All cats have an inherent immune system. It is difficult to explain how this relates to disease, but it has been proven that certain pedigreed cats are more prone to some diseases than others. The larger the population in a given environment, the more susceptible these cats will be to respiratory disease.

**Latent and "Carrier" Disease:** Eighty percent of all previously infected cats go on to become carriers of the disease. In so doing they become "latent" after recovering from the first infection. Latent is the term used for the presence of a disease organism that is not causing the disease at that particular time in that particular individual. A "carrier" cat is one who has been previously infected (and has gone through the active phase of the disease) and is now recovered. All carrier cats are either active (currently undergoing active virus infection within their bodies) or latent (the virus is present, but not active). Carrier cats in the active phase can become ill again (although not always, and usually not to the same degree as the first time) and can shed (spread virus to the environment and other cats). Cats in the latent phase only have the virus internally, but feel normal and do not shed the virus to other cats and the environment. What triggers a carrier cat to move from the latent to the active phase is STRESS. Any physical or emotional event in a cat's life can be considered stress including cat shows, moving, boarding, pregnancy, birthing, vaccinations, new family member (human or feline!), other diseases, injury, surgery, crowding, etc. An active phase, healthy looking carrier cat can shed as much virus to others and into the environment as a newly infected sick cat! One week is the usual time frame from the triggering event to the production of active, shedding virus and possible illness. It will take another two weeks for the cat to get through this active phase. Sometimes the only sign of an "active" carrier cat with Rhinotracheitis is an eye ulcer, or swollen membranes around the eye, or mild, persistent sneezing.

All cats must come in contact with the virus to become infected. This virus makes its entrance internally through the eyes, nose or mouth. **Direct Contact:** Direct contact is from a sick or active carrier cat directly to another cat. In catteries, multiple cat households and shelters, the chances of this happening are high. Multiple, repeated infections may occur during the outbreak so that each successive infection produces more virus in each individual. Direct contact is by far the most common way for a cat to be infected with Rhinotracheitis.

**Indirect Contact:** When a cat sneezes and distributes virus to litter pans, furnishings, and food/water bowls, the environment in which it lives becomes infected. A cat coming in contact with these objects becomes infected indirectly rather than directly from the cat that put it there. People can also spread this virus from cat to cat on their hands and clothing. Indirect contact can be a source of infection in shelters, catteries or even veterinary clinics. The FVR virus itself does not live longer than 48 hours once it is outside the cat's body, but that is usually long enough to cause infection under some conditions. It is possible, of course, for a cat to get infected both directly and indirectly at the same time. **In utero:** Unborn kittens can be infected by their mother while still in the uterus during pregnancy. Infected kittens become sicker and shed more virus than adult cats. Accordingly, sick kittens are the worst source of infection to other kittens, who in turn will get even sicker and shed more virus than the ones who gave it to them. The younger the kitten (under six weeks of age) the greater the reaction and resulting infection.

Most veterinarians will diagnose FVR based on the clinical symptoms they see. Typical signs of Rhinotracheitis include lots of thick nasal discharge, swollen membranes around the eye, and depression are the most common symptoms.

A cat/kitten sick with Rhinotracheitis primarily requires supportive care for the symptoms the disease produces, as it is a virus infection. Veterinarians will often prescribe antibiotics as well, because they wish to avoid the resulting bacterial infections that happen in conjunction with the damage from the virus infection. Supportive care is dependent upon the symptoms. It typically means such things as keeping the eyes and nose free of mucous, treating any eye ulcers, force feeding of fluids, and a good deal of loving care.

Prevention of Rhinotracheitis consists of two-parts. Both parts of which are equally important. Since vaccines were developed for Rhinotracheitis, the number of cats affected by this condition has dramatically decreased. It is still a disease to be reckoned with, however, because of the ease with which cats can reinfect one another, especially in multiple-cat environments. Proper immunization and management are both needed.

**Immunity/Vaccination:** This is the safest and easiest way to mount an immunity against FVR. It should be done before infection to be most effective. This is also the best way to avoid the possibility of carrier cats. Dependent on the vaccine, timing and formulation of vaccine used, it can reduce or prevent Rhinotracheitis in well managed, sanitary multiple-cat households. There is basically only one strain of Rhinotracheitis (Feline Herpes Virus-1), and immunity to it in the natural way (after infection) does not happen as is generally the case with other diseases. Reinfection can happen again as shortly as six months after an initial infection, in addition to the fact that natural infection creates carrier cats. **Management:** Since cats can sneeze this virus all about them, cleaning and disinfection are

necessary to reduce the load of virus in the environment. Management is needed in multiple cat catteries/shelters to apply principles such as separation of sick cats from healthy ones, kittens in separate age groups until 12-16 weeks of age, and reduction of physical and mental stress.