

Canine Parvovirus

Canine Parvovirus (CPV) is a highly contagious disease and is by far our **most important disease in domesticated dogs in South Africa**, characterized by bloody **diarrhoea, anorexia, vomiting** and dehydration. The disease which can be fatal needs early intervention and very aggressive medical treatment to increase the chances of survival. The incubation period is 4-14 days (depending on the strain involved). Survival in dogs with Parvo that are left untreated is approximately 9 %, while 64-90% of vaccinated animals are discharged from hospital and go back home.

Canine Parvovirus is a **highly contagious** disease which can be spread through contact with contaminated faeces shed by infected dogs, as well as and through infective fomites that can be translocated from a source of infection on objects such as clothing, shoes, crates or equipment to susceptible animals. It is also believed that the disease can also be transmitted via rodents and insects. Thoroughly **clean and disinfect** the quarters of infected animals. Parvo is an extremely hardy virus that resists most household cleaners and survives on the premises for months. The most effective disinfectant that is readily available is household bleach in a 1:30 dilution. The bleach must be left on the contaminated surface for 20 minutes before being rinsed. Isolating young puppies as much as possible from other dogs and from potential sources of infection until they complete their parvo vaccination series is advisable.

The author would like to address **the purpose of vaccination**. All vaccines, whether they are developed for use in humans or animals are designed with two major purposes in mind: the first purpose is to reduce the severity of the clinical signs should the person/animal contract the disease, and secondly, to increase the chances of survival by virtue of the less severe clinical signs. The latter, is further supported by the fact that the most reliable way to test any vaccine, is to challenge the vaccinated animals with a far more potent strain of the virus/bacteria/parasite and measure the severity of the clinical signs as well as the survival rates. In addition, the latter also confirms that vaccines are not designed to prevent an animal/person from contracting a disease, but more importantly, designed to offer resistance to the patient should they get the disease. The main reason why vaccines do not prevent an animal from contracting the disease, is simply because there are a lot of environmental factors beyond the pet owner's control, the vaccine manufacturer's control and the vaccine's control that determine whether an animal will contract the disease or not.

The **most important environmental factor** that determines the chances of your animal contracting Parvo in South Africa is the concept of "high infection pressure". It is currently estimated that >90% of dogs in South Africa are considered either non-vaccinated or inappropriately vaccinated, leaving <10% of animals with some level of protection against the diseases we vaccinate for. Should the challenge be greater than the protection acquired through vaccination, the animal will still contract the disease(s) e.g. outbreak situation, immunosuppression in individual animals, etc. That means that "breakthroughs" will happen from time to time and is considered a fact of life. On the positive side, should a vaccinated animal contract the disease for which it was vaccinated and recover asymptotically is not the same as preventing infection - but we will never know will we?

Vaccination of puppies start between 4-8 weeks of age, depending on your veterinarian's vaccination protocol, determined risk and choice of products. It is important to know that only certain products can be used at certain ages of puppies, so it is important to discuss your concerns with your veterinarian and select the products and vaccine program that will work the best for your puppy and circumstances. In a standard private practice where control of disease in a small population is the objective, the conventional 6, 9 and 12 week core vaccination program should be followed. Furthermore, in only high risk environments and dog breeding colonies, vaccination at 4 weeks of age using specific vaccines designed for that specific purpose may facilitate better control of Parvo. The World Small Animal Veterinary Association Guidelines of 2010 recommend vaccinations with the three-core canine vaccines (Canine Distemper Virus, Canine Parvovirus-2 and Canine Adenovirus-2) should not begin earlier than 6 weeks of age and if the puppies are to remain with the breeder until they are 8 - 10 weeks or older, it is recommended that vaccination begin at 8 - 10 weeks rather than 6 weeks. Revaccination should be 3 - 4 weeks later with a final vaccination given when the pups are 14 - 16

weeks of age. It is vitally important that the interval between these vaccinations not be lengthened beyond 4 weeks at any stage as it may have a significant detrimental effect on the protection of your puppies against the disease in the field. Although these guidelines may adequately control CPV in some geographic pockets they do not always work in high risk environments.

Currently, recommendations are for a booster a year from the initial vaccine series and then revaccination every 1-3 years depending on the level of perceived risk. Given the current situation in South Africa and the high numbers of Parvo cases we are seeing in the field, the author's recommendation is that all adult dogs are **revaccinated on a yearly basis** in order to offer the maximum amount of protection we can to our beloved pets and companions.

Canine Distemper

Canine distemper is a **contagious and serious viral illness** with no known cure. The disease affects dogs, and certain species of wildlife, such as raccoons, wolves, foxes, and skunks. The common house pet, the ferret, is also a carrier of this virus. Canine distemper belongs to the Morbillivirus class of viruses, and is a relative of the measles virus, which affects humans, the Rinderpest virus that affects cattle, and the Phocine virus that causes seal distemper. Young, unvaccinated puppies and non-immunized older dogs tend to be more susceptible to the disease.

The virus, which is **spread through the air and by direct or indirect** (i.e. utensils, bedding) contact with an infected animal, initially attacks a dog's tonsils and lymph nodes and replicates itself there for about one week. It then attacks the respiratory, urogenital, gastrointestinal, and nervous systems. The **major symptoms** include high fever, reddened eyes, and a watery discharge from the nose and eyes. An infected dog will become lethargic and tired, and will usually become anorexic. Persistent coughing, vomiting, and diarrhoea may also occur. In the later stages of the disease, the virus starts attacking the other systems of the dog's body, particularly the nervous system. The brain and spinal cord are affected and the dog may start having fits, seizures, paralysis, and attacks of hysteria.

Unfortunately, there is no cure for canine distemper. **Treatment for the disease, therefore, is heavily focused on alleviating the symptoms.** There are no antiviral drugs that are effective in treating the disease. A dog's chances for surviving canine distemper will depend on the strain of the virus (currently in South Africa, we have identified 12 different strains) and the strength of the dog's immune system. Recovery is entirely possible, although seizures and other fatal disturbances to the CNS may occur two to three months after recovery. Fully recovered dogs do not spread or carry the virus.

The best **prevention** for canine distemper is routine **vaccinations** and immediate isolation of infected animals. Special care must be taken to protect new-born pups from exposure, since they are especially susceptible to the disease.

Rabies

Rabies is one of the oldest recognized diseases of man and animals - everyone knows a bit about it. Rabies is also the most feared of all diseases that humans can catch from animals. The ancients called it hydrophobia because of a mistaken belief that humans suffering from rabies were afraid of water. **The rabies organism** is a bullet-shaped RNA virus of the genus Lyssavirus in the Rhabdoviridae family. Rabies has a mystique that rests upon its finality and the striking psychological disturbances the disease produces. That is why the ancient Greeks named the virus after their goddess of madness, Lyssa. The stereotypic (typical) foaming mad dog is actually not the commonest form of the disease that veterinarians see.

Fifty years ago, people usually contracted rabies from their pet dogs and dogs were the largest reservoir of the disease. That was because back then, pet dogs were more common than pet cats, it was uncommon for either dogs or cats to receive periodic preventive rabies vaccinations and dogs were freer to roam. With today's easy access to effective pet

rabies vaccines and public compliance with vaccination laws, the **epidemiology (dynamics) of the disease has changed**. Now more than 90% of the cases of rabies occur in wildlife – chiefly carnivores and bats. In the developed World, these animals, not dogs, are rabies' new reservoir.

The **rabies virus attacks the brain** causing acute encephalitis (inflammation), which destroys brain cells and ultimately causes death. The early signs of rabies in animals and man are variable and not specific. They can consist of fever, and a general malaise (discomfort, feeling unwell). In humans, a bad headache is often the first sign of the disease. As rabies progresses, neurological (brain-related) signs begin which can include confusion, aimless motion, agitation, blindness, paralysis, salivation, difficulty swallowing and seizures. Patients usually die within the following two weeks.

Rabies is only **transmitted through the saliva** of infected animals. Being licked by a possibly rabid animal is not dangerous unless the lick is across raw, broken skin. Kissing an animal will not put you at risk of rabies.

The traditional method of rabies **diagnosis** requires submitting the suspect animal's brain to a laboratory for microscopic examination.

There is no **treatment** for rabies. Once the disease is in progress death is inevitable. If an unvaccinated dog or cat is bitten by a known rabid animal, public health officials generally recommended that the pet be destroyed immediately.

The only certain way to prevent infection is prior **vaccination** or vaccination subsequent to being bitten. Laws throughout most countries in the world require periodic rabies vaccination of your dog and cat. These vaccines are quite effective and almost never fail. The problem is that only a very small percentage of dogs and cats in South Africa (estimated to be <10%) receive their rabies vaccinations when prescribed. Vaccine manufacturers suggest that cats and dogs receive their first rabies inoculation at twelve weeks of age and then again when they are one year old. From then on, yearly booster vaccinations are strongly recommended in South Africa.

Feline Upper Respiratory Tract Disease (FeURTD)

FeURTD (also referred to as 'cat flu' or 'snuffles') is a **common cat disease that can be life-threatening**. Cats most at risk include unvaccinated cats, kittens, the elderly and cats which are immunosuppressed for any reason. In immunosuppressed cats, damage to the immune system has left them vulnerable to a wide variety of diseases with which they would otherwise be able to cope. Immunosuppression can be seen in cats infected with feline leukaemia virus (FeLV) or feline immunodeficiency virus (FIV), cats with other severe illnesses, or in those receiving treatment with certain medications such as corticosteroids or anti-cancer therapy.

A cat's upper respiratory tract-the nose, throat and sinus area-is susceptible to infections caused by a variety of viruses and bacteria. **Viruses** are the most common causes of upper respiratory infections in cats. Feline calicivirus (FCV) and feline herpesvirus (FHV) account for 80 – 90% of all contagious upper respiratory problems, and are prevalent in shelters, catteries and multi-cat households. These viruses can be transmitted from cat to cat through sneezing, coughing, or while grooming or sharing food and water bowls. Once infected, cats can become carriers for life, and though they may not show clinical signs, they can still transmit the viruses to others. Cats often develop bacterial infections secondary to these common viral infections.

There are also upper respiratory infections in cats that are primarily caused by **bacteria**. Chlamydia and Bordetella - also commonly found in shelters and areas with multiple cats - are two such bacterial infections. Less common in cats than dogs, Bordetella is usually associated with stress and overcrowded living conditions.

Symptoms differ depending on the cause and location of the infection, but some common clinical signs of upper respiratory problems in cats include: sneezing, congestion, runny nose, cough, clear to coloured nasal discharge, gagging,

drooling, fever, loss of or decreased appetite, rapid breathing or open-mouth breathing, nasal and oral ulcers, squinting or rubbing eyes and depression.

Age, vaccination status and physical condition all play a role in a cat's **susceptibility** to upper respiratory infections, but cats that live in multi-cat households or shelters are most susceptible. Veterinarians have found that stress plays a role in causing outbreaks of URTD, and cats in any shelter, cattery or boarding facility are generally experiencing high levels of stress. Cats who have recovered from URTD can become carriers, and may experience recurrences when stressed. Certain breeds like Persians and other flat-faced breeds have a predisposition to develop upper respiratory infections due to their facial structure.

Left untreated, some upper respiratory infections can progress to pneumonia or have other **serious complications**, such as blindness or chronic breathing difficulties.

How Can I **Prevent** My Cat from Getting Upper Respiratory Infections? Keeping your cat indoors can minimize the risk of exposure to infected animals and minimize stress. Properly isolate infected cats to protect other pets living in the same environment. Keep your cat's immune system updated with vaccines as recommended by your vet. Vaccines for upper respiratory disease in cats will not actually prevent infection, but they help lessen the severity of the disease and significantly increase the chances of survival. Practice good hygiene and wash your hands thoroughly when handling multiple cats.