



**VETERINARY SCIENCE
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Canine Distemper

INTRODUCTION

Canine distemper, a severe, highly infectious viral disease of dogs, is worldwide in distribution. The distemper virus occurs most often in dogs 3 to 6 months old, although dogs of all ages can be infected. Foxes, wolves, minks, ferrets, skunks, and raccoons also can be infected and, just as with dogs, should be routinely vaccinated (if possible). This distemper virus does not infect cats. Although the virus is closely related to the human measles virus, it does not infect humans and is not of public health concern.

ETIOLOGY

Canine distemper is considered an airborne disease. Since it can be transmitted among dogs without actual bodily contact, a puppy should never be introduced into a household until at least 30 days after removal of a distemper-infected dog.

The incubation period (i.e., time from viral exposure to the onset of illness) varies from 6 to 9 days.



Your veterinarian will prescribe a vaccination and health program for your puppy.

CLINICAL FINDINGS

Canine distemper begins with an elevated temperature (103°+ F) lasting 1 to 3 days. The fever subsides for several days but is followed by a second elevation which may persist 2 to 4 weeks. At the beginning of the second temperature elevation, the clinical signs of canine distemper begin to appear.

Clinical signs are:

- 1) pustular discharge from both the corners of the eyes and the nose.
- 2) reddened eyes and squinting, to reduce discomfort.
- 3) depression.
- 4) loss of appetite.
- 5) diarrhea.
- 6) low grade cough.
- 7) weight loss.

A dog may seem to recover and then succumb to nervous complications such as convulsive seizures characterized by an inability to stand, twitching of muscles (chorea), jerking movements of the head and jaws (chewing fits), and paddling motions of the legs, and/or encephalitic signs in which the dog wanders aimlessly, unaware of its surroundings. Nervous signs also can appear without the other signs of distemper (diarrhea, coughing, loss of appetite, etc.).

Presence of nervous manifestations in combination with elevated temperature and/or respiratory signs, diarrhea, purulent discharge from eyes and nose, or hardening of the footpads (hard pad disease) is highly suggestive of canine distemper infection.

Whether the dog recovers or dies depends on age and severity of illness. Dogs rarely recover from the nervous form of distemper. Consequently, euthanasia usually is recommended by the veterinarian.

TREATMENT

Once canine distemper is diagnosed by the veterinarian, excellent nursing care is the most important factor in the treatment of the disease. Sick dogs must be placed in a warm, dry room. Other treatments are directed at limiting secondary bacterial invasion (using antibiotics), supporting the fluid balance (with fluid therapy), and controlling nervous manifestations.

IMMUNIZATION

Since treatment of the disease is not always successful, prevention of canine distemper through immunization



becomes very important. Dogs may acquire this protective immunity either through the bitch's colostrum, the first milk secreted by her mammary glands after birth (passive immunity), or via vaccination (active immunity).

Passive Immunity

It is essential that the newborn puppy obtain colostrum milk within 2 hours after birth to acquire passive immunity from distemper. Passive immunity disappears from most pups by 12 weeks of age and is absent at 15 weeks.

Active Immunity (Vaccination)

- 1) Modified Live-Virus Vaccines. Successful immunization of pups with modified live-virus vaccines depends upon the absence of interfering maternal (colostral) antibodies. Since the amount and duration of passive immunity obtained by the pup from the mother is unknown, the pup at least should be vaccinated at 8 weeks of age and again at 3 to 4 months in case colostrum antibodies interfered with the first dose. Better still is the administration of doses of vaccine at 2 week intervals beginning at 8 weeks and terminating at 16 weeks.

Vaccination of bitches prior to mating should ensure subsequent transfer of sufficient antibodies in the colostrum to protect most pups at least until weaning. However, it is suggested that pregnant bitches not be vaccinated due to lack of information regarding possible side effects of the vaccine virus on the fetus.

There is no such thing as a "permanent vaccination," i.e., a one-shot vaccination that will protect a dog throughout his/her life. Since the duration of immunity following vaccination with canine distemper vaccine is variable, annual revaccination is strongly recommended (particularly since canine distemper is such a serious disease with a high mortality rate).

- 2) Measles Virus. A method of circumventing the blocking effect of colostrum antibodies is the use of measles vaccine to protect against canine distemper. Measles vaccine will protect dogs from developing canine distemper, but will not prevent the virus from entering the dog's body and being transmitted to other dogs. Currently, a combination of canine distemper and measles virus is available, and the manufacturers recommend that it be used at 6 weeks of age.

Measles vaccination should be considered a temporary method to prevent canine distemper until canine distemper vaccine can be effectively administered. Canine distemper vaccine should be administered at 12 to 16 weeks of age and annually thereafter. Measles vaccine should *not* be used in dogs over 16 weeks of age or in breeding bitches.

The vaccination and health program for your puppy should be established by your veterinarian, since he/she knows the immunization schedule best-suited to your area.

VACCINATION FAILURES

Although some vaccination failures are due to inadequate vaccination or to colostrum interference, many dogs are infected by exposure to canine distemper after vaccination but before immunity has been established. Since the interval required for vaccination to establish immunity is not known, 10 days should be allowed. To prevent vaccination failure, it is absolutely necessary to keep puppies isolated from exposure to distemper until 10 days after vaccination.

In addition, a puppy may have been exposed to the distemper virus before vaccination. If passive immunity no longer existed, the puppy could show clinical signs of the disease soon after vaccination. A pup possibly exposed to the distemper virus should be vaccinated, since delay will continue to extend the pre-vaccination exposure period and vaccination of an incubating pup does *not* produce harm or enhance the disease.

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