

# PARVOVIRAL ENTERITIS

## About the Diagnosis

**Cause:** Parvoviral enteritis ("parvo") is a potentially severe and occasionally life-threatening intestinal condition of dogs. It is caused by a virus that is spread via fecal-oral transmission. That is, the virus that causes parvo is passed in the feces (stools) of infected dogs. Other dogs can become infected by sniffing, licking, or ingesting the stool or anything that the stool has touched, even in microscopic amounts. This virus is not known to infect people. The virus works by infecting rapidly-dividing cells in the body, including cells in the intestines, lymphatic tissue, and bone marrow. By destroying cells in the intestines, the virus causes nutrients and fluids to not be absorbed into the body. Bacteria and toxins produced by some bacteria can leak across the intestinal wall and into the bloodstream to cause life-threatening problems. The most common symptoms include loss of appetite, vomiting, and bloody, foul-smelling diarrhea. These occur most commonly in young puppies, especially if they have not been adequately vaccinated.

The virus itself is extremely resistant and can remain stable in the environment for years.

Adult dogs often pass parvovirus in the stool without showing symptoms because resistance to symptoms occurs with age. However, in other dogs, especially immune-suppressed dogs and very young puppies (less than 6 months old), the infection can spread quickly through the body causing various degrees of illness. In some animals, the infection is fatal, especially if treatment is delayed.

**Diagnosis:** Parvoviral enteritis is often suspected from a dog's young age, history (lack of vaccination, exposure to other dogs or their stool), symptoms (see above), and physical exam. Puppies, especially unvaccinated puppies, have the highest risk of contracting this disease; however, older, vaccinated dogs can rarely become infected. Breeds that are particularly susceptible to parvoviral enteritis are the black Labrador, rottweiler, and Doberman pinscher.

The symptoms of parvoviral enteritis can mimic other diseases. However, treatment is essential (lifesaving) for parvovirus but may be less critical for other diseases. Therefore, your veterinarian may test for the presence of the virus using a specific fecal sample test to reach a definitive diagnosis of parvoviral enteritis. It is important that the pet's complete medical history is shared with the veterinarian, including dates of prior vaccinations if known, current feeding schedule and diet, duration of symptoms, and so on. A complete blood count (CBC) may be performed to look for blood cell abnormalities; serum biochemistry tests may be run to determine if certain supplements are required; and abdominal x-rays can help to rule out other causes of these particular symptoms.

## Living with the Diagnosis

A dog with parvoviral enteritis needs to be hospitalized and treated. Most dogs with parvoviral enteritis require intensive care, and compromising the degree of care (e.g., treating at home when hospitalized care is necessary) can have negative effects on the dog's health and even on its survival. Despite any owner's best efforts, certain requirements cannot be met at home. The survival rate decreases significantly when a dog with parvovirus that needs intensive care is treated at home instead of at the hospital.

If the choice is made to treat at home, any dog with parvoviral enteritis should be isolated from other dogs in the household, even if they are vaccinated against parvovirus because no vaccine is 100% effective. The infected dog should have a calm, quiet environment. Food and water should be withheld until vomiting and diarrhea have stopped, unless otherwise directed by the veterinarian. If the dog remains lethargic (sluggish), weak, or continues to have a decreased appetite and if vomiting and/or diarrhea continue, veterinary attention should be sought immediately. This disease can be fatal if left untreated or if not treated early enough in the process.

## TREATMENT

There are no medications that kill the virus itself. However, with intensive care, a large majority of dogs with even very severe symptoms of parvoviral enteritis will survive. Dogs that survive generally have no permanent damage or any other long-term negative effects and in fact are almost always immune to parvoviral enteritis for the rest of their lives. Therefore, treatment of parvoviral enteritis when it is causing symptoms is supportive and designed to alleviate those symptoms. Intravenous (IV) fluids are given because vomiting and diarrhea can quickly lead to dehydration and hypovolemic shock. Medications and supplements are given intravenously and not by mouth to avoid triggering nausea. Antibiotics are given to fight bacteria that can become opportunistic invaders. Medication

can be given to control nausea and vomiting. Blood potassium (and other electrolytes) and glucose levels often are critically low and can be supplemented in the IV fluids. A blood or plasma transfusion may be indicated if the dog is anemic or has a low blood protein level, respectively. A medication that controls parasites (anthelmintic) such as intestinal worms in the intestinal tract can help. Food and water are not offered until after vomiting and diarrhea have ceased, and since this usually requires intravenous anti-nausea drugs, a dog that is not in intensive care is at risk for malnutrition during parvoviral enteritis.

Dogs that have severe symptoms and need more complete nutritional support may be fed a specially-formulated diet through the intravenous line. This type of food is called parenteral nutrition and often is only available at specialty referral veterinary hospitals.

When vomiting and diarrhea have not occurred for an amount of time indicated by your veterinarian (usually 12 to 24 hours), a small amount of water and a bland, easily digestible food can be offered. There are several prescription diets available. Your veterinarian can recommend one that is appropriate. The amount of food and water offered is gradually increased until the dog is eating an appropriate amount again.

## DOs

- Have your puppy/adult dog vaccinated; discuss with your veterinarian the best time(s) to have this done and follow the established schedule.
- Inform your veterinarian if your pet has ever been diagnosed with a medical condition or is taking medication; if possible, bring the medicine container to the veterinary clinic.
- Give medication exactly as directed by your veterinarian, and if you are concerned about possible negative effects, discuss them with your veterinarian immediately rather than simply discontinuing the treatment.
- Clean up after your dog on walks.

## DON'Ts

- Do not allow your unvaccinated puppy to contact other unvaccinated dogs or to be exposed to feces in the environment. Your puppy should not be exposed to areas where dogs defecate often (e.g., dog parks, kennels) until all puppy vaccines are complete. This is generally by the age of 16 to 20 weeks.
- Do not assume that your vaccinated dog can never become infected with the parvo virus; although the chances are extremely small, it is still a possibility that could arise if the symptoms described above are present.

## When to Call Your Veterinarian

- If you cannot keep a scheduled appointment.
- If you are unable to give medication as directed.
- If clinical signs do not improve after giving medication and especially if they worsen.
- If you believe that your dog or cat is having a negative reaction to medication (hives, excess drooling, anxiety, vomiting, diarrhea, respiratory difficulty, seizures, etc.).

## Signs to Watch For

- General signs of illness: loss of appetite (anorexia), weakness, lethargy, weight loss, abnormal behavior.
- Signs of gastrointestinal problems: vomiting; bloody, foul-smelling diarrhea; loss of appetite.

## Routine Follow-Up

- Although recovery from parvoviral infection provides immunity for the dog, it is important for your dog to get booster vaccinations regularly, according to your veterinarian's recommendations, for other infectious diseases of dogs.

## Additional Information

- The virus that is passed in the feces (stool) of your dog contains parvovirus for several days prior to the onset of symptoms of parvoviral enteritis, and the virus will typically continue to be passed for about 2 weeks. The virus can live in the environment for months or more. For both these reasons, it is important to appropriately clean any cages, blankets, food and water bowls, and other objects used by the dog. A

dilution of bleach in water (1 part bleach to 29 parts water; handle carefully) is effective and destroys this virus. Sunlight also helps to speed the disinfection process.