

Pneumonia in Dogs

- When the lungs are infected or inflamed, fluid and other material can accumulate, resulting in pneumonia.
- A variety of bacterial, viral, and fungal organisms can cause pneumonia in dogs.
- Pneumonia is treatable in most cases. However, if the dog is very young, very old, or already sick with another condition, the outcome may not be as favorable as if the patient was healthy before pneumonia developed.

What Is Pneumonia?

Most lung tissue is made up of tiny clusters of air “balloons” (called *alveoli*). Each balloon is lined by a thin layer of cells and surrounded by a network of very small blood vessels. When you breathe in, air fills the balloons. The cells in the lining and the small blood vessels exchange oxygen from the air for carbon dioxide, which you then breathe out. The main pathway from the lungs to the outside of the body consists of the trachea (the large airway that begins at the back of the throat and continues down into the lungs) and the nostrils.

When foreign organisms, such as certain bacteria, viruses, and fungal organisms, invade the nostrils or trachea, they sometimes cause infection and inflammation there. If this infection and inflammation continues down the respiratory tract to involve the alveoli, material such as fluid, pus, and cellular debris can accumulate in the lungs. When this occurs, the patient has developed pneumonia.

A variety of bacterial, viral, and fungal organisms can cause pneumonia in dogs. Examples include canine distemper virus, canine influenza virus, *Bordetella bronchiseptica* (the bacteria associated with kennel cough), and the fungus *Cryptococcus*. Sometimes, a virus or fungus can cause such damage to the respiratory tract that a secondary bacterial infection can take hold, so the pneumonia can be caused by more than one organism. The condition can also occur if fluid is present in the lungs, such as after a near-drowning incident or as a result of heart failure.

Pneumonia can also occur if a pet inhales vomit or any type of caustic or irritating substance.

What Are the Clinical Signs of Pneumonia?

Pneumonia can be confined to a small area of the lungs, or it can spread throughout them. Depending on the severity of the pneumonia, clinical signs can be relatively mild or severe and can include the following:

- Coughing
- Difficulty breathing, or rapid breathing
- Discharge from the nostrils
- Lethargy (tiredness)
- Reduced appetite
- Fever

Because a variety of organisms can cause pneumonia, additional clinical signs may be associated with the causative agent. For example, canine distemper virus can cause pneumonia, but additional clinical signs might include vomiting and diarrhea.

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How Is Pneumonia Diagnosed?

Obtaining a medical history and performing a physical examination are the first steps in diagnosing pneumonia. When your veterinarian examines your dog, he or she will listen to your pet’s chest with a stethoscope to determine whether the air sounds in the lungs and airways sound normal. Your veterinarian will also use the stethoscope to check your pet’s heart for murmurs or changes in rhythm and heart rate.

Many veterinarians use results of chest radiographs (x-rays) to help confirm a diagnosis of pneumonia. Once pneumonia is diagnosed, your veterinarian may recommend additional testing to help identify the

Common Conditions

organism responsible and look into possible underlying causes for the illness.

What Are the Treatment and Outcome of Pneumonia?

Treatment for pneumonia can involve several goals:

- **Stabilize the patient:** If the patient is having significant trouble breathing or is otherwise unstable, oxygen therapy and other treatments may be necessary to stabilize the pet.
- **Treat the pneumonia:** Antibiotics are often prescribed to begin treating bacterial infections while additional test results are pending. If a pet is seriously ill from pneumonia, hospitalization may be recommended so that the patient can be supported and monitored as treatment is progressing.

- **Address underlying illnesses:** If specific bacteria, viral, or fungal organisms are identified, additional medications may be prescribed to address the infection. Your veterinarian may also recommend repeating chest x-rays periodically to monitor how well the pneumonia is resolving.

Pneumonia is treatable in most cases. However, the outcome for a dog with pneumonia can depend heavily on the cause of the pneumonia and the overall health status of the pet. If the dog is very young, very old, or already sick with another condition, the prognosis may not be as favorable as if the patient was healthy before pneumonia developed.

Additionally, if the underlying cause of the pneumonia was canine distemper virus or another potentially fatal illness, the patient may recover from pneumonia but die from other complications of the underlying disease.