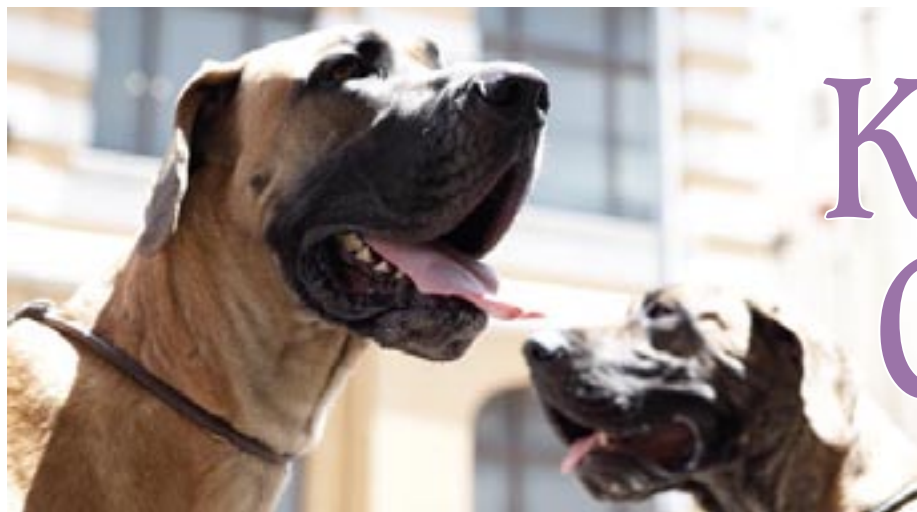


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Kennel Cough

What is Kennel Cough?

Kennel Cough is the colloquial name for Canine Infectious Tracheobronchitis which is an acute or chronic inflammation of the trachea and bronchial airways within the lungs.

Causative Agents

Kennel Cough is actually a syndrome rather than an individual disease. Within the syndrome are a number of different viruses and bacteria, with Canine Infectious Tracheobronchitis often secondary to viral infection of the respiratory system.

Stress and extremes of ventilation, temperature, and humidity can increase susceptibility to, and severity of, the disease. Inflammation of the large airways (bronchitis) may extend to the smaller airways (bronchioles) and into the actual lung tissue to cause a life-threatening pneumonia.

Inflammation of the trachea may be secondary either to diseases of the mouth and pharynx or to chronic coughing related to heart disease, as well as lung disease unrelated to the heart. Other causes include smoke aspiration, exposure to noxious chemical fumes, and lung worms.

Canine parainfluenza virus, canine adenovirus 2 (CAV-2), or canine distemper virus can be the primary or sole pathogen involved. Canine reoviruses (types 1, 2, and 3), canine herpesvirus, and canine adenovirus 1 (CAV-1) are of questionable significance in this syndrome. *Bordetella bronchiseptica* may act as a primary pathogen (in dogs and cats), especially in dogs less than 6 months old; however, it and other bacteria (such as *Pseudomonas* sp, *Escherichia coli*, and *Klebsiella pneumoniae*) may cause secondary infections after viral injury to the respiratory tract. Concurrent infections with several of these agents are common. The role of *Mycoplasma* sp has not been clearly

established.

Symptoms

Spasms of coughing are the outstanding sign, the most severe being after rest, a change of environment or at the beginning of exercise. Temperature may be slightly increased. The initial stage of bronchitis passes in 2 – 3 days, but coughing may persist for 2 – 3 weeks.

Exacerbation of a chronic bronchitis affecting middle-aged and older animals may follow sudden changes in the weather or other environmental stresses. Foreign bodies in the airway and developmental abnormalities such as laryngeal deformities may predispose to bronchitis. Chronic bronchitis most often affects small breeds of dogs, although it is also seen in large breeds.

Diagnosis

Diagnosis is made from the history and clinical signs and by elimination of other causes of coughing. Chest X-rays may be helpful, while bronchoscopy may reveal an inflamed airway lining as well as inflammatory fluids which can be sampled and analysed.

Treatment

Rest, warmth, and proper hygiene are important. Broad-spectrum antibiotics are indicated for the treatment of coughing. Additional diagnostic procedures may be indicated in more complicated cases. Pulmonary physiotherapy has been employed before and may loosen secretions and stimulate expectoration. A bathroom environment with steam from a hot shower may be substituted for nebulisation.

Vaccination

Immunisation of your pet is the best protection and has proven very effective in reducing the severity of clinical signs, as well as in reducing subsequent shedding of the *Parainfluenza* virus for many years. Many

boarding kennels require vaccination against *Bordetella bronchiseptica* for all dogs admitted, and may be recommended for dogs that frequently visit grooming parlours, take part in obedience or puppy socialisation classes or are otherwise at risk for being exposed to canine kennel cough. Kennel cough vaccines are readily available and affordable.

Once we have determined that vaccination is appropriate we need to ensure that the correct product is used – an intranasal vaccine or a parenteral (given subcutaneously) vaccine. Ideally the vaccine should contain the *Parainfluenza* virus and *Bordetella bronchiseptica* fractions and be an intranasal vaccine. Research has repeatedly demonstrated that intranasal vaccines have a faster onset of immunity/protection (within 72 hours), can be used in animals from 3 weeks of age (safe), will not interfere with maternal antibodies and do not require a booster 2 – 4 weeks later (injectable vaccines require that animals return for a booster vaccine after the first inoculation).

The vast majority of animals that have been successfully vaccinated may still become infected; however symptoms will be milder and shorter-lived than for those not vaccinated.

The main reason why animals may still develop clinical signs of respiratory disease is that vaccines protect against the *Parainfluenza* virus and/or the *Bordetella bronchiseptica* bacteria (depending on which vaccine is used) in dogs, and *Bordetella bronchiseptica* only in cats. All the other inciting causes of kennel cough in dogs (and respiratory disease in cats) are not covered by the vaccination. Respiratory disease in cats can also be caused by feline rhinotracheitis virus, calici virus and Chlamydiosis.

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