



## Canine Infectious Respiratory Disease

We have identified the contagious organisms in our current "kennel cough" outbreak. All the dogs we tested have *Mycoplasma* and Parainfluenza virus. The 2 respiratory pathogens work together to cause the disease with the virus attacking first and allowing the *Mycoplasma* to be an opportunistic bacterial infection.

Vaccines cover many but not all of the pathogens that can cause a cough. There is currently no available vaccine for *Mycoplasma*.

Kennel cough is not caused solely by *Bordetella* and we see it in other places besides kennels. A better name for the infections we are seeing is "Canine Infectious Respiratory Disease". Right now we are seeing it in dogs from neighborhoods all over town and dogs that frequent the dog park.

### OUR RECOMMENDATIONS

**We recommend treating all symptomatic dogs with a course of antibiotics** The secondary bacterial infections are a concern. We now carry Minocycline which is similar to Doxycycline and Tetracycline. All of these antibiotics are effective against both *Bordetella* and *Mycoplasma* and also have some anti-inflammatory effects that may be helpful. Treatment will also reduce shedding to other dogs and hopefully help to prevent community spread.

**We recommend 2 week quarantine from the end of clinical signs (coughing) for dogs treated with antibiotics.**

**\*Without antibiotic treatment** dogs will be more susceptible to other bacterial infections and can carry and shed *Mycoplasma* for up to 2-3 months. Without antibiotic treatment these dogs should be kept away from other dogs for 2-3 months or they could still be spreading *Mycoplasma* to other dogs. They may be infecting other dogs even though they are not coughing or showing any clinical signs.

**We may prescribe cough suppressants if the coughing is disrupting sleep or bothersome with activity.** We can prescribe stronger prescription cough medication from PKC or an over the counter cough suppressant like Robitussin can also be used. (Dextromethorphan hydrobromide is a semi-synthetic opium derivative which lacks opium's narcotic properties but decreases coughing. *Dextromethorphan*: 1-2 mg/kg PO q6-8h). Please double check to make sure that the OTC product contains ONLY Dextromethorphan and call us if you have any questions about dosing.

**~We have tested a cross section of infected local dogs and they consistently tested positive for *Mycoplasma cynos* and Parainfluenza. In addition, we tested for the following agents and all dogs were negative. Influenza, Adenovirus type 2, Herpesvirus, Parainfluenza, Swine Flu, Avian Flu, Distemper, *Bordetella bronchiseptica*.~**

For more information visit our website at [www.petkareclinic.com](http://www.petkareclinic.com) and search for "Kennel cough" in our Medical Information Library. (There is a nice video of a coughing dog demonstrating just how harsh and dramatic the cough can be! In fact many people call us because they think their dog is choking on something.)

Past outbreaks of Canine cough in Steamboat have involved Respiratory Coronavirus (CRCoV) which is a relatively new (2003) **Coronavirus** of dogs, which is widespread in North America, Japan, and several European countries.

The respiratory virus is antigenically and genetically distinct from the GI coronavirus, There is currently no vaccine available against CRCoV that could be used prophylactically or to reduce disease.

Corona virus was probably transmitted to dogs from cattle. The rapid spread of disease caused by this pathogen indicates that the **virus is highly contagious**. It is spread by dog to dog contact, coughing or sneezing. It can also be spread on kennel surfaces, bowls, collars, leashes and hands or clothing of people handling infected dogs.

The critical aspect of the pathogenesis of canine respiratory viruses involves the virus invading and damaging the epithelium of the respiratory tract. This damage disrupts the mucociliary escalator, which is an important defence mechanism of the body's nonspecific innate immune system which clears the airways of debris and pathogens. This dysfunction of the mucociliary escalator combined with virus-mediated suppressive effects on phagocytic cells predisposes the dog to secondary bacterial or mycoplasma infection.

It is now thought, however, that it is not only the effect of the pathogen, but more so the host's immune response to the pathogen that causes the inflammation, pathology and clinical signs associated with infection. This helps to explain the prolonged clinical syndromes that persist in canine cough.

Keep in mind that with viral diseases like CIV, by the time clinical signs are obvious, viral shedding is already ceasing. Mycoplasma, however, is the organism that is shed for longer periods of time (up to 2-3 months).

### **Mycoplasma**

Mycoplasmas are intracellular organisms and do not survive long in the environment. They are the smallest simplest self replicating bacteria. Mycoplasma lack a true cell wall, making them capable of assuming a variety of shapes, and capable of spreading into different systems throughout the body, from the respiratory tract, where they can cause pneumonia, to the urinary tract, where they can result in various forms of diseased conditions. They are usually opportunistic organisms able to invade in combination with viruses or in immunosuppressed animals.



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