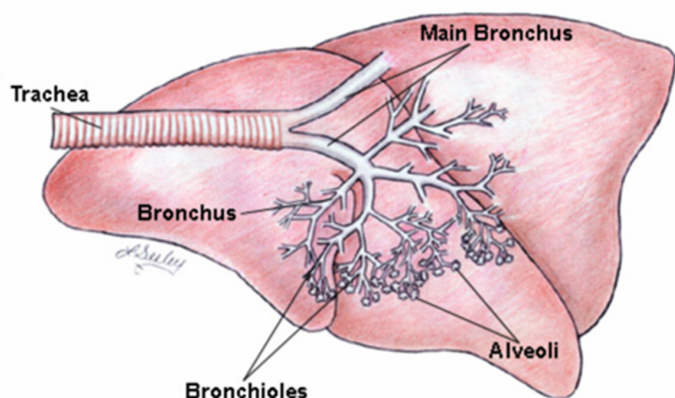


### What is Chronic Bronchitis?

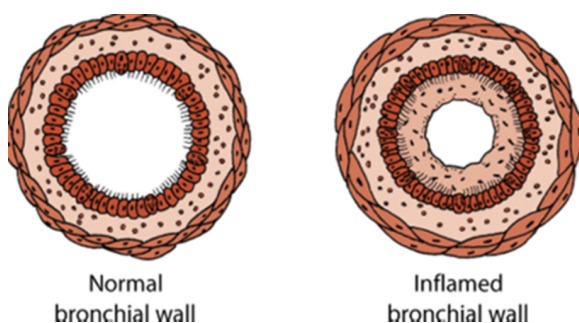
Chronic bronchitis is a disease in dogs that affects the smaller airways that branch out from the trachea (windpipe). These branches, called bronchi and bronchioles, allow the transport of air into and out of the alveoli, the sites of oxygen exchange.

Typically, inflammation within the airways results in excessive secretions that plug the airways. The end result is an impaired ability to bring oxygen into the alveoli for delivery to the rest of the body.

#### Air Passages in the Lungs



Although the term “asthma” is occasionally used to describe this form of airway disease in dogs, this term is very misleading. Asthma in humans specifically refers to the reversible constriction of muscle within the walls of the bronchi. Chronic bronchitis (long duration, usually more than two to three months) is associated with inflammation and swelling of the walls of the bronchi resulting in narrowing of the airways and obstruction or blockage of airways by plugs of mucus or other secretions. The inflammation present in chronic bronchitis is not reversible.



As mentioned, bronchitis can be chronic or acute (short duration). Unlike chronic bronchitis, acute bronchitis is associated with reversible changes in the structure of the airways. Bronchitis may be caused by bacterial infections, hypersensitivity disorders (allergies), parasites (i.e., lung worms, heartworm) or chronic inhalation of airway irritants (second-hand smoke, dusts, exhaust fumes, etc.). In chronic bronchitis the underlying cause cannot be identified.

### How common is Chronic Bronchitis?

Chronic bronchitis, in association with tracheobronchial collapse, is probably the most common chronic airway disorder. Animals diagnosed with chronic bronchitis are generally over 6 years of age, and although there doesn't seem to be a clear sex or breed predisposition, it seems very common in small and toy breeds (e.g. Poodles and Pomeranians). Obesity is also an important complicating factor.

### Symptoms

Signs to look out for may include;

- Daily coughing, wheezing for a duration of 2-3 months or longer.
- Increased or laboured respiration (normal respiratory rate is approximately 30 breaths per minute at rest).
- Exercise intolerance
- Decreased appetite
- Lethargy/weakness

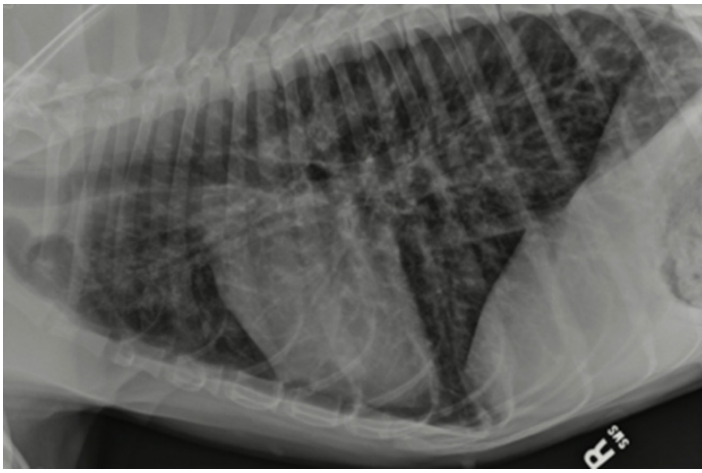
Coughing is often more pronounced initially upon awakening and then reduces in frequency while awake and active. Episodes of coughing can mimic vomiting; you may think that your dog is vomiting when in fact your dog is having a coughing fit followed by retching.

**These signs are not specific for bronchitis and can also be seen with many other diseases including heart failure, pneumonia, allergic lung disease and lung cancer.**

### Diagnosis

It is important to differentiate between chronic bronchitis and other common causes of coughing (e.g. heart disease).

To diagnose canine bronchitis, usually the first test is a chest radiograph (X-ray). The presence of radiographic changes to the airways combined with a clinical history of a middle- to older-aged dog with a cough for at least two to three months may be sufficient to establish a tentative clinical diagnosis of chronic bronchitis. However, bronchoalveolar lavage (BAL) may be recommended to exclude other airway diseases (lung parasites, allergic bronchitis).



This procedure allows collection of fluid and cells from your dog's lungs. These samples are sent to a laboratory to determine what types of cellular changes are occurring in the lungs and will help assist in determining what therapy might be most effective.

Bronchoalveolar lavage does require anaesthesia, so if the patient's condition is critical, it may not be possible to do this procedure.

## Treatment

With chronic bronchitis, the goal is to simply control the clinical signs (aim to reduce the frequency and severity of the coughing by approximately 70- 80%) and prevent worsening of the disease. **Unfortunately it is often difficult to stop the coughing completely.**

Any underlying disease (i.e., bacterial infection or parasitic infection) must be diagnosed and treated.

Treatment of a stable chronic bronchitis patient involves the use of anti-inflammatories to break the cycle of mucosal damage and limit secretions. **Corticosteroids** such as prednisone relieve inflammation and reduce secretions. Typically a short course is used to control symptoms initially followed by a lower dose maintenance course. This helps dry up the mucus in the airways and stop the cough-irritation vicious cycle. Bronchodilators in addition to anti-inflammatories may be dispensed for some patients.



As an alternative to oral steroids, inhaled steroids can be used as is done with human asthmatics. A special facemask is used and

a "spacer" connects the mask to the metered dose inhaler. Dogs typically need to use inhalers at least twice a day to control the symptoms of bronchitis. Airway dilators can also be given via inhalation in the same way as steroids.

Antitussives (medications that stop coughing), such as codeine, can be useful to relieve non-productive, continuous coughing.

Changes may be needed in the animal's environment. Animals with chronic bronchitis often have sensitive airways, and the inhalation of irritating particles from certain environments may worsen their condition.

### It is strongly recommended to:

- Reduce exposure to:
  - **smoke** - cigarette or fireplace,
  - **dusts** - carpet fresheners, flea powders,
  - **sprays** - insecticides, hair spray, perfumes, and cleaning products.
- Discourage dogs from excessively barking.
- Swap collars for harnesses.
- Lose weight if necessary.

**Weight loss is critical** and strongly recommended for obese animals. Weight loss alone may be enough in some patients and may reduce/eliminate the need for medication.

Dental disease should also be addressed to minimise secondary bacterial complications.

## Prognosis

Prognosis is variable with this disease. In most dogs, permanent damage to the airways has occurred and the disease cannot be cured. With proper medical management, clinical signs can usually be controlled and further damage to the bronchi can be stopped or slowed.

Periodic relapses of coughing are not unusual and require treatment. The cough is often not entirely eliminated, but reduced in patients with chronic bronchitis.