



## Kingsbrook Animal Hospital

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# Chronic Obstructive Pulmonary Disease (COPD) in Dogs

## What is Chronic Obstructive Pulmonary Disease?

Chronic Obstructive Pulmonary Disease is a long-term inflammatory condition that affects the pulmonary or respiratory system. This condition is irreversible and is slowly progressive. This condition may also be known as "chronic bronchitis".

## What causes COPD?

No definitive underlying causes of COPD have been determined.

"...long term airway inflammation may result from exposure to inhaled irritants..."

However, long term airway inflammation may result from exposure to inhaled irritants such as tobacco smoke, air pollutants or allergens, from dental disease, or from recurrent infections of the respiratory system.

## Are there other factors that can make COPD worse?

Yes. Obesity is a complicating factor and will worsen the symptoms. Dental disease increases the risk that bacteria will travel from the mouth into the lungs and cause a serious secondary infection.

## What part of the respiratory system is involved in COPD?

In general terms, the respiratory system is divided into two parts. The upper respiratory tract consists of the nose, nasal sinuses, throat and trachea or windpipe while the lower respiratory tract consists of the 'small airways' (bronchi and bronchioles) and the alveoli (the small air sacs deep in the lung tissue where oxygen exchange occurs). COPD is a condition of the lower respiratory tract. Initially it affects the small airways, although in advanced cases it will progress to also affect the alveoli.

## How does COPD affect the dog's lungs?

In its early stages, COPD causes inflammation in the small airways. Persistent inflammation will cause blockage of the small airways and will ultimately result in reactive changes in the lungs, including dilation of portions of the small airways (bronchiectasis) or scarring in the lungs (pulmonary fibrosis).

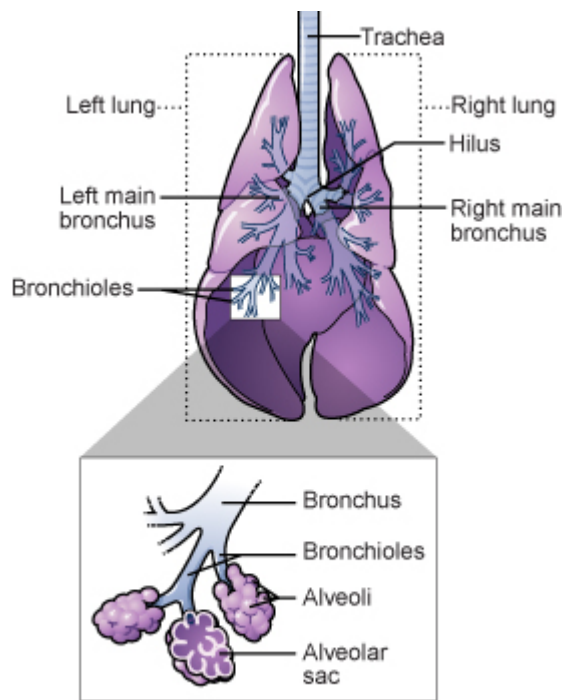
## How fast do these changes occur?

This condition develops slowly and progressively.

## What are the symptoms of COPD?

"...the main symptom of COPD is chronic coughing..."

In its early stages, the main symptom of COPD is chronic coughing, or coughing that persists for longer than a month. The cough is usually 'dry' or harsh, and gagging is common after coughing. As the disease progresses, the dog may have difficulty breathing and often has decreased exercise tolerance (tires easily) or may even faint with overexertion. Breathing may become noisy, and the pet may wheeze when exhaling. In later stages, the gums may develop a bluish tinge as a result of lack of oxygen. Dogs with COPD rarely have a fever and usually their appetite remains normal.



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## Could these symptoms be caused by something else?

Chronic coughing may also be a symptom of heart disease, infection of the lungs, or some types of cancer.

## How is COPD diagnosed?

Your veterinarian may suspect a diagnosis of COPD based on your pet's history and the results of a physical examination. When the chest is listened to with a stethoscope, "crackles" (harsh crackling or popping sounds) may be heard when the dog breathes in and out. With COPD, the heart rate is usually normal or lower than normal and there is often a pronounced sinus arrhythmia (an irregular heart rate that is associated with the breathing cycle).

A series of tests may be required to confirm the diagnosis and to exclude other diseases that could be causing the symptoms.

A **CBC and biochemistry profile** will assess the general health of your dog, and specific blood or fecal tests may be recommended to rule out parasitic diseases such as heartworm or lungworm.

**Thoracic radiography (chest X-ray)** often shows characteristic changes in the lungs, and may be helpful to eliminate other types of heart or lung disease.

**Cytology using bronchoscopy and/or tracheal lavage.** A bronchoscope is used to directly examine the inner surfaces of the airways in an anesthetized dog, looking for characteristic changes associated with COPD. After completing the visual examination, cytology samples, or samples of the cells lining the bronchi and bronchioles can be collected for microscopic examination and culture for microorganisms such as bacteria. Alternatively, cytology samples may be collected using a technique called tracheal lavage, in which a small amount of sterile saline is flushed into the airways and then retrieved; the collected material will contain mucus and cells from within the lung tissue, that can be examined microscopically or cultured for infectious organisms.

## What is the treatment of COPD?

Most dogs with COPD can be treated as outpatients. If the pet is experiencing severe respiratory distress, hospitalization for oxygen therapy and/or intravenous medication to stabilize the condition may be required.

Specific medications that may be prescribed to treat COPD include bronchodilators to dilate the airways and help clear secretions, cough suppressants, antibiotics if there is evidence of a secondary bacterial infection and/or corticosteroids to decrease the inflammation and ease the coughing. In some patients, the use of metered dose inhalers may be an option.

Non-specific treatments for COPD include diet modification and mild exercise to promote weight loss, and using a harness instead of a collar for restraint. Avoidance of irritants such as smoke or airborne allergens will help lessen the chance of relapses. Your veterinarian may prescribe supplements that have antioxidant, anti-inflammatory or immune stimulant functions as supportive treatments.

To reduce the risk that bacteria will induce further inflammation or cause an infection in the respiratory tract, it is important to maintain good oral hygiene in the dog with COPD. Most dogs will allow you to brush their teeth on a daily basis. Regular oral examinations including a complete dental descaling, cleaning and polishing under general anesthesia are part of a comprehensive oral hygiene program.

## What is the success rate for treatment of COPD?

This condition is non-reversible and often is slowly progressive. Appropriate treatment will slow the progression of the disease and will relieve distressing symptoms. With proper management, most dogs with COPD enjoy a normal life expectancy and an excellent quality of life. Relapses may occur when the seasons change or if air quality is poor. Adjustments to medication dosages may be necessary at these times. Consult our veterinary clinic for the appropriate advice if this occurs with your pet.

*This client information sheet is based on material written by: Cheryl Yuill, DVM, MSc, CVH*

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