

# COUGH

## BASICS

### OVERVIEW

- A sudden, forceful exhaling action (expiration) of air through the airway opening (glottis) of the voice box, preceded by an exaggerated effort to inhale (inspiration) and usually accompanied by an audible sound

### SIGNALMENT/DESCRIPTION of ANIMAL

- Dogs and cats of all ages and breeds

### SIGNS/OBSERVED CHANGES in the ANIMAL

- Cough
- Collapse
- Vomiting or retching

### CAUSES

Cough is a sign that results from many conditions. These include diseases or abnormalities in the upper airway (respiratory tract) consisting of the nose and throat (known as the “nasopharyngeal” area), the voice box (larynx), and the windpipe (trachea). The lower respiratory tract consists of the lungs and related tissues (such as the bronchi). In addition, problems involving the lungs and the blood vessels in the lungs (pulmonary/vascular disease) can lead to coughing as can problems in the esophagus and lining of the chest.

#### Upper Respiratory Tract Diseases

- Nasopharyngeal area (nose and throat)—inflammation of the nose (rhinitis); inflammation of the sinuses (sinusitis); foreign body or tumor in the nose or throat; inflammation of the tonsils (tonsillitis); tumor of the tonsils—due to extension of inflammation and/or secretions into the throat and/or voice box
- Larynx (voice box)—inflammation; foreign body; trauma; tumors
- Trachea (windpipe)—inflammation (tracheitis); infections (viral, bacterial, and parasitic); foreign body; collapse of the windpipe (tracheal collapse); tumor

#### Lower Respiratory Tract Diseases

- Bronchial—inflammation; infection (viral, bacterial, and parasitic); allergy; foreign body; tumors or cancer
- Pulmonary (lung)—inflammation; infection (viral, bacterial, and fungal); aspiration pneumonia; fluid build-up in the lungs (pulmonary edema); cancer (may originate in the lungs [primary cancer] or have spread into the lungs [metastatic cancer])
- Pulmonary/vascular (lung/blood vessels)—heartworm disease; blood clots in the lungs (thrombosis or embolism); congestive heart failure (CHF); high blood pressure in the lungs (pulmonary hypertension); heart tumors

#### Other Diseases

- Esophagus—inflammation; foreign body; tumor
- Diseases of the lining of the chest (pleural diseases) pressing the airways/lung tissue together (airway compression)—inflammation; infection (bacterial and fungal); hernia; tumor

### RISK FACTORS

- Congenital (present at birth) and acquired (develop later in life/after birth) disorders of the esophagus, stomach, and upper gastrointestinal tract may lead to aspiration pneumonia
- Excessive levels of steroids produced by the adrenal glands (disease known as “hyperadrenocorticism” or “Cushing’s disease”) or chronic administration of steroids in treating various disease conditions—may increase incidence of blood clots to the lungs (pulmonary thromboembolism) and may decrease resistance to respiratory infections
- Certain inherited heart disorders—increases risk of fluid build-up in the lungs (pulmonary edema) secondary to congestive heart failure
- Environmental factors—exposure to certain viral, bacterial, fungal, and parasitic diseases; exposure to infected animals; exposure of dogs or cats to mosquitoes (when effective heartworm preventive medication has not been administered at all or routinely to the dog or cat)

## TREATMENT

### HEALTH CARE

- Outpatient—unless congestive heart failure is diagnosed, oxygen therapy is required, or marked alteration in breathing ability or coughing up/spitting up blood (hemoptysis) is observed
- Wide variety of conditions can be responsible for cough, and a fairly extensive workup may be required to define and treat the underlying cause

### ACTIVITY

- Exercise restriction—best enforced until a cause is established and corrected, especially when activity aggravates the condition

#### **DIET**

- Normal for many causes of cough
- If cause of cough is congestive heart failure, your pet's veterinarian may recommend low dietary sodium levels

#### **SURGERY**

- Surgical intervention—primary indications include collapse of the windpipe that does not respond to medical treatment (known as “refractory tracheal collapse”), paralysis of the voice box (laryngeal paralysis), and tumors involving the respiratory tract

### **MEDICATIONS**

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Symptomatic treatment—drugs to open up (dilate) the bronchi (bronchodilator) and to increase secretions in the bronchi and to aid in the clearing of the lungs (expectorant therapy)
- Broad-spectrum antibiotics—for suspected infection when results of bacterial culture and sensitivity testing are pending
- Bronchodilators (such as extended-release theophylline and terbutaline) with or without the use of expectorants—may be beneficial for a variety of diseases affecting the trachea and lower respiratory airways
- Corticosteroids may be the only effective therapy in the long-term management of chronic bronchitis in dogs and asthma in domestic cats; oral or inhaled corticosteroids can be effective in controlling cough
- Cough suppressants (such as hydrocodone and torbutrol)—avoid in patients with cough secondary to bacterial respiratory infection and congestive heart failure; while cough suppressants may prove beneficial in controlling coughs of other origin, use should be withheld until thorough diagnostic procedures have been completed
- Therapeutic drainage of fluid within the chest cavity (known as “thoracentesis”)—perform on any patient in which build-up of fluids in the space between the lungs and chest wall (the fluid is known as “pleural effusion”) is felt to be contributing to any breathing discomfort or distress

### **FOLLOW-UP CARE**

#### **PATIENT MONITORING**

- Monitor control of the cough
- Follow-up chest X-rays in 3 to 7 days with heart and/or blood vessel disease, in 10 to 14 days with lung disease; in 3 to 4 weeks to monitor potential tumors

#### **PREVENTIONS AND AVOIDANCE**

- Prevention is determined by the cause of the cough; use of heartworm preventives to protect the dog or cat from heartworm infection; vaccinations and limiting exposure to pets with infectious disease coughing (such as kennel cough for dogs)

#### **POSSIBLE COMPLICATIONS**

- Resolution or medical control of cough does not ensure complete elimination of the underlying cause
- Serious respiratory dysfunction and even death may be caused by underlying disease
- Complications of the cough—spread respiratory infections to other dogs or cats, complicate inflammatory conditions in the airways, or even result in emphysema or pneumothorax (air in the chest cavity) by causing rupture of diseased areas of lung tissue

#### **EXPECTED COURSE AND PROGNOSIS**

- The expected course and prognosis are determined by the cause of the cough
- Serious respiratory dysfunction and even death may be caused by underlying disease

### **KEY POINTS**

- Cough is a sign of disease
- Wide variety of conditions can be responsible for cough, and a fairly extensive workup may be required to define and treat the underlying cause
- Treatment is based on diagnosis of underlying cause