

# Collapsing Trachea

## ABOUT THE DIAGNOSIS

The trachea is commonly known as the windpipe. In dogs and cats, as in people, this is the “tube” that extends from the back of an animal or person’s mouth to the chest, where it divides into smaller tubes (bronchi) that lead to the lungs. Air travels into and out of the lungs through the trachea. The trachea consists of a long column of rings stacked on top of each other. These rings are made of firm cartilage. For unknown reasons, some of these rings can lose their rigidity prematurely with age and partially collapse in some dogs. The rigid tube then becomes floppy and can flutter with breathing, which triggers fits of coughing. This can happen anywhere along the length of the trachea. The problem of a collapsing trachea most commonly occurs in middle-age to older dogs that are toy or miniature breeds (Lhasa apso, Yorkshire terrier, Chihuahua, Pomeranian, toy poodle, shih tzu, and others); however, a collapsing trachea occasionally occurs in younger dogs or in larger dog breeds. Very rarely, a dog may be born with this problem (congenital disorder).

The most common sign associated with a collapsing trachea is a nonproductive (dry) cough. The cough is often described as a “goose honk” because of its characteristic sound and the cough typically can be triggered by excitement, anxiety, exercise, eating and/or drinking, becoming overheated, and mild pulling on the collar (as opposed to pulling hard on a collar or leash, which can trigger a cough in virtually any dog). Some owners report that picking their dogs up under the chest area can bring on coughing caused by a collapsing trachea. Like any cough in dogs (whether caused by collapsing trachea or anything else), dogs generally give the impression that they are trying to “cough something out,” even though there is nothing to cough out. This is an impression that is produced by the repetitive fits of coughing that end in a terminal retch; a terminal retch is a final, hacking, gagging sound that is louder than the cough and that ends a fit of coughing. A dog may occasionally produce foam or bile during the terminal retch. None of these symptoms is specific to collapsing trachea, however, and dogs with any manner of lung, bronchial, or tracheal problem produce this same appearance of symptoms. The cough occasionally may be severe enough to cause the dog to faint. In the earliest stages, some dogs with a collapsing trachea do not cough at all and the problem goes unnoticed.

Collapsing trachea is usually diagnosed based on a combination of symptoms (coughing episodes brought on by the events listed above) and visualizing the narrow trachea on x-rays of the neck and/or chest. Occasionally, the veterinarian will recommend that other procedures be performed to help determine if the dog has a collapsing trachea or to determine the severity of the collapse. One of these tests, fluoroscopy, is a method of watching “moving x-rays” of the dog as it lies on a table. These real-time x-ray images make it plainly apparent that the trachea is collapsing during respiration. Fluoroscopy is performed with the dog awake or mildly sedated and is noninvasive. It confirms that collapsing trachea is present and shows the extent of the collapsing segments (i.e., severity). Bronchoscopy is a less commonly performed test to assess the severity of a collapsing trachea. Bronchoscopy involves gently inserting a long tube with a very small camera on its end into the trachea while the dog is heavily sedated or anesthetized. As the tube is advanced into the airway, images of the walls of the airway are seen and the process of collapsing trachea can be seen directly, as can any complicating factors such as

evidence of infection (pus) and swelling of the tracheal or bronchial walls (airway edema).

If your veterinarian suspects that your dog has another respiratory problem that may be exacerbating the collapsing trachea, several other tests may be performed while your dog is sedated or anesthetized. For example, the airway may be flushed with a sterile fluid to collect organisms and cells lining the inside of the trachea (bronchoalveolar lavage or BAL). Another test involves inserting a small brush into the trachea and gently rubbing it against the walls in several locations to collect organisms and cells (brush cytology). Yet another test involves inserting a small instrument into the trachea and cutting out tiny tissue samples of the walls of the airway in areas that look abnormal (biopsy). These tests may help to find organisms such as bacteria, viruses, fungi, or others that do not belong in the dog’s airways.

## LIVING WITH THE DIAGNOSIS

If your dog has been diagnosed with a collapsing trachea, you can do many things to help make his or her more comfortable. Instead of a collar, you should use a harness when taking your dog for a walk. Harnesses fit around a dog’s chest, avoiding pressure on the neck caused by collars. Do not walk the dog in hot, humid weather and avoid leaving him or her in a car in hot weather in general, but especially with collapsing trachea. Leaving a dog in a car can not only lead to overheating, but also can be stressful even in cooler weather. Even after changing from a collar to a harness, avoid overexercising your dog. For overweight dogs, switching him or her to a weight-reducing diet and monitoring weight loss until an optimal weight is reached can help tremendously. If stressful situations are anticipated (for example, if the house will be full of children for a birthday party), talk to your veterinarian about giving a sedative medication to your dog before the event. Often, barking and fast breathing are triggers for tracheal irritation and long bouts of coughing, so activities that can trigger barking or fast breathing should be limited or abolished.

## TREATMENT

For most dogs diagnosed with collapsing trachea, some medications can be very helpful. Your veterinarian can prescribe a specific type of medication for your dog depending on the specific features of the case and available medications. There are several types of appropriate medications that work in different ways. **Sedatives** can help a dog to relax, which breaks the cycle of anxiety-induced coughing → coughing-induced tracheal irritation → more anxiety and more coughing (and so on). Some types of **cough suppressants** can be very helpful and may even contain a sedative, which helps to calm your dog and breaks the vicious circle of coughing induced by tracheal irritation which was induced by coughing. Another type of medication (**bronchodilator**) works by dilating the tiny airways that lead to the lungs—the bronchi—and making the work of breathing a little bit easier. Your veterinarian can discuss the schedule and appropriateness of these medications with you. Some dogs may only need to be given the medication at certain times of greatest need. Other dogs may need to receive them more often to prevent flare-ups. Just as in people, a dog may respond better to some medications than others. For this reason, if one medication does not appear to help, talk to your veterinarian about trying another type or any need for tests to assess why it might not be working (for example, if complications are present).

If the dog has other respiratory or heart problems, these may need to be treated as well. The treatment will depend on the specific problem.

In some dogs, a medication may lose its effectiveness, especially if the collapsing trachea worsens over time. If a dog no longer responds well to any of the available medications, surgery may be an option. A wire mesh tube (stent) that mimics the function of the dog's real tracheal rings can be implanted by a veterinary specialist. This procedure has had limited success and some complications. There are many factors to consider before this surgery can be performed, and not all dogs are candidates for this procedure. Your veterinarian can refer you to a specialist if this type of surgery might be an option.

### DOs

- Give medicine exactly as prescribed.
- Use a harness or Gentle Leader-type face collar instead of a regular collar.
- Avoid placing the dog in situations that you suspect may be stressful or anxiety-provoking or that have triggered fits of coughing in the past.
- Realize that collapsing trachea is not a curable problem, but also not one to give up hope on. With the right medication combination, weight loss if needed, and common-sense approaches like using a harness instead of a collar, a normal lifestyle is expected for a dog with collapsing trachea.
- Understand that collapsing trachea can be difficult to treat, and that a second opinion from a veterinary internal medicine specialist may be helpful. You can discuss this with your veterinarian and a list of these specialists is available at [www.acvim.org](http://www.acvim.org) for North America, [www.ecvim-ca.org](http://www.ecvim-ca.org) for Europe.

### DON'Ts

- Do not overestimate the seriousness of a cough in collapsing trachea. If the gums and tongue are pink (and not blue or grey) and the breathing effort is normal (not labored), collapsing trachea often sounds worse than it is. To most dogs, collapsing trachea probably feels like a tingling sensation in the throat, not

a serious breathing problem. Reaching conclusions about a pet's suffering and quality of life just because the cough is loud or frequent may be very premature, so be sure to consult with your veterinarian if you feel your dog is in distress from collapsing trachea.

- Do not leave any dog in a car with the windows rolled up, especially in warm, humid weather.
- Do not force your dog to continue exercising if coughing begins.

### WHEN TO CALL YOUR VETERINARIAN

- If your dog shows signs of an adverse drug reaction (weakness, drowsiness, anorexia or decreased appetite, hives [bumps under the skin], vomiting, diarrhea, constipation or straining to have a bowel movement, seizures, etc.).
- If your dog faints and you cannot wake him/her up immediately.
- If your dog produces a greenish or whitish phlegm when coughing (or a similar-appearing discharge comes from the nostrils).
- If a medication no longer appears to be effective. Some dogs become "resistant" to some medications after taking them for a while and can be switched by the veterinarian to other medications to which they respond better.

*Other information that may be useful: "How-To" Client Education Sheet:*

- How to Deal with Incessant Coughing

Practice Stamp or Name & Address