

Brachycephalic Airway Syndrome

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Brachycephalic dogs are the breeds with the “smushed face” appearance. Breeds include English and French Bull dogs, Boxers, Boston terriers, Pugs, Shih Tzus, and Pekingese. Their facial shape is due to a mis-shaped, shortened skull. Because of the abnormal shape of their skulls, brachycephalic breeds are prone to several respiratory problems affecting their upper airway, which includes the nose, mouth and throat. **When the combination of upper airway problems occurs in these breeds the problem is called brachycephalic airway syndrome.**

The three main problems associated with this syndrome include **narrow or stenotic nostrils, elongated soft palate and everted laryngeal sacculae**. The excessive narrowing of the nostril makes breathing air through the nostrils difficult. There is usually an associated increase in respiratory effort and noise associated with the breathing. The soft palate is the soft area past the hard palate or roof of the mouth. When the soft palate is longer than necessary it can hang down the back of the throat and obstruct the larynx and trachea. This can also cause abnormal breathing noises, snoring, and obstruction of the airway. Because of the turbulent air flow down the trachea caused by the elongated soft palate, this can lead to inflammation of the tissues around the larynx. This phenomenon is the everted laryngeal sacculae. Since their airways are already narrow and abnormal even mild inflammation from increased respiration can lead to respiratory distress. In brachycephalic breeds even just a small rise in body temperature can lead to excessive panting. In addition to the 3 problems described above some breeds are also predisposed to hypoplastic or narrow tracheas, which further complicate the upper airway.

Clinical signs associated with this syndrome can range from mild respiratory effort to severe life threatening distress. **Owners often report noisy breathing, snorting, snoring, excessive panting, heat intolerance and exercise intolerance.** Severe cases will obstruct their air way while sleeping and owners will report restlessness at night time and poor sleepers. **If your pet is occasionally having a blue or purple tongue this indicates poor oxygenation and can lead to life threatening distress.**

Dogs with this syndrome are usually diagnosed on clinical signs and airway examination. Chest radiographs can be taken to assess the trachea and to rule out any heart or lung disease.

Treatment for this syndrome mainly consists of surgical correction. The nostrils can be widened for better airflow, the soft palate can be trimmed to the appropriate length, and the everted laryngeal sacculae can be removed. This will help clear the airway and decrease turbulent air flow. Some owners of brachycephalic breeds are under the impression that these breeds do not tolerate anesthesia well. **These breeds often**

tolerate anesthesia well and most of them have never had an easier time breathing with the intubation tube in place. **It is waking up from anesthesia that is difficult for these breeds.** Although the procedures are very brief serious complications can occur post operatively. Since the airways are already narrow, the manipulation and surgical alteration can lead to swelling post operatively. This can lead to life threatening respiratory distress after the surgery. The patient's temperature, anxiety levels, and swelling all need to be managed carefully for these reasons. In rare occasion a temporary breathing hole may be need to be made in the trachea called a temporary tracheostomy. **The surgery should be done by an experienced surgeon and your pet should be monitored for complications at least overnight to 24 hours after the procedure.**

The prognosis for young brachycephalic dogs is often good. The prognosis is more guarded for older dogs with chronic upper airway disease. These dogs often have secondary changes to their upper airway that may not improve with surgical manipulation. Since early intervention improve your dogs outcome having a young brachycephalic breed assessed by a veterinarian earlier in their life is key to recovery.