



## BRACHYCEPHALIC SYNDROME

### What is BRACHYCEPHALIC SYNDROME?

Brachycephalic syndrome refers to a combination of conformational abnormalities that can make it difficult for short-muzzled dogs to breathe normally. These dogs are typically very noisy while breathing and have difficulty getting enough air during periods of high activity or during hot, humid weather. The upper airway abnormalities include stenotic nares (narrowed nasal openings), elongated soft palate, and everted laryngeal ventricles (sacculae). Brachycephalic breeds such as Bulldogs, Pugs, Pekingese, and Boston Terriers are genetically predisposed to these problems. Some breeds, especially English Bulldogs, may also have a hypoplastic (narrowed) trachea. Alone, each of these problems can cause airway resistance, but their cumulative effects can make normal breathing very difficult and possibly lead to life threatening respiratory distress.

### Stenotic nares

Stenotic nares are defined as very narrow nostril openings. The nostrils may even collapse during inhalation. To compensate, a dog with stenotic nares may need to breathe almost exclusively through his/her mouth, which means air is not warmed, moistened or filtered prior to entering the lungs. A wedge resection is a surgical procedure in which triangular-shaped pieces of nasal tissue are removed to create permanent, wider nasal openings.

### Elongated Soft Palate

An elongated soft palate is simply a soft palate is too long extending back towards the opening of the airway. During inhalation, negative airway pressure can draw this elongated tissue into the laryngeal opening (opening to the upper airway) and greatly retard or block airflow. Surgical removal of excessive soft palate completely relieves this component of airway obstruction.

### Everted Laryngeal Sacculae

Laryngeal ventricles are inverted folds of tissue on either side of the larynx (voice box), which is the opening to the upper airway. Constant labored breathing causes these tissue folds to evert (turn inside out) into the airway, further hampering normal airflow. Surgical removal of the everted sacculae can significantly decrease resistance to normal air flow.

### Treatment

Not all dogs with brachycephalic syndrome need surgery. Many dogs can lead a comfortable life by maintaining an ideal weight and avoiding things that lead to prolonged rapid breathing such as heat, humidity and excessive activity or excitement. Dogs that continue to experience ongoing difficulty breathing would be considered good surgical candidates for correction of all upper airway anatomic abnormalities. Surgical correction almost always relieves the partial airway obstruction(s) and patients breathe much easier and quieter and have a significantly improved quality of life.

