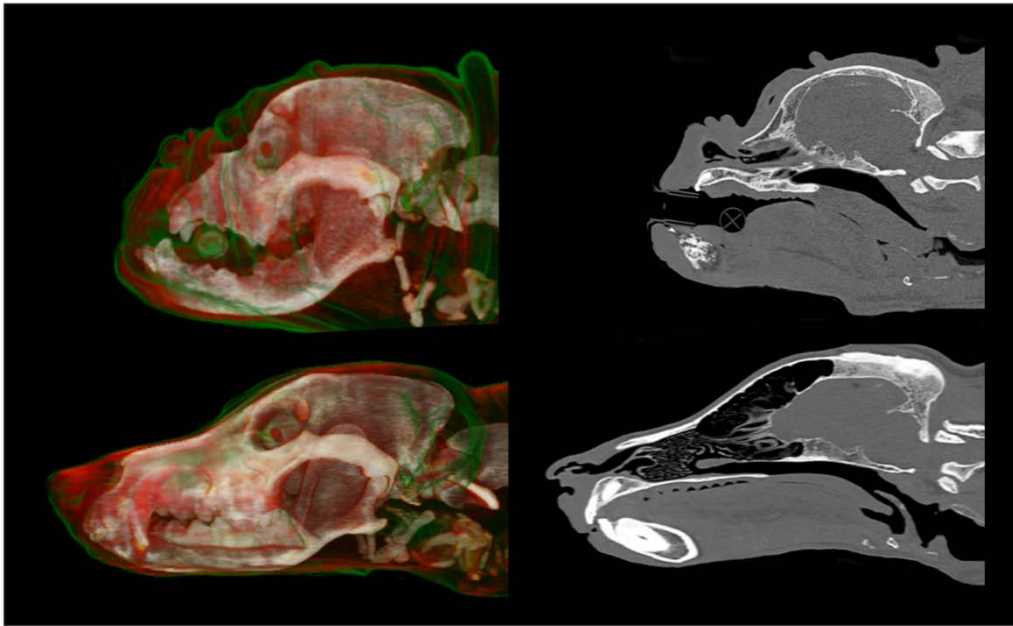




## What Causes Brachycephalic Obstructive Airway Syndrome?



The canine skull is formed by the fusion of many different bony components, which meet at boundaries called 'suture lines'. In the brachycephalic breeds a genetic mutation results in premature closure of the 'spheno-occipital' suture resulting in a shortened domed skull and a reduction in muzzle length.

However, the soft tissue structures of the head and the contents of the nasal cavity do not always reduce proportionately with the skull, and this can result in lesions (abnormalities) at different sites that can obstruct the airway.

The most frequently found lesions are narrowed, 'stenotic' nostrils, an elongated and often thickened soft palate and tongue, and a relatively small (hypoplastic) larynx and trachea (voicebox and windpipe). With the use of better imaging, such as computerised tomography (CT) and rhinoscopy (inserting a viewing instrument into the nose), we are now also looking at the nose in more depth.

Many of these dogs also have deviation of the nasal septum which separates the left and right halves of the nasal cavity, and also turbinates (cartilage scrolls) within the nose that are cramped and distorted in position. This can result in the obstruction of air passing through



the nose which, in addition to obstructing the breathing, can also reduce effective thermoregulation (a dog's ability to regulate its body temperature).

These primary sites of obstruction lead to high airway pressures and turbulence when breathing, which can result in secondary changes such as tonsil enlargement and collapse of the larynx. Abnormally elevated pressures inside the thorax may cause reflux of stomach contents into the oesophagus or even hiatal hernia (the stomach sliding through the diaphragm into the chest).

This airway disease can be recognised by reduced exercise tolerance and distinctive airway noises – a stertorous ('snoring-like') lower pitched noise due to palate/nasal obstruction and stridor, a higher pitched noise due to laryngeal narrowing or nostril constriction.

### **Task 1**

Watch the below video and listen carefully to the breathing sounds:

<https://www.youtube.com/watch?v=pQd0xbddfY&feature=youtu.be>

Unfortunately many people think these airway noises are normal for these breed and do not recognise them as signs of airway disease.

### **Task 2**

Try resting/ sleeping with a clothes peg on your nose and see how it affects your breathing and quality of sleep