

Don't Wait: Surgery for BOAS

This serious, progressive breathing problem can be corrected, but the sooner the better

Brachycephalic breeds are at risk for a progressive, life-threatening disorder called Brachycephalic Obstructive Airway Syndrome, or BOAS. This worsening disorder should not be ignored, especially in an English Bulldog, French Bulldog, Pug, or Boston Terrier.

The solution is surgery, says Dr. Nicole Buote, associate professor of small animal surgery at Cornell University's College of Veterinary Medicine. Dr. Buote prefers laser surgery for these dogs.

Signs of BOAS

Unfortunately, the signs of BOAS are often mistaken as normal for the breed. That's because these signs are common, but they are not normal:

- ▶ Frothing at the nostrils
- ▶ Snoring
- ▶ Snorting
- ▶ Gagging
- ▶ Noisy breathing
- ▶ Disruptive sleep
- ▶ Exercise intolerance
- ▶ Heat intolerance

These signs indicate a disruption of the normal easy passage of air in and out of the body. As the dog pulls harder to



Naturally large tongues on dogs like this Boston Terrier only add to the problem.

move air in, secondary issues are created that make matters worse.

The primary anatomical defects predisposing these dogs to BOAS include:

- ▶ Closed off nostrils (stenotic nares)
- ▶ Crowded tissue in the nasal passages
- ▶ Elongated soft palate

These dogs also tend to have disproportionately large tongues and tiny tracheas, neither of which are helpful.

Secondary issues, which further obstruct air flow, develop over time due to the negative pressure created while the dog tries to pull air past the primary physical obstructions. These include:

- ▶ Nasal passage swelling
- ▶ Everted laryngeal sacculles (laryngeal soft tissue gets sucked into the airway)
- ▶ Enlarged tonsils
- ▶ Laryngeal collapse
- ▶ Tracheal collapse
- ▶ Gastrointestinal problems (gastroesophageal reflux, regurgitation, vomiting, hiatal hernia)

These issues are preventable by correction of the primary anatomical defects. And surgery is the only way to do this.

Why Surgery Is Urgent

It sounds like we're pushing

surgery, but the fact is that the sooner BOAS is identified and surgically corrected, the better and longer the dog lives. A paper in the *Australian Veterinary Journal* concluded that younger dogs do much better post-operatively than older dogs.

As you can imagine, surgery performed in the back of a brachycephalic dog's throat is not simple. Additionally, brachycephalic breeds are high-risk anesthesia patients. As such, choosing an experienced, board-certified veterinary surgeon is the best way to go.

There are different surgical techniques for shortening an elongated soft palate, a procedure called staphylectomy. Successful outcomes using laser surgery depend on the surgeon's skill. While Cornell does offer laser staphylectomy, Dr. Buote is currently the only surgeon with experience using laser for this procedure.

"I have been using a laser for over 15 years and prefer it for a few reasons," says Dr. Buote. "First, there is less bleeding, which makes the procedure faster for me, and there is better visualization."

"Laser surgery also leads to less damage to the salivary glands and less edema (tissue swelling) than scissors," says Dr. Buote, adding that it lessens the potential for certain post-operative complications. A paper published in the *Veterinary Journal* in February 2022 compared a laser versus other techniques and supports Dr. Buote's observations.

"I also like the laser because the various available pen attachments allow me to be very accurate with the tissue I remove," says Dr. Buote. "Some of the other hand-held devices (bipolar sealing devices, harmonic scalpels) can be difficult to get into the back of the throat with these dogs."

Dr. Buote says that, while there is thermal injury to tissue with laser surgery, it rarely causes post-operative problems and the benefits of laser far outweigh the negatives of this inescapable laser after effect.

"Overall," says Dr. Buote, "in



Some BOAS-affected dogs have exercise intolerance, which might result in slower times and shorter play periods.



At this time, Dr. Nicole Buote is the only veterinary surgeon at Cornell with experience using the laser for the BOAS surgery.

experienced hands, the laser allows for quick and precise resection of the soft palate with minimal to no blood loss and no clinically important tissue swelling or complications.”

Bottom Line

If your dog is showing signs of BOAS, contact your veterinarian for a referral to a board-certified surgeon now.

Discuss your dog’s signs with your veterinarian and get a recommendation about what to do. If your brachycephalic dog is deemed a surgical candidate, don’t delay. There are ways to manage the signs of BOAS—keep your dog at a healthy lean weight, always in a cool environment, and avoiding any activities that get him breathing hard—but nothing negates the reality that if your dog has any of the signs of BOAS, the condition will progress.

Untreated BOAS will negatively impact your dog’s quality of life, could become a life-threatening emergency at any moment, and almost certainly shorten your dog’s lifespan. If your veterinarian suggests a surgical consultation for your dog, the time to do it is right away. Nothing good comes from waiting if your dog suffers from BOAS. ■

Lindsay, B, et al. “Brachycephalic airway syndrome: management of post-operative respiratory complications in 248 dogs,” AVJ 2020 February, vol 98, issue 5.

Conte, A., et al. “Comparison of harmonic shears, diode laser, and scissor cutting and suturing for caudal palatoplasty in dogs with brachycephalic obstructive upper airway syndrome,” Vet J. 2022 Feb; 280:105802. doi: 10.1016/j.tvjl.2022.105802

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Researching Effects of Aging

Research in gerontology for both humans and animals is on the rise with mutual benefits

Your dog is going to age, but can we help him age well? Amazing work in a new medical specialty called gerontology—the study of aging—is finding ways to mitigate and treat the inevitable changes that occur as our dogs grows older.

Gerontology

In both human and veterinary medicine, gerontology is the fastest-growing medical specialty. In 2009, recognizing the importance of collaboration between experts in human and animal health, the Centers for Disease Control and Prevention implemented the One Health program, which combines human and canine medical research and insights, recognizing our shared environment.

As both gerontology and the One Health initiative grow, veterinary experts like Natasha Olby, a professor of neurology at the College of Veterinary Medicine at North Carolina State University, are adding to the research.

Canine Studies

It’s well-established that aging humans with hearing loss are at a higher risk for both depression and dementia. With this in mind, Dr. Olby and her researchers looked at aging dogs with hearing loss to evaluate the relationship of cognitive function and hearing loss and its effect on a dog’s quality of life.

The study, published in *Frontiers of Veterinary Science*, found that owners of dogs with hearing loss did perceive a difference in their dogs’ quality of life. The study data showed that hearing loss was associated with the severity of cognitive dysfunction in dogs. The more

severe the hearing loss, the lower the quality of life. The researchers theorized that if hearing loss could be addressed, the progression of cognitive dysfunction in dogs might be slowed, raising the quality of life.

In a similar study in *Scientific Frontiers*, Dr. Olby and her group used the dog’s natural incredible sense of smell to see if it may eventually be used as a measure of canine cognition.

More work needs to be done in both areas, but this type of research may lead to a better understanding of loss of cognition in both humans and dogs.

What This All Means

Neurodegeneration is a frustrating field for veterinary and human medicine. Changes in cognitive and sensory function can be as devastating, if not more so, than other more obvious physical changes, like liver or kidney dysfunction, but far more difficult to understand and to treat.

Mobility issues in aging dogs are usually from arthritis, but dogs can also develop neurodegenerative problems such as degenerative myelopathy, which can mimic Lou Gehrig’s disease.

With veterinary and human medicine researchers working together on overlapping difficulties related to aging, we can learn more in a shorter amount of time.

Gerontology encompasses changes we see as our dogs and we ourselves age and how to mitigate those changes where possible. Treatment for inevitable changes in our older dogs and in ourselves is a lofty goal, but one that will increase quality of life for all mammals. ■



Search-and-rescue dogs like this Belgian Malinois use their keen olfactory sense to find missing people, even those trapped in rubble. Experts are looking at dogs to see if a decrease in sense of smell correlates with a loss of cognition.