



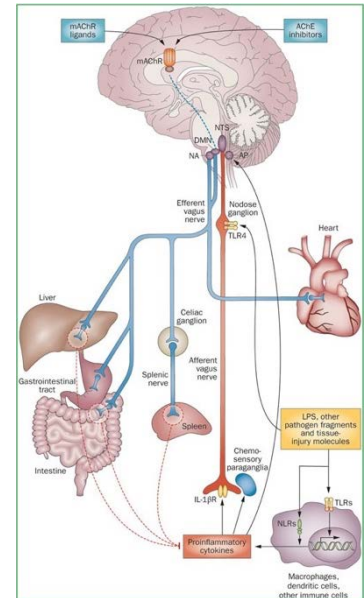
THE VAGUS NERVE STIMULATION PROTOCOL

Understanding the Vagus Nerve in Dogs

The vagus nerve (cranial nerve X) is the longest cranial nerve, extending from the brainstem through the neck, thorax, and abdomen. In dogs, as in humans, it modulates the "rest and digest" response, influencing heart rate variability (HRV), gastrointestinal motility, and immune function. Low vagal tone is associated with heightened stress, inflammation, and autonomic imbalance, common in conditions like anxiety, cardiac disease, and epilepsy. Stimulating the vagus nerve enhances parasympathetic activity, promoting relaxation and homeostasis.

Conditions and Ailments Amenable to Vagal Stimulation in Dogs

While electrical vagal nerve stimulation (VNS) is established in veterinary medicine for specific indications, manual massage offers a complementary approach. Human evidence provides a foundation for its use in dogs, given conserved vagal physiology. Potential applications include:



Epilepsy: Seizures in dogs respond to implanted VNS, with studies showing >50% reduction in frequency after 1-2 years. Human massage studies suggest that vagal activation via neck or ear techniques may stop seizures by enhancing inhibitory neurotransmitters.

Heart Failure and Cardiovascular Conditions: Canine models of heart failure show that VNS improves the percentage of blood pumped out of the heart's main chamber and reduces inflammation. Human massage research links vagal stimulation to better heart rate variability (HRV).

Anxiety and Behavioral Disorders: Low vagal tone exacerbates stress in dogs, leading to reactivity or fearfulness. Human studies show ear and neck massage reduces anxiety by shifting to parasympathetic dominance. In rats, VNS decreases anxiety-like behaviors.

Inflammatory and Gastrointestinal Disorders: Vagal stimulation attenuates systemic inflammation in canine heart failure models by lowering C-reactive protein. Human applications for conditions like rheumatoid arthritis extend to dogs with arthritis or inflammatory bowel disease, where abdominal massage promotes gut motility and reduces pro-inflammatory cytokines.

Geriatric Onset Laryngeal Paralysis Polyneuropathy (GOLPP): This progressive polyneuropathy in older large-breed dogs involves degeneration of the recurrent laryngeal nerves (branches of the vagus), leading to laryngeal paralysis, hindlimb weakness, and aspiration risks. Vagal dysfunction is central to the pathology.

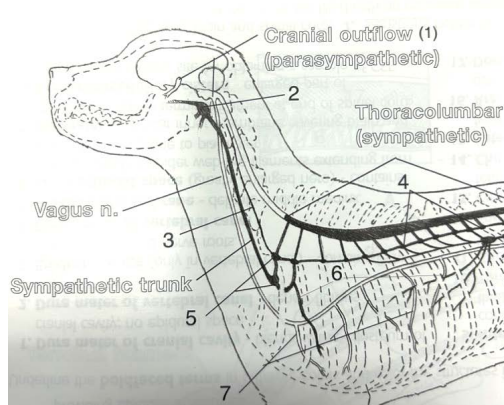
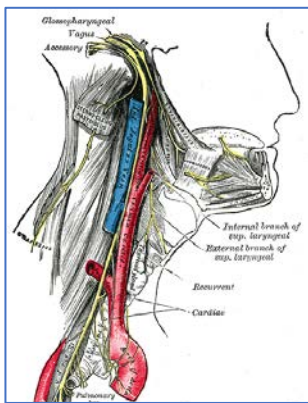
Megaesophagus: Often linked to vagus nerve dysfunction or neuromuscular disorders, this condition impairs esophageal motility.

STIMULATION TECHNIQUES

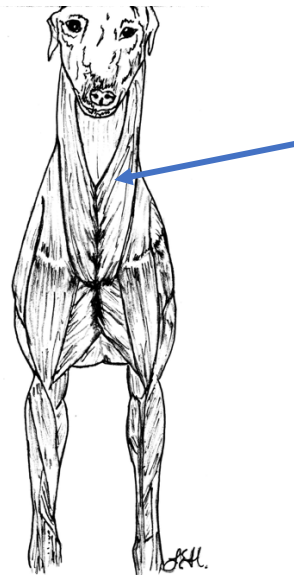
Massage Techniques:

Massage techniques can be performed for 5-10 minutes daily, tailored to the dog's tolerance. Human studies confirm that gentle, rhythmic touch—rather than deep tissue work—is optimal for vagal stimulation, as aggressive pressure may trigger a sympathetic response. In dogs, monitoring for signs of relaxation (e.g., slower breathing, yawning) ensures efficacy. Emerging canine-focused resources emphasize vagus nerve massages for overall nervous system regulation.

1. Massage – In the Suboccipital Region at the base of the skull and around the ears where the Vagus Nerve exits from the skull.



2. Massage - the Sternocephalicus Muscles – the strappy muscles on either side of the trachea. (Massage can be with hands – stroking or squeezing, or using an instrument or tool such as a Chinese soup spoon to perform a gua sha technique.)



3. Massage – the Abdomen - Clockwise strokes over the abdomen target visceral branches, aiding digestion and reducing gut inflammation. Human research indicates this enhances vagal activity by promoting parasympathetic outflow. For dogs, use light pressure above the navel, combining with deep breathing cues if the patient is cooperative.



4. Massage – Foot Reflexology - Massaging the paws mimics human foot massage, which boosts vagal function and lowers blood pressure. In veterinary practice, short strokes along the paw pads and metatarsals/metacarpals can be particularly useful for recumbent or anxious patients.



Ear Techniques

5. Ear Cleaning – The Vagus Nerve supplies sensation to the inner cartilaginous portion of the ear (the cymba choncha). Light circular rubbing or pulling of the ear for 1-2 minutes stimulates vagal tone, as demonstrated in human trials where it induced relaxation and decreased heart rate. You can also simply clean your dog's ears with a Kleenex covering the end of your finger. This can stimulate the portion of the ear supplied by the vagus nerve and/or the auricular acupuncture point for the spleen.

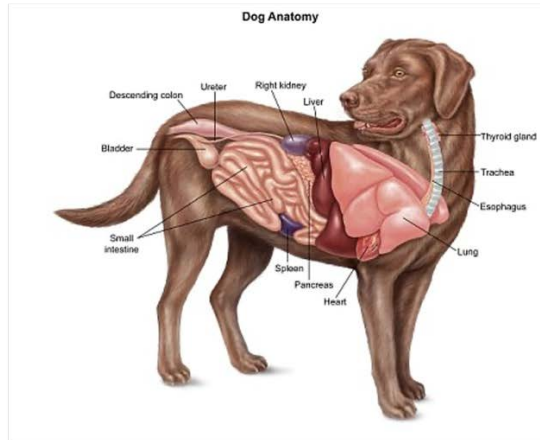
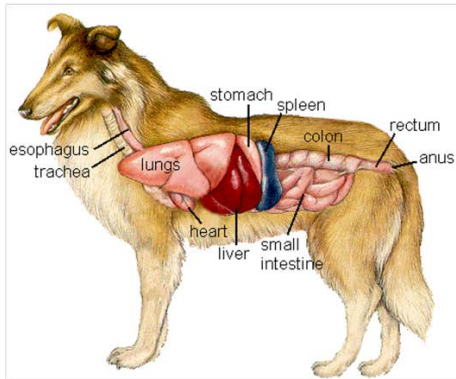


6. Ear Pulls – slow gentle pulls can impact the fascia around the base of the skull where the vagus nerve exits, and have an impact on the cymba concha as well. Hold the pull for 10 – 20 seconds and repeat 2 – 3 times, once a day.



Use Of Tool Or Devices

7. Vibration stimulus using a hand held vibrational massager over the:
 - a. Sternocephalicus (see above) – both sides
 - b. Below and behind the ear
 - c. Over the liver
 - d. Over the spleen



8. A small PEMF loop can be used over the back of the head and/or neck, or over the liver & spleen region. Use as directed (i.e. 30 minutes, once or more per day)



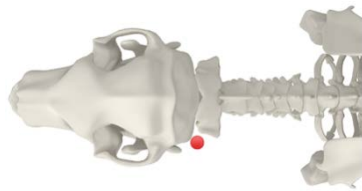
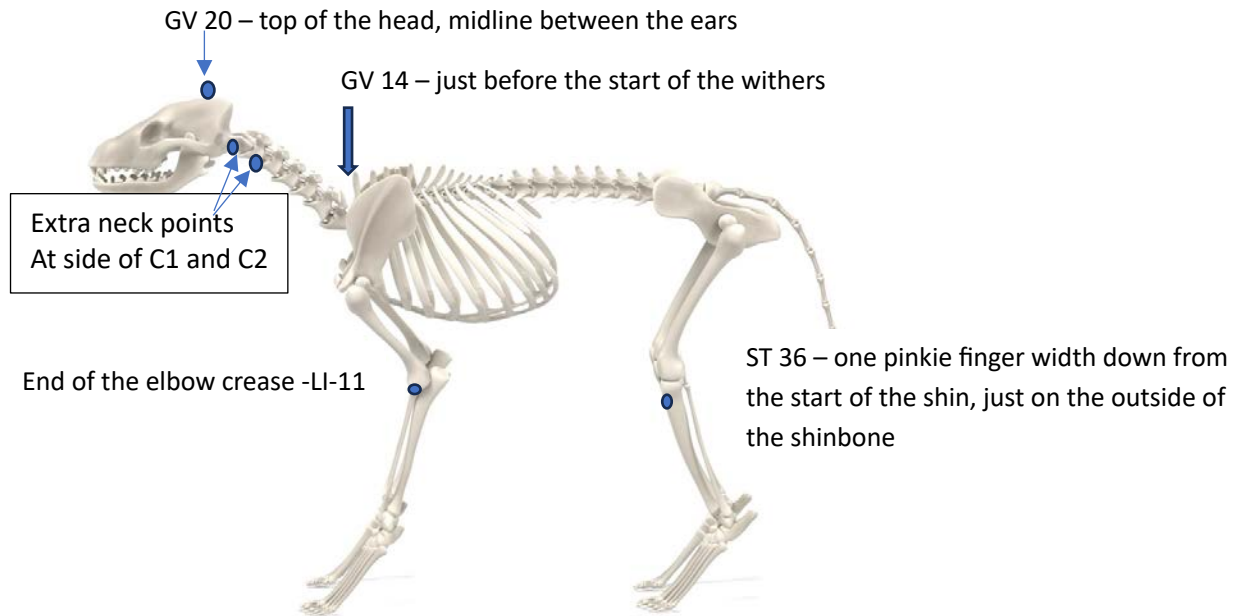
9. Sound and vibration therapy – There are phone apps can play various vibrational tones that are supposed to be useful for stimulation of the body and the vagus nerve. The frequency of 528Hz is purported to stimulate the vagus nerve. Tuning forks might also have a role in this category as well.



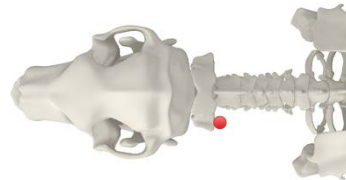
ACUPUNCTURE POINT STIMULATION

10. Acupoint Stimulation

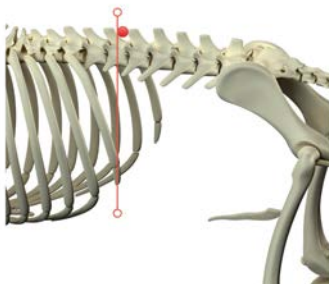
Using vibration, massage, or if a trained professional, then stimulate via needling, therapeutic laser, or ultrasound.



GALL BLADDER 20 – behind the skull



BLADDER 10 – behind the first neck bone



GV 4 (between L2 & L3)



GV 3 (any or all of them – L4-L7)



Bai Hui (lumbosacral junction)



GV 2 (sacrococcygeal space)

Myofascial Techniques

11. Stretching of the sternocephalicus muscles – This muscle runs from the sternum (the chest bone) to the mastoid process (the boney bit just behind the ears). To stretch this muscle you side bend the head to one side and then turn the nose in the opposite direction. Hold for 20 to 30 seconds and repeat 2 – 3 times once a day. Do both sides.



12. Myofascial releases at the occipital bones and the suboccipital muscles. This is more likely done by your rehab practitioner, but is safe to try at home as well. Put a finger to one side of the occipital protuberance (bump at the back of the skull). Move the skin from side to side. Repeat on the other side. If there is a Vagus Nerve Dysfunction – then one of those sides feels less mobile & less flexible. On the side of reduced mobility, decide if the restriction is with pushing away from or pulling towards the occiput. Find the restriction, and hold the skin push until a 'release' is achieved. A release will come as a yawn, as swallow, or a sigh. You can do both sides.

Repeat this, but now on the suboccipital muscles.

You can progress to a two-handed technique i.e. find restriction at the occipital bone and also the suboccipital muscles. Find the restrictions (usually in the opposite directions) and hold the skin pull until you get a release.



Adjunct Therapies

13. Enhancing the gut microbiome – Supplement with a canine prebiotic and probiotic formulation. Many are available either over the counter or from your veterinarian. Note that many human probiotics (like those designed for human colons) are not acid-resistant enough to survive a dog's highly acidic digestive tract or are not tailored to the specific microbial makeup of a dog's gut. According to the American Kennel Club, look for a blend of these key bacteria and yeast:
 - Enterococcus faecium
 - Lactobacillus acidophilus
 - Bifidobacterium animalis
 - Saccharomyces boulardii
14. Cold exposure has been shown to
 - Help regulate breathing
 - Have anti-inflammatory effects through the body
 - And Periodic cold exposure is a great way to heal a dysfunctional Vagus Nerve
 - For dogs the most practical way to do this is to spend time in the cold outdoors or give frozen treats.
15. Physical Exercise: It helps! Start at what your dog can do and build from there as able. Multiple short walks might be better than one long walk.
16. Spend Time in Nature (10 mins can reduce heart rate & blood pressure)
17. Optimize sleep
 - Eliminate blue light exposure before bed
 - Get SUN EXPOSURE in the DAYTIME
 - Don't eat or drink too late at night

Therapist Techniques

In addition to the manual techniques above your therapist might utilize laser therapy or therapeutic ultrasound to stimulate the brainstem and vagus nerve at the skull and neck, or over the liver and spleen.

Conclusion

By leveraging human research and emerging canine evidence, we can justify external vagus nerve stimulation to the dog, emphasizing parasympathetic activation for holistic care. As evidence grows, integrating these techniques could improve quality of life for dogs.