

How Osteopathy Can Help Dogs Recover From Vestibular Disease

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How Osteopathy Can Help Dogs Recover From Vestibular Disease

This thesis will address how and why using Osteopathic Articular Balancing (OAB) method and Functional Technique (FT) could ease and or eliminate the symptoms of Idiopathic Vestibular Disease (IVD) in Dogs. A brief history of Osteopathy and the Osteopathic Articular Balancing (OAB) technique will be addressed as well as the causes and symptoms of Idiopathic Vestibular Disease (IVD), and how using Osteopathic Articular Balancing (OAB) and the Functional Technique (FT) can provide relief from Idiopathic Vestibular Disease (IVD) symptoms on several different levels.

Thesis Statement

This Thesis will address how Starting Osteopathic Articular Balancing (OAB) and Functional Technique (FT) at the onset of Vestibular disease may help eliminate recovery time and the permanent head tilt in dogs. As well as how Osteopathic techniques can be used as a preventative measure for older dogs by maintaining their physical and physiological well-being

What is Idiopathic Vestibular Disease (IVD)

Idiopathic Vestibular Disease (IVD) primarily occurs in older dogs. Canine Idiopathic Vestibular Disease (IVD) often referred to as 'old dog syndrome', usually comes on suddenly, symptoms include rapid eye movement, nausea and loss of coordination, balance, and a permanent head tilt after recovery. Idiopathic Vestibular Disease (IVD) stems from issues affecting the dog's vestibular system within the brain, located in the inner ear, and middle ear. The vestibular system controls balance, so dogs with this disease experience dizziness, and nausea and have difficulty walking in a straight line.⁽¹⁾

1. *Vestibular Disease in Dogs - Symptoms & How It's Treated* | Tucson Emergency Vet. (n.d.).

Dogs are usually left with a head tilt as a result of Vestibular disease which can affect their gait, balance, and overall quality of life. Starting Osteopathic Articular Balancing (OAB) and Functional Technique (FT) at the onset of Vestibular disease may help eliminate recovery time and the permanent head tilt in dogs.

For this Thesis, we will only be looking at Idiopathic Vestibular disease. Non idiopathic causes of Vestibular disease can include an ear infection, perforated eardrum, hypothyroidism, trauma, tumors, or a poor reaction to certain antibiotics. When no specific cause is found, the condition is called idiopathic vestibular disease.

What is Osteopathy?

Osteopathic medicine was founded by Andrew Taylor Still, M.D. (1828 – 1917), he produced its concepts in 1874. Still's basic idea — that the human body was much like a machine, one that would function well if all its parts were in a proper mechanical relationship. This was unique compared to the medical thinking of the time. According to the osteopathic philosophy, when the body's musculoskeletal system is not properly aligned, it inhibits circulatory, lymphatic, or nervous system function and therefore reduces the body's ability to heal itself.²

² *Osteopathic Philosophy | College of Osteopathic Medicine of the Pacific (COMP) and COMP-Northwest.* (n.d.).

To get the body into alignment when it is not functioning properly, an Osteopath will use several techniques. An osteopath focuses on your whole body, including the soft tissues (such as muscles, ligaments, and tendons), the spine, and the nervous system, and may use a variety of different hands-on methods, including Spinal manipulation. Soft tissue massage techniques. Articulation – gentle rhythmic joint movements Articular balancing and Functional Technique. There are other modalities that an osteopath can use but for this thesis, we will focus on only a few of those.

Modern osteopathic techniques used today in animal manual therapy are attributed to the teachings of Stuart McGregor, D.O., a U.K.-based osteopath and Director of Clinical Studies at the London College of Animal Osteopathy (LCAO). Building on his vast knowledge and experience working with animals since 1983, Stuart has developed **OSTEOPATHIC ARTICULAR BALANCING (OAB)**, a safe and effective treatment method rooted in classical osteopathy.³

³ *Prof. Stuart McGregor and OAB.* (n.d.). www.animalosteopathycollege.com. Retrieved July 23, 2024, from <https://www.animalosteopathycollege.com/blog/prof-stuart-mcgregor-and-oab>

Two models of Osteopathy used to treat Idiopathic Vestibular Disease (IVD)

1. The Mechanical model deals with factors that alter posture, motion, and gait. These factors include altered joint relationships, muscle imbalances (hyper- and hypotonicity), and abnormal fascial tensions. These somatic dysfunctions can cause or contribute to adverse neurologic and circulatory functions. The energy demands of the body's attempt to cope with abnormal mechanical stresses can be part of the overall load contributing to arterial hypertension.⁴

2. The neurologic model deals with the effects of facilitated spinal cord segments and sustained sympatheticotonia, resulting in viscerosomatic and somatovisceral reflex phenomena. The goals of treatment within this model include restoring autonomic balance, alleviation of segmental facilitation, decreasing or eliminating abnormal afferent signaling, and relief of pain. Various OMT techniques can be used here, but some modalities that are thought to be especially effective within the neurological model include counter strain, model include counter strain and Osteopathic Articular Balancing (OAB), and the Functional Technique (FT)⁵

4 *Osteopathic Philosophy: Andrew Taylor Still, M.D.* (n.d.). Wwww.westernu.edu. <https://www.westernu.edu/osteopathic/about/osteopathic-philosophy/#accordion-2-button>

5 *Osteopathic Philosophy: Andrew Taylor Still, M.D.* (n.d.). Wwww.westernu.edu. <https://www.westernu.edu/osteopathic/about/osteopathic-philosophy/#accordion-2-button>

This thesis will use the mechanical and neurological models. That has been shown to have a positive effect on the issues created by Idiopathic Vestibular Disease (IVD), as well as have a positive effect on the neuro and muscular systems in the dog. The Functional Technique (FT) will be utilized to help with Idiopathic Vestibular Disease (IVD).

Osteopathic principal

“When you have adjusted the physical to its normal demands, Nature supplies the remainder.”

Dr. Andrew Taylor Still the Founder of Osteopathy

Osteopathy is based on the four tenets and five principles of treatment.

Four tenets provide the foundation for osteopathic medicine's whole-person approach:

1. The body is a unit; the person is a unit of body, mind, and spirit.
2. The body is capable of self-regulation, self-healing, and health maintenance.
3. Structure and function are reciprocally interrelated.
4. Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function.

Along with the four tenets, the Five pillars allow the ethical treatment of people and pets.

The five basic principles of Osteopathy

- Life is movement. Life represents itself in the form of movement. ...
- Structure and Function. The structure and function of the body condition each other. ...
- The law of the artery. ...
- Bodily globality. ...
- The body is able to heal itself.

Techniques that can be used for dogs with Idiopathic Vestibular Disease (IVD)

Osteopathic Articular Balancing (OAB) using Cranial manipulation

Osteopathic Articular Balancing (OAB) using Cranial Manipulation is based on the principle that the bones of the skull are capable of small movement and when they are misaligned it creates an imbalance in the body. Through small and gentle movements these bones can be realigned to achieve better brain function, proper flow of cerebral spinal fluid, and overall balance and communication in the body. The technique entails using gentle hand placement to create traction and a small amount of compression to release the restriction and allow for the cranium to return to normal positioning.

Then structural balancing should be very helpful to stop the faulty signaling of the afferent response which directly affects the efferent response so it does form a pattern that the brain adapts to as it tries to find balance. The sooner this can be disrupted and returned to neutral through the use of Osteopathic Articular Balancing (OAB) and Functional Technique (FT) the sooner the body can return to normal signaling and function. This should also help return the crystals through slow calming movements.

The Epley Maneuver can be used by osteopaths to provide immediate relief if it works for the dog. This technique is used on humans regularly to help with vertigo but is now starting to be utilized for Idiopathic Vestibular Disease (IVD) in canines. This should be used as soon as possible at the onset. Depending on the severity of the dog this may take two or three people to perform all being done very gently and making sure the dog is supported at all times.

Have the dog in a sitting position support their head and neck and then turn their head 45 degrees to the side that has the tilt. Then gently lie them down on their back and make sure they are supported while keeping the dog's head turned to the same side. Place the dog on its back with its head tilted towards the affected side for 90 seconds ideally the nystagmus subsides at this point. Then turn the dog's head 90 degrees to the other side hold for 90 seconds then bring the head back to neutral keep the body in a straight line and hold for 90 seconds. Then turn the body and head together to the side without the tilt for another 90 seconds. Then slowly roll them over to see how they are doing. This procedure can be repeated one more times if the dog is not responding.

Osteopathic Articular Balancing (OAB) and the Functional Technique (FT)

Osteopathic Articular Balancing (OAB) utilizes the following maneuvers to help dogs that have had a Vestibular incident return to normal function. We want to restore the body's afferent and efferent signals so the dog can return to normal function and posture. During an idiopathic vestibular episode, the brain and body are not communicating well. The brain can not find balance, and the body is sending up incorrect signaling, creating a bad cycle of misinformation which causes muscle contraction, and change that is not beneficial to the dog. Making sure the joints are aligned and that there is a harmonious relationship between the nerves, muscles, tendons, and ligaments will ensure the dog has a quicker recovery and better outcome from the incident. By taking the dog through a normal range of joint movement the practitioner can assess where the barriers are and slowly and gently work through them until the dog's normal pre-vestibular posture, gait, and range of motion are achieved.

Early intervention is crucial because it can prevent the escalation of symptoms and further deterioration of the dog's condition. By addressing the issue promptly, we can reduce the risk of chronic pain and long-term mobility issues. Immediate treatment helps to restore normal function more quickly, ensuring the dog can return to its usual activities with minimal disruption.

Functional Technique(FT) complements Osteopathic Articular Balancing (OAB) by focusing on the dog's muscles and tendons to improve their flexibility and range of motion. This helps to support the aligned joints and ensures that the dog maintains proper posture and movement patterns during recovery. Together, Osteopathic Articular Balancing (OAB) and the Functional Technique (FT) provide a comprehensive approach to restoring the dog's overall function and well-being.

Joint mobilization is important to allow balancing and letting the muscles relax to a neutral position, as well as getting the afferent and efferent signals to communicate correctly. The process of joint mobilization involves gentle, controlled movements that aim to improve the range of motion and reduce pain in the affected joint. The practitioner begins by assessing the joint's current state and identifying areas of stiffness and restriction. Next, they apply specific techniques, such as oscillatory motions or sustained stretches, to gradually loosen the joint and surrounding tissues, promoting better circulation and enhancing nerve function.

Utilizing the indirect method or strain counter strain is very helpful as it allows the muscles to release and find a neutral position based on proper afferent efferent signaling. Finding the position of ease and holding until that particular joint or muscle release helps the brain and body connection based on proper afferent efferent function. Once that is released the practitioner

can go just to the barrier come back to the point of ease and then hold until that releases. This allows the practitioner to achieve a state of normal balance and function in the dog without creating additional tension or unnecessary signaling in the body.

Osteopathic Articular Balancing (OAB) of the joints will allow grounding and strain counter strain will also let the dog return to neutral. During the vestibular episode, the muscles tense up to try and find balance, but because the signaling is incorrect it creates nausea and dizziness which puts greater strain on muscles and joints as they can't find balance and tend to tense up to create some semblance of stability in the body. Also not being able to balance or see in a predatory animal engages the reptilian brain with flight or flight and that creates a big cortisol rush which adds to the inflammatory response and muscle tension and inflammation it's a bad cycle which if stopped or mitigated sooner than later allows the body to find balance without long-lasting side effects as the patterns haven't been set in stone.

How Using these techniques should help dogs recover more quickly and possibly eliminate a permanent head tilt.

Idiopathic Vestibular Disease (IVD), also known as "old dog vestibular syndrome," in dogs, can cause head tilt because it affects the middle and inner ear, which are responsible for balance. The head tilt is caused by a loss of anti-gravity muscle tone on one side of the neck, resulting in the head rotating abnormally along the median plane⁶ This usually causes one ear to be held lower than the other, and the head is typically tilted towards the side of the lesion.

6 Vestibular Disease in Dogs - Symptoms & How It's Treated | Tucson Emergency Vet. (n.d.). www.vscot.com.

In addition, it causes the muscles to tense up or spasm as the body is trying to find balance but is unable due to the incorrect signaling caused by the vestibular episode.

By using Osteopathic Articular Balancing (OAB) and Functional Technique (FT) early on, the head tilt should hopefully be reduced or eliminated due to the following:

Improved circulation and lymphatic drainage:

Osteopathic techniques can enhance blood flow and lymphatic drainage, potentially reducing inflammation and promoting healing in the affected area of the vestibular system. By balancing the body, reducing inflammation, and draining the lymphatic system the afferent signals should stop sending erroneous messages to the brain and allow the muscles and nerves to calm so balance is restored to the body.

Balancing the nervous system:

Osteopathy aims to restore balance to the autonomic nervous system, which can be beneficial for dogs experiencing vestibular issues. This will help reduce symptoms like dizziness and improve overall neuro function.

Cranial manipulation:

Functional Technique (FT) and Osteopathic Articular Balancing (OAB) that involve gentle manipulation of the skull and cervical spine can influence the function of the vestibular system adjustments in these areas should allow the afferent and efferent signaling to find balance and restore the head to a neutral position. It may also help realign the crystals in the head so that normal perception is restored, thus improving balance and coordination.

If this is applied within twenty-four hours, it should have a very positive effect on the overall well-being of the dog.

Pain management and Musculoskeletal alignment:

Because the body is an ecosystem that is connected to itself, any changes will affect function and afferent and efferent signaling. This alteration can cause several issues in the body as muscles will tighten to try and maintain balance, which can cause discomfort and muscle tension, which will affect movement and can take the body out of its normal neutral posturing. This will almost, always put tension on the joints and lead to further discomfort and damage to the body. By addressing the musculoskeletal imbalances caused by Idiopathic Vestibular Disease (IVD) Osteopathic methods such as Functional Technique (FT) and Osteopathic Articular Balancing (OAB) can relieve compensatory pain and tension that dogs may develop due to their altered gait, dizziness, and head tilt.

Stress Reduction:

Vestibular episodes can be very distressing for dogs, and Osteopathic treatments often have a calming effect. Stress reduction can help improve the dog's overall well-being and lower cortisol levels which helps alleviate inflammation and should mitigate some of the symptoms.

How Osteopathy may help prevent vestibular disease in dogs

As stated, osteopathy helps the body find balance as a whole. Older dogs are more likely to become off balance due to issues such as arthritis; which can change gait and posture, Organs not being as efficient with digestion and function, Muscle changes waning and tightening, and

loss of muscle integrity All of these can lead to changes in the body that disrupt balance and flow. This can then lead to many issues, one of those being Idiopathic Vestibular Disease.

(IVD) Utilizing Osteopathy as a maintenance treatment to keep the body in its natural state of

balance and flow can prevent the triggers of vestibular disease and ideally reduce the number of incidents in dogs. If there is an incident, utilizing these techniques should hopefully lessen the length and severity as described in this thesis.

Summary of key points

There needs to be more research on this topic. It is quite common in older dogs, and it does cause a lot of discomfort and confusion for them. Some dogs will have a permanent head tilt, which could be lessened or eliminated by applying Osteopathic techniques i.e., Epley maneuvers as well as Osteopathic Articular Balancing (OAB) and Functional Techniques. Some vet hospitals incorporate the Epley Maneuver into their Vestibular protocol upon arrival with good results⁷. Ideally, more veterinarians and hospitals would apply these techniques for Idiopathic Vestibular Disease (IVD) and document them. It would also be helpful if there were more studies with canines who have had an episode of Idiopathic Vestibular Disease (IVD) to help support these methods and have osteopathic treatment become a standard protocol in animal hospitals and veterinary clinics.

7. *Vestibular Disease in Dogs* | *Animal Referral & Emergency Network*. (n.d.). [Www.emergencyvet.com.au](http://www.emergencyvet.com.au). Retrieved July 23, 2024, from <https://www.emergencyvet.com.au/for-vets-and-nurses/resource-centre/articles-for-referring-vets/treating-older-dogs-with-vestibular-disease.html#:~:text=At%20ARH%20our%20physiotherapist%2C%20Sally>

Although there have been limited studies examining the effectiveness of manual manipulation on dizziness, Osteopathic literature and the clinical experience of Osteopathic physicians suggest that Osteopathic Manual Medicine (OMM) is beneficial in alleviating vertigo, particularly when it is peripheral in nature.⁸

There have been other smaller studies that have produced favorable results utilizing Osteopathic Techniques specifically Functional Technique (FT) and Osteopathic Articular Balancing (OAB)⁹

In addition, utilizing the Osteopathic Articular Balancing (OAB) and the Functional Technique (FT) after the incident should help the dog have a shorter recovery time and help ensure that it is a full recovery to the same normal the dog had before the incident. Utilizing Osteopathy on a maintenance basis may prevent future idiopathic occurrences by keeping the dog in a balanced state. Since it is idiopathic the best defense is prevention and by maintaining the tenet of osteopathy this should at least create a well-balanced dog that is better equipt to handle any changes or disruption to their being.

8.. *The AAO JOURNAL JOURNAL Official Publication of the American Academy of Osteopathy* ® *Osteopathic manual medicine for vertigo: review of literature, case report, and future research.* (n.d.). Retrieved July 23, 2024, from

<https://www.academyofosteopathy.org/assets/aoaj/09JuneAAOJ.pdf>⁸<https://pubmed.ncbi.nlm.nih.gov/36220009/>

⁹*Osteopathic manipulative treatment in individuals with vertigo and somatic dysfunction: a randomized, controlled, comparative feasibility study*

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<https://www.vscot.com/site/blog/2021/09/15/vestibular-disease-in-dogs>

