

# The Symbiotic Partnership of Dentistry And Craniosacral Therapy (Part Two)

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## Introduction

This article is the concluding part of the exploration of the symbiotic partnership between the dental profession and craniosacral therapy. The first article of this series appeared in the Number 6 (June 1998) issue of ZMK and offered a brief introduction to the craniosacral system, craniosacral therapy, and its importance in the dental field.

In the previous issue of ZMK, it was discussed that the integration of craniosacral techniques by the dental professional can significantly enhance the effectiveness of existing modalities, increase the economic return in their practice, and benefit from greater patient satisfaction. The article discussed how cranial misalignments ("lesions") contribute to malocclusions, TMJ dysfunction, and a variety of dental mechanical disorders. It discussed the unique role of the dental professional and highlighted the ability of craniosacral therapy to assist the dentist in the diagnosis and treatment of these disorders.

This concluding article will focus on the evaluation and treatment of functional disorders such as sensory disturbances, headaches, neuralgias, endocrine dysfunction, and autonomic nervous system imbalances. It will explore the interrelationship of dentistry and craniosacral therapy and how the dental professional holds a unique and crucial role in the approach to these conditions.

Dental anatomy and function powerfully influence the health of the individual. Malocclusions, temporomandibular joint dysfunctions, and cranial imbalances reach far beyond the masticatory system. This is the reason patients often report to their dentist a myriad of "non-dental" symptoms that accompany their dental disorder. The dentist, dental assistant, or craniosacral therapist working in conjunction with the dentist can address many of these conditions utilizing craniosacral therapy. They are often able to treat the "root causes" of conditions, often overlooked by other specializations.

Dentistry, the craniosacral system, and functional systems of the body are profoundly intertwined in an "elegant ecology." To present a discussion of one without discussing the other's influences would be an artificial separation of these topics. Any change in dental anatomy and mechanics will have a significant influence on the craniosacral system and other functional systems in the body. Any craniosacral lesion, or correction of that lesion, effects dental anatomy and mechanics and the body's functional systems.

This "elegant ecology" exists throughout the body, affecting anatomy and function. Its influence is so extensive that it is difficult to imagine any part of the body that is not affected. Let's look at some of these relationships.

The sphenoid bone is considered the central bone of the craniosacral system. Because of its unique and complex anatomy, it articulates with almost every other bone in the cranium. We can imagine the sphenoid being like a central cog in a wristwatch. If that central cog is out of balance, we would imagine that it can effect the balance of all of the other cogs in the watch, or in this case, all of the other cranial bones in the head.

The craniosacral system produces cerebrospinal fluid (CSF) in the choroid plexus in the brain's ventricles. This fluid is rhythmically produced and resorbed approximately eight to ten times each minute. When the CSF is produced, it creates a pressure that wasn't there a moment before. This pressure creates a predictable movement of the cranial bones. When the CSF is resorbed via the arachnoid villi into the venous sinuses, the pressure is reduced and the cranial bones return to their original position.

As the CSF is produced and resorbed, it creates a motion of "flexing" and "extending" in the angle between the body of the sphenoid and the occipital base. This is why we call the production (filling) phase "flexion", and the resorption (draining) phase "extension."

The sphenoid comes into intimate contact with the hard palate via its pterygoid processes abutting the palatine bones. If the sphenoid is out of alignment in anyway, it will directly affect the anatomy of the

hard palate. This in turn will influence the position of the upper teeth, the individual's occlusion, and the function of the temporomandibular joint.

Located between the pterygoid processes of the sphenoid and the palatine bones are the sphenopalatine ganglia. The sphenopalatine ganglia innervate the lining of the nose, sinuses, and nasopharynx. If the sphenopalatine ganglia are hyperstimulated because of improper pressures of the hard palate and the sphenoid, it can result in rhinitis and rhinorrhea. It can also increase an individual's susceptibility to air born allergens by the hypersensitivity of these affected mucous membranes.

The maxillary branch of the Trigeminal nerve (CN V) innervates the sphenopalatine ganglia. As such, the sphenopalatine ganglia play an important role in migraine headaches due to its sensory influence of the Trigeminal nerve.

Just as any lesion of the sphenoid will affect the hard palate, any change in the anatomy of the hard palate will profoundly affect the sphenoid. We can see how important it can be to normalize the cranial structure with the use of dental and craniosacral modalities.

Located directly on the sphenoid is the pituitary gland. It sits on the sphenoid in a formation that looks like a "Turkish saddle." In fact, the Latin name for that structure is called the "*sellae tursica*." The pituitary exerts profound influence over the endocrine system and, as such, directly influences the body's physiology and health.

If the sphenoid is out of position ("lesioned") due to misalignment of the hard palate, pituitary function will suffer, and the body's physiological systems will be affected. The pituitary depends on the normal alignment of the cranial bones for its proper functioning.

The pituitary is located outside of the brain because it needs to operate in a cooler environment than the brain has to offer. One of the ways that the body helps "cool" the pituitary is the gentle rocking motion of the sphenoid provided by the craniosacral rhythm. This rocking motion ("flexion" and "extension") helps to pump the hot blood away from the pituitary. Any cranial misalignment interferes with this motion, causing the pituitary to heat beyond its optimal physiological range. Even a slight temperature increase of the pituitary will result in diminished pituitary function.

If you've ever felt "out of sorts," you may have splashed cool water on your forehead. This instinctual behavior wasn't to cool your forehead. Rather it was to help cool the pituitary and restore a sense of well being.

A "faulted" or "lesioned" sphenoid caused by misaligned dental anatomy can result in a myriad of physiological and behavioral symptoms. Facial asymmetry, cranial pain, and sensory disorders may be indications of cranial imbalance.

Often an individual will unconsciously attempt self-corrective measures. It is important to notice if a child keeps having accidents involving hitting their heads or if the child is involved in head banging, particularly if the same part of the head is hit each time. This may be the child's attempt to self-correct a cranial lesion. Even bruxism in adults may be an attempt to remedy cranial misalignment.

Craniosacral balance and TMJ function was discussed in the prior article. Of significant interest is the role that TMJ function has in cranial pain, sensory dysfunctions, emotions, and autonomic nervous system balance.

TMJ disorders are a major contributor to head pain. Because of its intricate anatomy, myriad of related structures, and sensory innervation of the Trigeminal nerve, any dysfunction of the temporomandibular joint can create pain throughout much of the head.

The lateral pterygoid muscles directly influence the movement of the mandible and the interarticular joint discs. Hypertonicity of the lateral pterygoids not only affects the anatomy and function of the TMJ, but also directly influences the anatomy and functioning of the important sphenoid bone.

The lateral pterygoid muscles connect the TMJ to the pterygoid processes of the sphenoid. So, any imbalance of the TMJ affecting the lateral pterygoid muscles will pull the sphenoid out of position and

affect its motion and functioning.

This "faulting" of the sphenoid can result in visual disturbances because the sphenoid is a major structural feature of the orbits. Also, cranial nerves affecting visual acuity and eye movement travel through or above the sphenoid bone. Moreover, all but one of the muscles that control the movement of the eye are attached to the sphenoid.

When the condyloid process of the mandible is forced up into the temporal bone due to a "tight jaw," the temporal bones are forced into rotation. The temporal bones contain the mechanisms for hearing and balance, and these functions can be seriously impaired if these bones are out of proper alignment.

There are many ways that a "tight jaw" perpetuates its condition without the aid of a trained practitioner. For example, when muscles contract and go into spasms, insufficient blood reaches the muscles. This can cause an anaerobic condition and a build-up of lactic acid and toxins. This discomfort results not only in the muscles going into further contraction, but also produces throbbing or continual pains in the muscles, joints, teeth, and other areas of the head and neck.

Located slightly anterior to the temporomandibular joint is an autonomic nerve plexus call the Reticular Activating System. Imbalance of the temporomandibular joint can produce a constant hyperstimulation of this autonomic system, resulting in the patient experiencing a pervasive sense of "fight or flight." It is like leaning on a fire alarm 24 hour a day. This can affect not only the patient's emotions, but their endocrine and other physiological systems as well. If the patient clenches their jaw and / or grinds their teeth during sleep, they may wake up more fatigued than they had been when they went to bed due to the constant firing of the sympathetic nerve fibers.

A complex pattern of cranial and cervical nerves provides sensory and motor pathways in the head. Motor and sensory disturbances can accrue when the functional anatomy associated with these nerves is out of balance ("lesioned").

Cranial nerves of particular interest in dentistry include cranial nerves 5, 7, 9, 10, 11, and 12.

Craniosacral therapy (CST) serves to balance the bones and related soft tissue of the craniosacral system. In balancing these structures of the cranium, cranial nerve function is optimized and many disorders of cranial nerve origin are corrected. Many of these cranial nerves and related disorders are directly involved in the field of dentistry. Disorders of cranial nerves (particularly CN V, CN VII and CN IX) can refer pain to the TMJ and related structures.

The fifth cranial nerve, known as the Trigeminal nerve, is the largest of the twelve-paired cranial nerves. It supplies motor fibers to the masticatory muscles and sensory input from the face, mouth, and much of the head. Disorders of the Trigeminal nerve are often the reason a patient will seek the help of their dental professional. Trigeminal nerve pain radiation can often confuse the diagnosis whether a pain is coming directly from a tooth or is a referred pain.

Branches of the Trigeminal nerve can be compressed and / or entrapped, creating excruciating head and facial pain in the patient. This condition is referred to as "Tic Douloureux." This entrapment can be caused by disturbance of the dural membranes enveloping the gasserian ganglion, or caused by articular strain of the temporal and sphenoid cranial bones. This condition can often be successfully resolved utilizing craniosacral therapy, particularly if treated soon after the onset of symptoms.

The seventh cranial nerve is known as the "Facial nerve." This nerve provides much of the motor fibers to the muscles of facial expression and the buccinator muscle. When there is irritation or entrapment of this nerve, there is often a pattern on one side of the face that can include the mouth drooping, impaired chewing due to a weak buccinator muscle, and loss of the sense of taste to the anterior two-thirds of the tongue. This condition is referred to as Bell's Palsy. Cranial lesions, particularly of the temporal bones, can be a significant factor in the pressure exerted on the Facial nerve. Utilization of craniosacral therapy by the dental professional or craniosacral therapist can often successfully treat this condition.

Just as the fifth cranial nerve can become entrapped creating debilitating pain, so can the ninth cranial nerve (the Glossopharyngeal nerve). This entrapment manifests as severe pain in the middle ear,

mastoid air cells, tongue, and / or pharyngeal wall. This condition can be successfully addressed with the utilization of craniosacral techniques.

These two articles examining the symbiotic partnership of dentistry and craniosacral therapy have discussed a broad spectrum of topics. Even more can be written on how these two disciplines are intertwined in the evaluation and treatment of other dental mechanical disorders, treatment of chronic and acute cranial pain, sensory disturbances, TMJ function, occlusal balance, post-traumatic injury, tongue mechanics, nerve entrapment and irritation, swallowing, and speech disorders. The disciplines of dentistry and craniosacral therapy not only support each other; they are dependent on each other.

Dentists have a unique role in health care. The work that they do goes far beyond the mandible and maxillae and has ramifications throughout the patient's entire system. Craniosacral therapy enhances the dentist's ability to have this profound influence.

The utilization of craniosacral techniques assures a more holistic approach in dental care. Craniosacral therapy provides benefits before, during, and following dental procedures. And, whether performed by the dentist, the dental assistant, or a craniosacral therapist working in conjunction with the dentist, this approach will significantly enhance treatment results, economic returns, and patient satisfaction.

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