

## Neurological Causes of Subluxations

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Chiropractic has always stated that altered spinal alignment could affect the functioning of the nervous system. Such a misalignment, called a subluxation, adversely alters the health of the individual. Despite thoughts to the contrary, support for this premise can be found in the literature. Quite simply, the literature shows that the ramifications of spinal misalignments can be divided into two types: 1) musculoskeletal degeneration; 2) organ dysfunction.

Exactly how subluxations cause such ramifications, especially organ dysfunction, has often been debated. In years past, the pinched nerve theory was accepted by most DCs. With time, and increased knowledge, this has changed. While it is true that a spinal misalignment can compress a nerve, research has now proven that this is not what typically causes the above-mentioned ramifications. Instead, we know now that spinal misalignments cause an alteration to the vertebral and soft tissue structures surrounding the spine. They also alter the proprioceptive impulses that travel from these structures to the spinal cord and brain. It is these alterations, not nerve compression, that most often lead to the above-mentioned ramifications.

The purpose of this article is not to discuss these ramifications in great detail. More can and should be learned about the physiology involved by reading the works of Korr, Breig, Lantz, Kirkaldy-Willis, Sato, Harrison, and Slosberg.

### Causes of Spinal Misalignments

Understanding the adverse effects of spinal misalignments helps to highlight the necessity of a healing art discipline that focuses on the detection and correction of such misalignments. Chiropractic of course is that discipline. However before we can attempt to correct spinal misalignments, we must be able to identify what causes them.

How exactly does a spine become misaligned? Obviously there are many potential causes. Some of the causes, such as trauma, obesity, and improper biomechanics, present themselves into our offices on a daily basis. However there are some other causes that I believe that we as a profession are overlooking.

A study of how overall postural spinal alignment is determined can be found in any physiology text. How the spine is aligned, or misaligned, is a result of several postural reflexes that exist within the body. These reflexes are controlled by the central nervous system, especially the brain stem and cerebellum. Of paramount importance to us are the factors that influence how the brain stem and cerebellum determine this alignment. A study of the physiology behind the postural mechanism reveals that there are primarily three factors involved: 1) upper cervical proprioceptors; 2) visual proprioceptors; 3) vestibular proprioceptors.

Each of these three areas are constantly sending the brain stem sensory information with regard to

their position. The brain stem then utilizes this information to determine overall body alignment. Improper or altered information from any of these three areas of proprioception may lead to altered spinal alignment. Altered spinal alignment, as we've already stated, can adversely affect one's health.

As chiropractors, our primary focus is to correct spinal misalignments. We accomplish this primarily through delivering spinal adjustments that are aimed at correcting vertebral subluxations. Appropriately administered spinal adjustments provide a powerful means for eliminating improper joint proprioception. However, have we truly done our job if the subluxation returns as soon as the patient leaves our office? That is, what if the subluxation returns because it is being caused by a disturbance to the visual and or vestibular systems?

### Correcting the Cause

If we hope to truly influence an individual's spinal alignment, we must be aware of the influence of visual and vestibular proprioceptors. This does not imply that we must become eye and ear doctors, but we should learn to ask our patients, especially those who are not progressing, questions that relate to visual and or vestibular involvement. We should also strive to develop clinical tests that would confirm or rule out visual and or vestibular involvement.

Chiropractors are already influencing visual and or vestibular proprioceptors, usually without being aware of it. Any chiropractor that incorporates cranial work into their treatments will at times be affecting these proprioceptors. More common is to see chiropractors incorporate head rotation into their analysis and the adjustment. Head rotation, whether we realize it or not, affects vestibular and cervical proprioceptors.

Other chiropractors are purposely taking advantage of the visual proprioceptors in their practice. Regardless of chiropractic technique used, many DCs are now incorporating specific eye movements into their administration of PNF stretching procedures<sup>1</sup> as described by Lewit, while other doctors that are familiar with applied kinesiology are utilizing the "eyes into distortion technique."<sup>2</sup>

It has been my experience that most chiropractors will eagerly experiment with new ideas in their practice, especially if the ideas are safe and physiologically sound. For example, utilizing your present technique, evaluate a patient with their eyes focused to the right, then to the left; next with their head rotated to the right, then left. Do these movements have any affect on your findings?

I have already incorporated some specific procedure into my practice and have experienced encouraging results, especially in the treatment of patients with functional neurological disorders such as scoliosis, dystonias, and learning disabilities. I am interested in any results that you may experience. Please forward your comments and suggestions.

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### References

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2. Walther D: Applied Kinesiology -- Synopsis. Systems DC, Pueblo Colorado, 43-45, 1988.

JANUARY 1994