

Brain and Empire: Chiropractic and Correction of Nerve Interference

Charles Masarsky, DC, FICC

Author's Note: For a public conditioned to think of us as back-crackers, a relationship between the adjustment and the brain seems a distant one. However, thoughtful DCs can think of several mechanisms by which the adjustment may benefit the brain, including improved cerebrospinal fluid flow, relief from dural torque or tension, and normalization of sympathetic tone to the cranial arterial supply. The following article focuses on another relationship between the adjustment and the brain - one so obvious that it usually escapes our attention. Please feel free to use it as a bulletin-board display, front-desk flyer or lay lecture handout.

Rome was once the most important and irreplaceable city in the ancient Mediterranean world. In those times, "All roads led to Rome." The roads leading to and from Rome were vital not only for the movement of goods and people, but also for the flow of information. Maintaining efficient flow of information to and from the city required that the roads be kept as clear as possible.

If this flow of information were disrupted, nothing would be visibly amiss at first. An observer with a bird's eye view of Rome would not see the buildings collapsing or the city burning. However, orders from the capitol would not always reach officers in the field in an efficient manner. Reports from provincial governors would not always reach the emperor in a timely and accurate way. The emperor would make increasingly ill-informed decisions. The tone of life in the empire would become subtly disturbed; the city would not be completely at ease. If this situation continued for long, portions of the empire, possibly including Rome itself, would eventually develop visible signs of deterioration. In short, when things were not well with the roads, things were not well with the empire.

Your brain is the most important and irreplaceable organ in your body. All nerves lead to the brain. Efficient movement of information to and from the brain requires that the nerves be kept as clear as possible. If this flow of information is disrupted, nothing may be visibly amiss with the brain at first. An MRI of the brain would show no obvious pathology. However, orders from the brain will not always reach the muscles and organs in an efficient manner. Reports from sensors in those muscle and organs will not always reach the brain in a timely and accurate way. The brain will make increasingly ill-informed decisions. The tone of the body's organs and muscles will become subtly disturbed; the brain will not be completely at ease. The biomedical term for this situation is *dysponesis*.¹ If this situation continues for long, portions of the body, possibly including the brain itself, could develop noticeable clinical problems.

Doctors of chiropractic search for misalignments or restrictions of the joints that can disturb nerve function (subluxation). To the average person, the most familiar manifestation of subluxation is pain. Pain and related signals can **disturb the functions** of those portions of the brain responsible for alertness and emotional states.² Another familiar manifestation of subluxation is disturbance of muscle tone. This can be due to disruption of muscle-control signals from the brain or disturbed feedback of information to the brain from sensors in the joints, muscles, tendons and ligaments.³⁻⁴

Less familiar to most people is the growing body of evidence on the effects of subluxation on brain-related functions such as reaction time and such brain-related disorders as learning disabilities.⁵⁻¹² When the connection between the nerves and the brain becomes clear, the possibility of such brain-related subluxation effects comes as no surprise. In short, when things are not well with the nerves, things are not well with the brain. Chiropractic adjustments assist the body in correcting subluxation - an important and common source of nerve interference.

References

1. The definition of "dysponesis" is: "A reversible physiopathologic state consisting of unnoticed, misdirected neurophysiologic reactions to various agents (environmental events, bodily sensations, emotions and thoughts) and the repercussions of these reactions throughout the organism." These errors in energy expenditure, which are capable of producing functional disorders, consist mainly in covert errors in action-potential output from the motor and premotor areas of the cortex and the consequences of that output. Friel JP, Ed. *Dorland's Illustrated Medical Dictionary: 28th Edition*. Philadelphia: W.B. Saunders, 1994.
2. This happens due to the influence of a neurological circuit known as the "paleospinothalamic tract" on portions of the brain known as the "ascending reticular activating system" (located primarily in the pons and medulla oblongata) and the "limbic system" (incorporating subcortical portions of the cerebrum as well as portions of the hypothalamus and other midbrain structures). From Cramer GD, Darby SA, Eds. *Basic and Clinical Anatomy of the Spine, Spinal Cord, and ANS*. St. Louis: Mosby, 1995. See also: Liebman M. *Neuroanatomy Made Easy and Understandable*. Gaithersburg, Md.: Aspen Publishers, 1991, and Purves D, Augustine GJ, Fitzpatrick D, et al., *Neuroscience*. Sunderland, Mass.: Sinauer Associates, 2001.
3. This happens via the "corticospinal tract." See Reference #2.
4. Via the "dorsal column-medial lemniscal system," the "dorsal spinocerebellar tract," the "ventral spinocerebellar tract" and the "cuneocerebellar tract". All of the above relay proprioceptive information to the cerebellum, except for the dorsal column-medial lemniscal system, which relays proprioceptive information to the parietal lobe of the cerebrum. See Reference #2.
5. Smith DL, Dainoff JM, Smith JP. *The effect of chiropractic adjustments on movement time: a pilot study using Fitts' law*. *JMPT*, 2006;29:257-66.
6. Lersa LB, Stinear CM, Lersa RA. *The relationship between spinal dysfunction and reaction time measures*. *JMPT*, 2005;28:502-7.
7. Kelly DD, Murphy BA, Backhouse DP. *Use of a mental rotation reaction-time paradigm to measure the effects of upper cervical adjustments on cortical processing: a pilot study*. *JMPT*, 2000;23:246-51.
8. Giesen JM, Center DB, Leach RA. *An Evaluation of Chiropractic Manipulation as a Treatment of Hyperactivity in Children*. *JMPT*, 1989;12:353-63.
9. Arme J. *Effects of biomechanical insult correction on attention deficit disorder*. *J Chiropr Case Reports*, 1993;1:6-9.
10. Araghi HJ. *Oral apraxia: a case study in chiropractic management*. *Proceedings of the National Conference on Chiropractic and Pediatrics (ICA)*, 1994:34-41.
11. Lovett L, Blum CL *Behavioral and learning changes secondary to chiropractic care to reduce subluxations in a child with attention deficit hyperactivity disorder: a case study*. *J Vertebral Subluxation Research*, Oct. 4, 2006:1-6.
12. Pauli Y. *Improvement in attention in patients undergoing network spinal analysis: a case series using objective measures of attention*. *J Vertebral Subluxation Research*, August 2007:1-9.

