CHIROPRACTIC & HEALTH

A Natural Connection

November 2021

Chiropractic Spinal Adjustments Improve Sensory and Motor Function

Haavik and Murphy. (2007) Cervical spine manipulation alters sensorimotor integration: A somatosensory evoked potential study. Clinical Neurophysiology 118 391-402

QUOTE BOARD:

"This study suggests that cervical spine manipulation may alter cortical somatosensory processing and sensorimotor integration. These findings may help to elucidate the mechanisms responsible for the effective relief of pain and restoration of functional ability documented following spinal manipulation treatment."

"The parietal N20 SEP [somatosensory evoked potentials] component, generated in the primary somatosensory cortex (S1) was significantly decreased during all post-manipulation blocks, both when measured from P14 to N20 and when measured from N20 to N27. This suggests that S1 [sensorimotor cortex] processing was reduced post manipulation."

"The observations in the present study suggest that spinal manipulation of dysfunctional joints may modify transmission in neuronal circuitries not only at a spinal level as indicated by previous research, but at a cortical level, and possibly also deeper brain structures such as the basal ganglia."

Key Concepts:

"The current study supports previous work that suggest muscle afferents (probably Ia) [muscle spindle proprioceptors/movement receptors] are the most likely mediators of the central neural effects of spinal manipulation."

To simplify and summarize. Dysfunctional joints that have lost proper motion and/or alignment send deficient and/or altered sensory signals (proprioception) to the brain which makes it impossible for the brain to properly recruit muscles and coordinate movement. This altered sensory input can, by itself, result in both pain and improper control and coordination of movement making the performance of required activities of daily living painful and/or restricted.

Chiropractic adjustments/manipulations of dysfunctional joints results in proper sensory information (proprioception) reaching the brain areas (sensorimotor cortex) in charge of muscle recruitment and coordinated movement thus restoring the function of the sensorimotor system via improved sensorimotor integration (processing and coordinating responses to sensory information) and improved muscle recruitment and coordination of movement.

Key Take Home Points:

Chiropractic adjustments/manipulations restore motion and/or alignment, restore healthy nerve flow (and blood flow), restore proper muscle recruitment and coordinated movement, resolve pain, and restore the ability to comfortably perform activities of daily living.

Why are chiropractic adjustments/manipulations so effective and so beneficial? Because motion determines sensory input, sensory input determines brain perception and thus pain, control of joints and muscles, and coordinated movements, and chiropractic adjustments/manipulations restore motion!