

Chiropractic Spinal Manipulation Alters TMS Induced I-Wave Excitability and Shortens the Cortical Silent Period

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Spinal manipulation has been well-documented to decrease pain and improve the functional abilities related to many musculoskeletal disorders through a multi-layer mechanism of action.

Several published studies have examined the effects of altered afferent input due to spinal joint dysfunction. This study from *JEK* has taken that research one step farther and examines the sensorimotor effects of spinal manipulation. The results indicate a shortening of the TMS-induced cortical silent period and an increase in I-wave amplitude after spinal manipulation; which can result in increased strength.

The potential clinical implications of this research are astounding. Strengthening is a critical component of everything from rehabilitation to sport-specific performance enhancement. Applying this knowledge through a combination of passive and active care has helped our office achieve fantastic results for our patients suffering from musculoskeletal issues.

“...chiropractic manipulation significantly increased the amplitude of the first I-wave. Finally, the CSP (cortical silent period) duration was significantly reduced after spinal manipulation in the lower limb muscle.”

“The changes observed in the I-waves and CSP duration in this study provide evidence that spinal manipulation can result in a significant increase in the excitability of the motor pathways to low threshold motor units of human tibialis anterior muscle.”

“These findings may have important clinical implications as they provide support that spinal manipulation can be used to strengthen muscles.”

