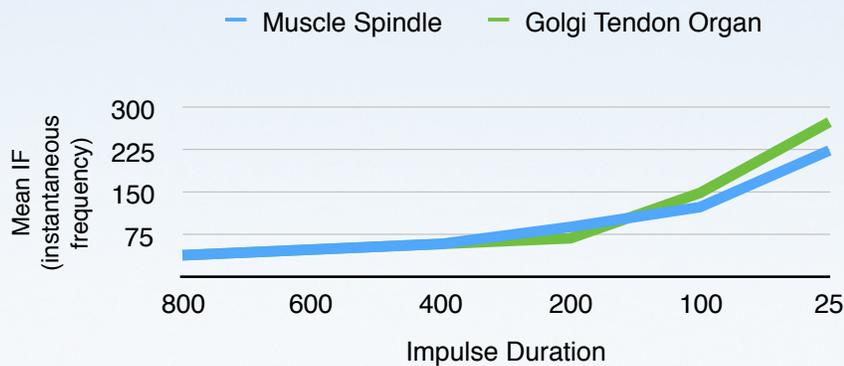


Effect of Spinal Manipulation Duration on Low Threshold Mechanoreceptors in Lumbar Paraspinal Muscles

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“Effect of identical loading magnitude (33% body weight) on the pattern of muscle spindle and Golgi tendon organ activity as the duration of the manipulation shortens.”

Spinal manipulation, a hallmark of chiropractic care, has been proven to provide significant pain relief and functional improvement for an array of spine-related complaints. Research has shown that the manipulation has a multi-factorial impact including stimulation of the central nervous system and gapping of the z-joints.

This paper found the load time, or impulse duration, of a manipulation produces a unique activation response on the muscle spindle and Golgi tendon organ. This unique activation is thought to contribute to the therapeutic effect.

Our office utilizes a variety of manipulation and soft-tissue techniques to obtain the best results for our patients.

“...in addition to our preliminary finding that spinal manipulation atypically activated a Group III afferent; spinal manipulation also evoked high-frequency discharge in both muscle spindle and GTO afferents.”

“...4 of the 6 afferents were clearly muscle proprioceptors being readily classified as muscle spindles or GTO’s. In a previous study, Pickar and Wheeler showed that muscle spindle and GTO afferents innervating the lumbar multifidus and longissimus muscles respond more to the 200-millisecond impulse load of a spinal manipulation than to the resting state or preload preceding the impulse.”

“In addition, spinal manipulation both increases the excitability of motor pathways in the spinal cord and depresses the inflow of sensory information from muscle spindles assessed using transcranial motor-evoked potentials and the H-reflex, respectively.”

We believe in creating a healthier community. We believe patients have better outcomes when physicians work together. Let’s build a healthier tomorrow.