

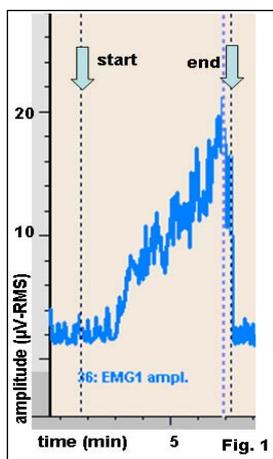
Sustained Manual Loading of the Fascial System Can Evoke Tonic Reactions: Preliminary Results

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INTRODUCTION: The physiological mechanisms influenced or activated by manual therapies are poorly understood. However, a myofascial release technique called *Muscle Repositioning* (“MR”) appears to evoke both mechanical and neural reactions. A previously published study sets forth the recorded increase in tonic activity of the cervical erectors during MR maneuvers in the occipital region [1]. This study investigated possible increases in tonic muscular activity during an MR maneuver in the thoracic region.

METHODS: Fourteen healthy adults aged 34.21 ± 10.24 yrs had their right cervical and lumbar erectors monitored by surface electromyography. (Nexus 10, Mind Media B.V., Netherlands). From a side-lying position, each subject received two MR maneuvers administered to the right side of the thorax from an experienced practitioner. The maneuvers delivered a particular set of forces, which characteristically produce a visually evident integration of body segments, causing them to appear unified as a single block (see videos at www.musclerepositioning.blogspot.com). Each maneuver continued until the practitioner felt a tissue release (a tactually perceptible sliding of internal soft parts relative to one another). The duration of the maneuvers were registered.



RESULTS: The first maneuver lasted 14.75 ± 5.22 min, and the second 7.63 ± 3.35 min. Thirteen subjects showed increased cervical erector activity, 11 during both maneuvers and 2 during only the second maneuver. Such activity was more pronounced and ensued more quickly during the second maneuver. Seven subjects also showed increased lumbar activity, which in six of them was synchronous with the increased cervical activity. Characteristically, the muscular reactions became progressively stronger (fig 1. illustrates the recording of one subject), as did the degree of apparent segmental integration. Both the muscular reactions and the segmental integration often peaked at or near the conclusion of the maneuver -i.e., upon tissue release - and dropped thereafter.

CONCLUSION: These observations support the possibility that specific and sustained manual input can systematically evoke tonic reflexes. Perhaps forces applied tense the fascial system creating afferences which produce such reflexes, which seem to further tense the fascias, evoking an even stronger muscle reaction. In a positive feedback loop, this muscle reaction advances up to the point of tissue release. The physiologic significance of these recorded phenomena remains unknown, but taken together with observations from MR clinical practice, they are reminiscent of *pandiculation* –the instinctual soft tissue stretching common in animals, apparently associated with musculoskeletal health. Perhaps this technique induces the body’s own mechanisms of self-organization. If so, as the outcomes of MR clinical practice also suggest, MR would have therapeutic utility. Moreover, the ability to monitor physiological responses in real time may bring objectivity to MR and other manual techniques.

¹ Bertolucci, L.F. 2008. Muscle Repositioning: “A new verifiable approach to neuro-myofascial release?” *Journal of Bodywork and Movement Therapies* 12, 213–224.