Immediate effects of myofascial induction of quadratus lumborum in postural orientation of standing asymptomatic subjects

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BACKGROUND Standing represents a challenging posture that requires upright orientation of body segments[1]. The thoracolumbar fascia (TLF), a complex network of fascial layers that establishes a direct relationship with several trunk muscles[2], might be a privileged structure to influence standing posture, either by the direct transmission of forces to the muscle fibers[2,3], influencing its tension, either by the inputs to the central nervous system, ultimately influencing body schema and motor control. Therefore, this study aimed at analysing the immediate effects of a myofascial induction technique over TLF on the postural orientation of asymptomatic standing subjects.

METHODS Participants, aged between 30 and 60 years old, were randomly assigned to a placebo (PG) or an intervention (MIG) group using covariate adaptive randomization; all consent their participation, according to the Declaration of Helsinki. MIG intervention consisted on myofascial induction of quadratus lumborum II described by Pilat (2003)[4], whereas PG intervention consisted on a placebo handling similar to MIG intervention but without pressure. Upright orientation was assessed before and after intervention using infrared motion capture (6 Oqus cameras, Qualisys Motion Capture Systems); were analyzed, in the sagittal plane: angles of the cervical, thoracic and lumbar spine; pelvis alignment; and the verticality of tragus and acromion in relation to the lateral malleolus. Data extraction and analysis were performed using Qualisys Track Manager software.

RESULTS Sixteen participants, 6 males (M) and 10 females (F), were divided into PG (3M, 4F; 35±11.00 years old) and MIG (3M, 6F, 35±18.0 years old). Statistically significant differences (p=0.01) were found for the thoracic alignment, for which participants from MIG showed a gain of a few degrees of extension (3.2±3.09º), whereas PG showed lesser variation (-0.6±1.18º). Despite no statistically significant differences were observed for the remaining analyzed variables, their overall descriptive analysis was suggestive of a tendency for a greater vertical orientation of MIG participants.

CONCLUSION Myofascial induction of quadratus lumborum II may have an immediate influence in postural orientation of asymptomatic standing subjects by increasing body verticality; nevertheless, the
results found deserve further research. This finding highlights for the possibility of including fascial system-related approaches in the intervention of individuals with altered postural control.

REFERENCES