Correlation between Hydration and Fascia Stiffness during a Self-help Treatment with a Myofascial Manipulation Tool: A Bioimpedance Controlled, Clinical Trial.

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INTRODUCTION: A tool assisted tissue manipulation was performed on the quadriceps and the tensor faciae latae muscle of the thigh in form of a self-help treatment. The aim of this study was to explore the correlation between hydration, stiffness and elasticity and to assess the effectivity of this self-help modality.

METHODS: 30 young men performed a self-help treatment with the fascia tool Fascia-Releazer (myofascial release tool combined with a vibrational oscillation) on the right thigh for eight minutes. Both thighs were assessed before and after the intervention. The not-treated left thigh served as measurement control. Position, posture and treatment protocol were standardized. The objective parameters stiffness, elasticity (MyotonPRO) and hydration (BIA 101 Anniversary SE) were measured. Hydration is described in the parameters resistance, reactance and phase angle and gives information about the total hydration index. Statistical analysis included the paired t-test, Wilcoxon signed rank test, Cohen’s d-test and Anova tests.

RESULTS: In all parameters there was a significant change pre to post of the treated thigh. A high significant decrease (p<0.001) in stiffness and a significant increase of elasticity (p<0.001) was observed post-intervention. The local temperature of the treated muscles increased significantly (p<0.001). Bio impedance scores indicated a hydration of the treated leg. A highly significant increase (p<0.001) of the total hydration index was found and there was a significant correlation between stiffness reduction and total hydration of the tissue.

CONCLUSIONS: Application of self-help treatment with this myofascial manipulation tool resulted in clinically highly significant improvements in the objective bio-mechanical tissues and hydration properties.

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