

Abstract

Title: The effect of different kinds of instant fascial release techniques for improvement of range of motion and muscle stiffness

Objectives: This research aims to critically evaluate the effectiveness of immediate fascial release techniques such as tissue flossing (TF) and foam rolling (FR), on range of motion (ROM), viscoelastic properties of the muscle, dynamic stabilization and jump performance among athletes and fitness enthusiasts.

Methodology: Cross-over design of the study, where all participants underwent three types of conditioning: tissue flossing, foam rolling or control. The study used a comprehensive methodology that included an active knee extension test, a Y-balance test, jump performance was measured using force plates and viscoelastic properties of Biceps Femoris (BF), Rectus Femoris (RF) and Vastus Lateralis (VL) of both legs were used to assess the impact of TF and FR conditionings. Participants were measured before conditioning and respectively in 2nd and 15th minute after conditioning activity. Two-way repeated measures ANOVA was used to evaluate the data.

Results: Tissue flossing and foam rolling significantly improved ROM in both legs when compared to the control group, however no significant differences occurred between any of the conditions. Jump height experienced a significant drop post-intervention in the FR group, while no changes were observed for TF and the control group. Braking Rate of Force Development showed significant improvement in the TF group when compared pre and post max value. Dynamic stability improved significantly in both legs for the TF group and in the left leg for the FR group, with no changes observed in the control group. ANOVA analysis revealed no significant differences between the interventions in measurements of viscoelastic properties, and none of the interventions showed significant improvements when compared to the control condition. However, TF had significantly decreased muscle stiffness in right VL, both RF whereas FR significantly decreased muscle stiffness and muscle tone in all muscles.