

The Influence of Self-Myofascial Release on Countermovement Jump Force-Time Variables in Pre-Elite Academy Rugby Union Players

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Abstract

Objectives: The aim of this study was to examine the influence of a 20 min lower-body self-myofascial release (SMFR) protocol on countermovement jump (CMJ) performance and CMJ force-time variables in pre-elite Rugby Union players, and to assess if differences exist between groups; forwards vs. backs.

Design: Pre-elite male Rugby Union academy players (n=20) volunteered for the study and were categorized as forwards (FWD) or backs (BK). Testing occurred in a sequenced mixed design involving TEST (repeated; Control vs. SMFR) and GROUP (FWD vs. BK).

Methods: Irrespective of player position, all subjects completed baseline assessments consisting of dynamic warm-up (DYN) and 6 CMJs, followed by 20 min complete rest, then 10 min lower-body SMFR protocol, and subsequent DYN and CMJ re-test. Participants performed the SMFR exercises to 9 various sites over the lower extremities on both sides of the body. The data from the best 3 jumps relative to jump height were averaged and used for analysis.

Results: The SMFR had no significant effect on CMJ height for GROUP ($p=0.139$). Significant differences in concentric force were found for GROUP ($p=0.004$) and TEST ($p=0.04$). For eccentric rate of force development (RFD) there was a significant effect for TEST ($p=0.008$). For concentric impulse there was a significant difference for GROUP ($p=0.016$).

Conclusion: The SMFR protocol combined with DYN affected CMJ force-time variables positively without deteriorating jump height in pre-elite academy Rugby Union players. Strength and conditioning coaches can prescribe SMFR with DYN prior to training and competition in Rugby Union to enhance force production capabilities in dynamic multi-joint movements without negatively affecting an individual performance.