THE EFFECTS OF A 6-WEEK OF PLYOMETRIC TRAINING ON ELECTROMYOGRAPHY CHANGES AND PERFORMANCE

Abstract

The purpose of this study was to compare the effects of depth jump (DJ) and countermovement jump (CMJ) training on sand on electromyography (EMG) changes and performance in healthy subjects. Twenty-seven male collegiate students participated in this study and randomly divided into three groups: DJ, CMJ and control group (CG). Subjects in the DJ and CMJ groups performed 5 sets of 20 repetition jumps from a 45-cm box onto a 20-cm dry sand two days a week for 6 weeks. The EMG activities in the vastus medialis (VM), rectus femoris (RF) and vastus lateralis (VL) muscles, vertical jump (VJ) and 20-m sprint time were assessed pre and post training. The results showed significant increases in the EMG activities (IEMG) for the VM and RF following DJ and CMJ training on sand and compared with control group (P < 0.05). The DJ and CMJ groups showed significant improvement than control group in the VL muscle activities, and no statistically significant differences were found among groups (P > 0.05). The DJ and CMJ training on sand led to significant improvement in VJ and decreases in 20-m sprint time (P < 0.05). In conclusion, the DJ and CMJ training on sand improved EMG activities, power, and sprint performance and it is recommended that, coaches design plyometrics on sand for athletes or individuals, because these types of training on sand can be effective for increasing performance.

Key words: stretch shortening cycle, intense plyometric, motor unit, performance