THE EFFECT OF LUMBAR-SUPPORTING WEIGHT BELTS ON THE ELECTROMYOGRAPHIC ACTIVITY AND FATIGABILITY OF THE ERECTOR SPINAE MUSCLES DURING MULTIPLE REPETITIONS OF THE CONVENTIONAL STYLE DEADLIFT

Eash PE, Brandenburg J, Macfarlane PA, Pitney WA: Northern Illinois University, DeKalb, Illinois

Past research has been conflicting as to whether a weight belt alters the activity of the erector spinae while performing weighted lifts. Also, very little research has examined the effects of wearing a weight belt on lumbar muscle fatigue over multiple repetitions of a lifting exercise. The purpose of this study was to determine whether or not a lumbar supporting weight belt was effective at changing the activity the erector spinae muscle while performing multiple repetitions of the conventional style dead lift. Ten healthy college-age men with weightlifting experience were recruited to volunteer in the study. Participants performed two sets of eight repetitions of conventional style dead lifts at 70% of their predicted one repetition maximum (1-RM). One set was performed while wearing a weight belt (BELT) and one set was performed without a weight belt (NO BELT). Mean electromyography (mEMG) and maximum (maxEMG) electromyography of the iliocostalis lumborum and longissimus thoracis were measured for both conditions and compared to a maximum voluntary isometric contraction (MVIC). The results showed no significant difference in mEMG or maxEMG between the Belt and No Belt conditions for either muscle tested. No differences in mean or maximum electrical activity were found between the first three and last three repetitions for either muscle in either condition. Analysis also showed no significant difference in mEMG or maxEMG between conditions as the number of repetitions increased. This data shows that wearing a weight belt while performing multiple repetitions of the conventional style dead lift has no effect on erector spinae activity or fatigability while performing eight repetitions at 70% of 1-RM.