

Manual Therapy and Muscle Activation During External Rotation

Abstract

Many collegiate athletes experience a wide range of shoulder injuries that can be the result of weakness in muscle activity in the shoulder joint. The purpose of this study was to examine the effects of pre-exercise manual therapy treatment on infraspinatus activation during external rotation. One collegiate athlete (22 yrs) with a history of a shoulder injury participated in this case study. The participant performed a maximal voluntary isometric contraction (MVIC) by externally rotating against an immovable storage closet at maximal strength. Following MVIC, the participant completed three repetitions of external rotation prior to manual therapy by lying on their side with the elbow secured against the hip. External rotation was then performed while holding a five-pound dumbbell. Following screening by a manual therapist, the participant completed three more repetitions of external rotation. Surface electromyography and software were utilized to assess infraspinatus activation during external rotation. Root mean square values were normalized to the MVIC for infraspinatus activity in each trial. A match paired *t*-test compared infraspinatus activation with and without treatment. No significant difference was found in external rotation before and after treatment. This data suggests manual therapy may not be an effective treatment to increase strength and stability in the shoulder to protect or recover from injury.