

ACUTE EFFECTS OF MUSCLE ENERGY TECHNIQUE AND JOINT MOBILIZATION ON SHOULDER TIGHTNESS IN YOUTH THROWING ATHLETES: A RANDOMIZED CONTROLLED TRIAL

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ABSTRACT

Background: Posterior shoulder tightness (PST), defined as limited glenohumeral (GH) horizontal adduction and internal rotation motion, is a common occurrence in overhead athletes, particularly baseball and softball players, as a result of the extreme forces on the GH joint and the high number of throwing repetitions. Despite clinical evidence suggesting the use of joint mobilizations and muscle energy techniques (MET) for treating PST, there currently are no data examining the overall effectiveness of joint mobilizations and MET to determine optimal treatment for posterior shoulder tightness.

Purpose: To compare the acute effectiveness of MET and joint mobilizations for reducing posterior shoulder tightness, as measured by passive GH horizontal adduction and internal rotation ROM, among high school baseball and softball players.

Study Design: Randomized controlled study

Methods: Forty-two asymptomatic high school baseball and softball players were randomly assigned to one of three groups (14 MET, 14 joint mobilization, 14 control). Glenohumeral passive adduction and internal rotation ROM were measured in all participants in a pre-test post-test fashion. Between testing, the joint mobilization group received one application of GH posterior joint mobilizations. The MET group received one cycle of MET applied to the GH horizontal abductors. The control group received no intervention. Posttests measures were completed immediately following intervention or a similar amount of time resting for the control group and then again 15 minutes later.

Results: One-way analyses of covariance showed that the MET group had significantly more horizontal adduction ROM post-treatment compared to the control group ($p=0.04$). No significant differences existed between groups in horizontal adduction ($p>0.16$) or internal rotation ($p>.28$) or at the 15-minute posttests ($p>0.70$).

Conclusion: The results of this study indicate the application of MET to the horizontal abductors provides acute improvements to GH horizontal adduction ROM in high school baseball and softball players, while joint mobilizations provide no improvements.

Level of Evidence: 1

Keywords: Baseball, glenohumeral joint, manual therapy, softball.

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