

The Acute Effects of Mechanical Percussion on Posterior Shoulder Flexibility and Range of Motion

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Introduction: Impaired shoulder range of motion (ROM) and flexibility can impact normal muscle function, sports performance, pain levels, and decreased patient reported outcomes. Posterior shoulder tightness has been linked to these types of limitations. Mechanical percussion can be applied to the posterior shoulder muscles to increase motion and flexibility.

Purpose: To determine if mechanical percussion to the posterior rotator cuff musculature for durations of 30-seconds, or 60-seconds, will immediately improve shoulder ROM and flexibility. The study hypothesis is that mechanical percussion to the posterior shoulder for 60- seconds would improve shoulder ROM and flexibility more than percussion for 30-seconds.

Method: Fifty-one, healthy, 18–35-year-old participants (22 males; 29 females) were divided into two experimental groups; Group 1 received 30-seconds of treatment and Group 2 received 60-seconds of treatment. Each group had one experimental shoulder and one control shoulder. ROM of bilateral shoulders were measured using a digital goniometer prior to treatment. Only the experimental shoulder received the mechanical percussion intervention. Following intervention, bilateral shoulder ROM was taken again. An alpha level of $p=0.05$ was used to define statistical difference.

Results: There was no statistically significant difference in ROM within groups before and after mechanical percussion was applied with horizontal adduction ($p=.322$), external rotation ($p=.451$), or internal rotation ($p=.942$). Because some subjects reported a “looseness” after treatment, the percussion therapy may invoke a placebo effect on certain individuals; however, even in those individuals the results did not demonstrate an increased ROM.

Conclusion: While percussive therapy may have other benefits, the present study was unable to find a significant increase in shoulder ROM or flexibility after the mechanical percussion intervention was applied to the posterior rotator cuff at either 30-seconds or 60-seconds.