

# **Comparison of Chiropractic Manipulation Therapy and Functional Movement-Based Myofascial Release in Shoulder Range of Motion of Collegiate Athletes: A Pilot Study**

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**Background:** Shoulder pain is the third most common presentation of musculoskeletal pain in the clinic with a lifetime prevalence of up to 70%. In athletes, shoulder dysfunction is often due to the extreme forces experienced by the joint during sport participation. Studies have shown that a deficit of 5 degrees in total arc of motion, 20 degrees in internal rotation, and 15 degrees in horizontal adduction can increase an athlete's chances of injury by a factor of four.

**Methods:** Student athletes with shoulder pain and decreased range of motion (ROM) in their dominant arm were separated into cohorts and received twelve therapy sessions. One cohort received chiropractic manipulation (CM) and the other received functional movement-based myofascial release (FMMR) with CM. ROM of the shoulder was measured during the first, sixth, and last sessions using goniometry and video capture. Cohorts were compared using statistical analyses on data collected.

**Results:** A total of four participants have completed at least the first six sessions of participation in study. Initial results show there is no statistical difference in improvement in shoulder ROM between cohorts. Student T-tests comparing cohorts' improvements in six of the seven specific ROM tests resulted in no statistical significance ( $p$ -values  $\leq 0.05$ ). The two participants that completed all twelve intended therapy sessions showed evidence of positive trajectory for increased ROM and qualitatively expressed improvement in shoulder motion.

**Conclusion:** This study shows that there was no statistically significant difference in treating athletes with CM versus FMMR combined with CM. This can mainly be attributed to the study's current size ( $n=4$ ). Even with the small participant size, and lack of statistical significance several trends of the individual range of motion measurements provide questions that would benefit from the continuation of the study towards the full cohort participation.