

Does Self-Myofascial Release Improve Torque and Work on Internal and

External Shoulder Rotation in Bowlers??

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Introduction

Self-myofascial release (SMR) is a common technique used to prepare and loosen activated muscle tissue prior to work outs and competitions. This technique has been shown to increase blood flow, but little research has been done on its effect of upper extremities. The purpose was to determine if SMR increases shoulder rotational torque in collegiate bowlers.

Methodology

15 (10 females/5 males) college and high school athletes (age = 19.8 + 1.9 yrs; height = 170.69 + 12.2 cm.; body mass = 65.41 + 13.7 kg) participated in this study. This was a one group pre/post-test design to determine torque and work during internal and external shoulder rotation on their dominant side using an isokinetic dynamometer (ISKD) (Biodex Medical System, Shirley, NY, USA) set at 120 degrees/second. Starting in a standing position, each subject was coached to perform 6 maximal repetitions, rest for 10 seconds, and perform 1 final maximal effort repetition. A Fortress Knuckle Physio Complete Body Dynamics pocket device was placed on the teres minor for 2 minutes, using a 60 BPM cadence while maintaining a Pain Rating Scale of 7/10. Afterwards, each subject performed the exact same assessment on the ISKD to determine if any differences existed between pre and posttest scores. A one-tailed dependent t-test was performed on SPSS (version 29). Cohen's d effect sizes determined the strength of the relationship between pre- and post-test values. .

Results

Descriptive statistics for all dependent variables are listed in Table 1. Statistical significance (p < 0.05) was observed for internal torque (p = 0.011), external torque (p = 0.047) as well as internal rotator work (p = 0.004) and external rotator work (p = 0.007). A large effect size was observed for internal rotator work (d = -0.82) and external rotator work (d = -0.76) while negative medium effect sizes were observed for internal rotator (d = -0.66) and external rotator torque (d = -0.46).

Self-myofascial release (SMR) has become a popular form of therapy to reduce pain and improve mobility. This investigation demonstrated competitive bowlers could benefit from SMR during match play to improve rotational force production if consistent bowling biomechanics and lane conditions are conducive towards these acute physiological improvements.

Table 1: Descriptive statistics for pre- and post-test measures of torque and work for internal and external rotation.

Pre - Post Internal Rotation					
Variable(s)	N	Mean	SD	p value	Cohen's d
Torque (ft·lbs)	15	26.66 – 31.07	±13.3 – ±13.4	*0.011	-.66
Work (joules)	15	15.80 – 21.20	±9.6 – ±10.9	‡0.004	-.82
Pre - Post External Rotation					
Variable(s)	N	Mean	SD	p value	Cohen's d
Torque (ft·lbs)	15	15.50 – 17.10	±7.30 – ±6.70	*0.047	-.46
Work (joules)	15	9.30 – 10.90	±4.20 – ±4.0	‡0.007	-.76

*(significance at p ≤ 0.05); ‡(significant at p ≤ 0.01)

Conclusions

Internal and external rotation torque as well as internal and external rotation work scores were significant from pre- to post-test after completing a 2-minute SMR intervention targeting the Teres Minor on the dominant side of collegiate and high school bowlers.



Selected References

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