The Effect of Sport-Specific Resistance Training on Athletic Performance Outcomes of College Rodeo Athletes

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Introduction

Resistance training yields significant improvements to athletic performance outcomes among multiple sports. A sport-specific approach for resistance produces greater adaptation and transfer to various sports. However, few studies have examined the potential benefit of sport-specific resistance training for the sport of rodeo.

Purpose Statement

The aim of the current investigation was to assess the effect of sport-specific resistance training on athletic performance outcomes of rodeo athletes.

Method

Seventeen college rodeo athletes (12 females; 5 males) participated in an 8-week, 3-days per week, sport-specific resistance training program- and Post-testing was administered to assess effect of sport specific training program.

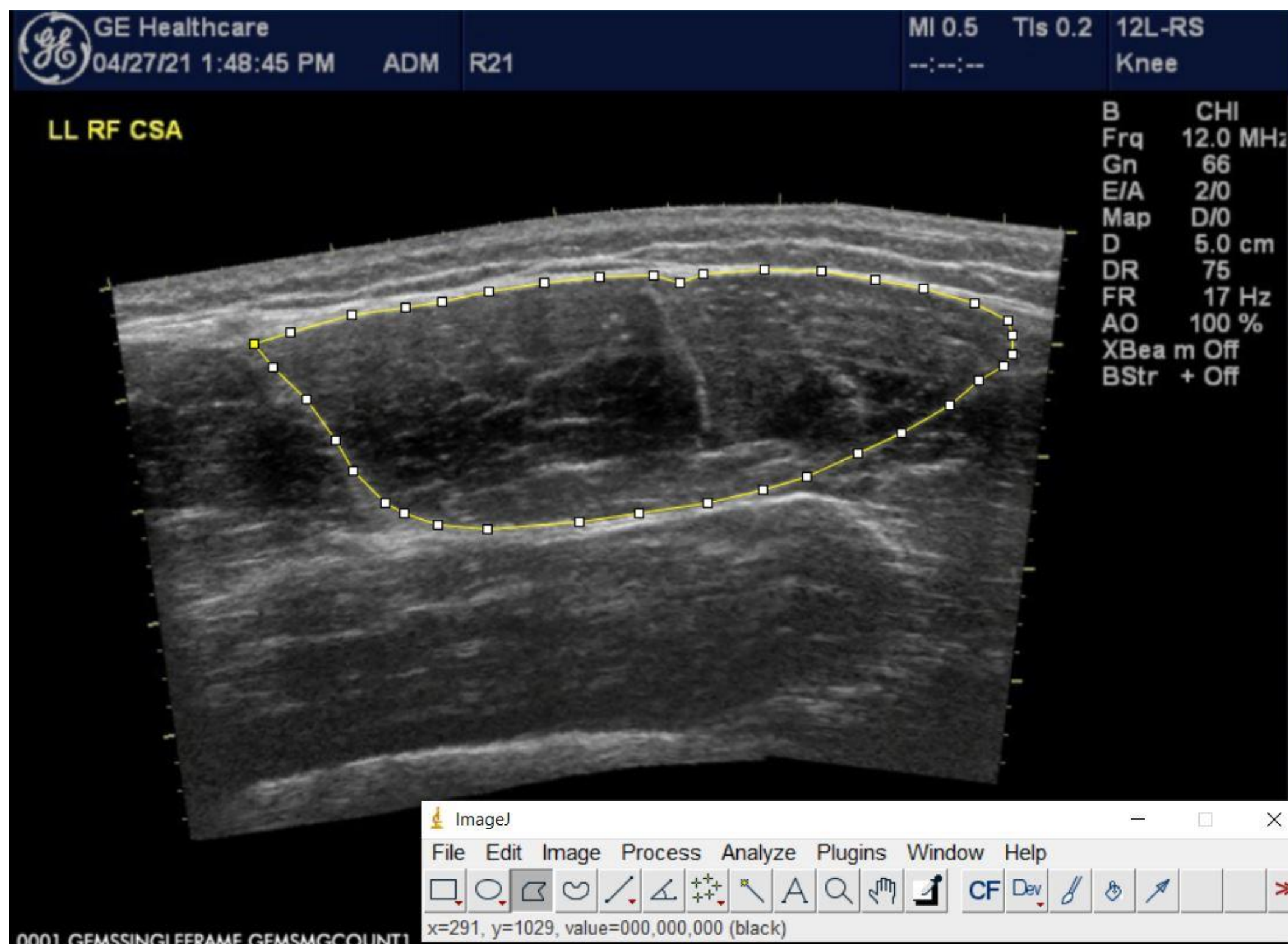### Pre- and Post-Testing Procedures

Sessions 1:
- Muscle Cross Sectional Area (CSA) utilizing b-mode ultrasonography.
- Mid Thigh Pull utilizing a bar with a load cell attached.
- Body Composition (Height, Weight, Body Fat)

Session 2:
- 1 RM: Squat (SQ), Bench Press (BP), and Deadlift (DL).
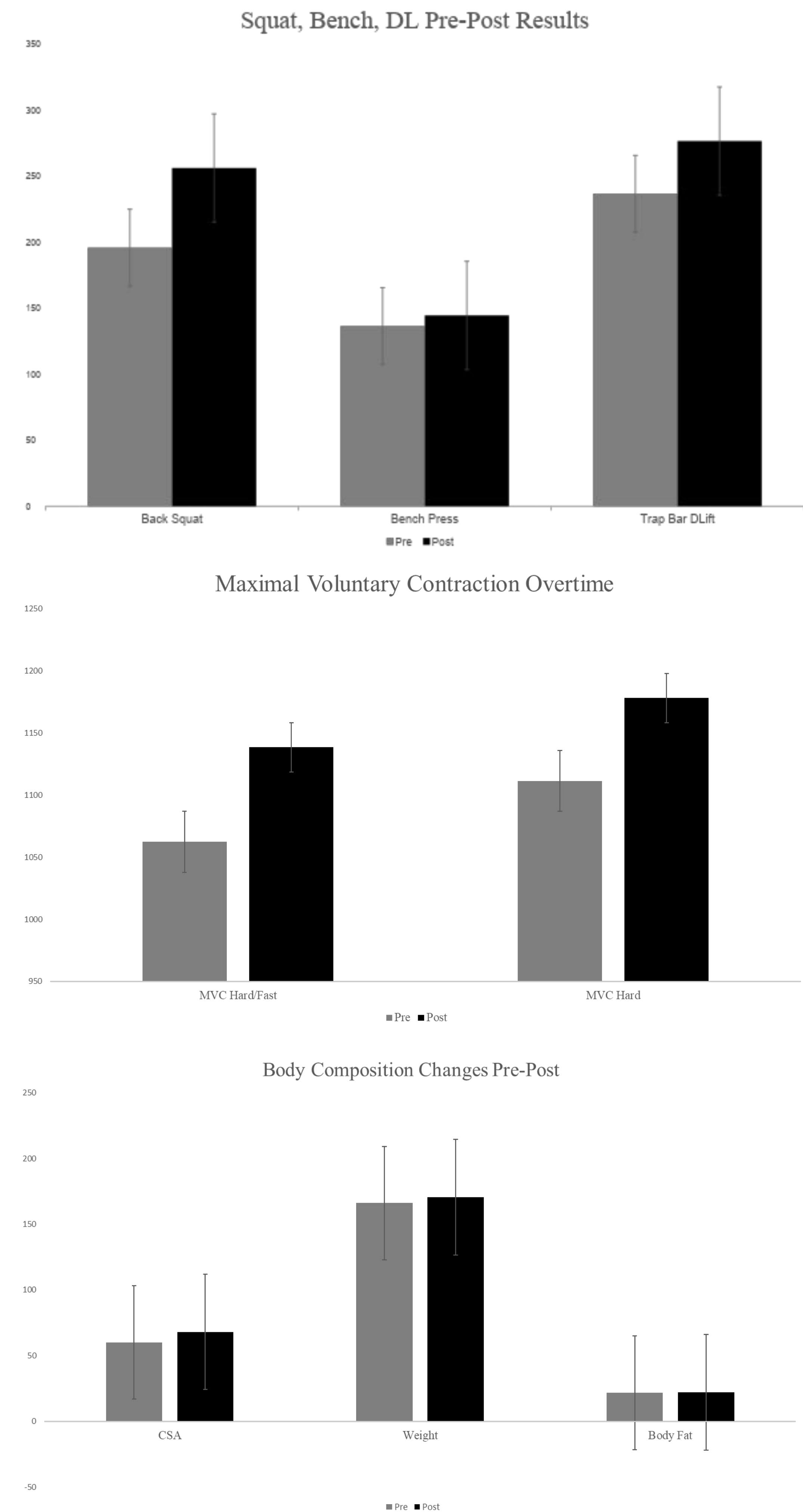
Statistical Analysis

A paired sample t-test ($p < .05$) was employed to assess differences between pre- and post-test of athletic performance outcomes.

Results

Analysis of data indicated significant differences between:
- SQ (r = .952, p < .001, Pre=198.83±87.28, Post=256.25±104.14),
- BP (r = .985, p = .046, Pre= 136.58±70.3, Post= 144.58±69.36),
- DL (r = .937, p = .005, Pre=236.25±113.059, Post=276.66±114.22).
- CSA (r = .581, p = .046, Pre= 60.17±6.73, Post=72.19±8.69)

Results Cont.

Squat, Bench, DL Pre-Post Results

Maximal Voluntary Contraction Overtime

Body Composition Changes Pre-Post

Discussion

Comparison of pre- and post-test data indicated that an 8-week rodeo-specific resistance exercise program elicited improvements in 1RM and overall muscle quality. While there was no significant difference in MVC, a practical increase was indicated between pre- (1062.35 ± 468.15 N/m) and post-test (1138.49 ± 329.24 N/m). These results suggest a sports-specific resistance training approach should be employed to improve the athletic performance and potential competition performance of rodeo athletes.

References

Aagaard, P., Neurophysiology, D., Simonsen, E., C, A., Andersen, J., Centre, C., Suetta, C. (2002, October 01). Increased rate of force development and neural drive of human skeletal muscle following resistance training

Fukumoto, Y., Ikezoe, T., Yamada, Y., Tsukagoshi, R., Nakamura, M., Mori, N., . . . Ichihashi, N. (2011, August 17). Skeletal muscle quality assessed from echo intensity is associated with muscle strength of middle-aged and elderly persons. Retrieved May 05, 2021,

JUDGE, L., MOREAU, C., & BURKE, J. (2003). Neural adaptations WITH SPORT-SPECIFIC resistance training in highly skilled athletes. *Journal of Sports Sciences, 21*(5), 419-427.