

## Performance Differences in High Intensity Training Participants

W. TYLER McHENRY, ROBYN H. WHITEHEAD, BRODY W. SIZEMORE, VICTOR K. MORTEZAZADEH, and MALCOLM T. WHITEHEAD

Human Performance Lab; Kinesiology & Health Science; Stephen F. Austin State University; Nacogdoches, TX

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*Advisor / Mentor: Whitehead, Malcolm T. (whitehead@sfasu.edu)*

### ABSTRACT

High intensity training has become increasingly popular over the last 20 years with the advent of well-known training regimens such as P90X™, CrossFit™, Beachbody™, PiYo™, and Camp Gladiator™. As such, it is important to understand the differences among individuals who participate in high intensity training. **PURPOSE:** The purpose of this research was to examine differences in Functional Movement Screen (FMS) scores, strength, power, and dynamic exercise in a cohort of male and female high intensity trained athletes (HIT). **METHODS:** A total of thirty participants (males, n=15; and females, n=15) (mean  $\pm$  SD; age =  $30.7 \pm 9.9$  years) with minimum two-years of HIT experience were recruited to participate in this study. On the first day of data collection each subject provided informed consent and then participated in a height and weight measurement, body composition measurement (7-site skinfold), FMS screening, and 1-Repetition Maximal (1-RM) lifts for deadlift (DL), shoulder press (SP), and power clean (PC). A minimum of 5 days later each subject performed a standardized test of dynamic exercise (DE) that involved performing as many repetitions as possible of 5 pullups, 10 pushups, and 15 unloaded squats in 20 minutes. Mann-Whitney U tests were performed to compare differences between the males and females for FMS scores and ANOVA was used to determine differences between the males and females for all other variables with  $p \leq 0.05$  for all analysis. **RESULTS:** Results of the Mann-Whitney tests comparing FMS scores between males and females indicated that the females had higher straight leg raise (SLR) scores (2.9 vs. 2.1,  $p = 0.001$ ) and sum of all scores (FMSSUM) (16.9 vs. 15.4,  $p = 0.045$ ) than the males. Results of the ANOVA indicated that the males demonstrated greater muscular strength per kilogram of body weight on the DL (1.99 vs. 1.65 kg/kgBW,  $p = 0.007$ ) and the SP (0.833 vs. 0.513 kg/kgBW,  $p < 0.001$ ) exercises. Results of the ANOVA also indicated that the males demonstrated greater muscular power per kilogram of body weight on the PC (1.146 vs. 0.766,  $p < 0.001$ ) exercise. There was no statistically significant difference between groups for DE. **CONCLUSION:** The findings of this study support the need for a greater emphasis on mobility training, specifically the hips, for males that participate in high intensity training. Performance differences were shown between the genders for maximal muscular strength and power but not for dynamic exercise. These results indicate that these differences should be considered when designing training programs for maximal muscular strength and power training but same sport athletes of different gender could participate in the same dynamic exercise programming.