RECOVERY METHODOLOGIES AND HIGH INTENSITY FUNCTIONAL TRAINING

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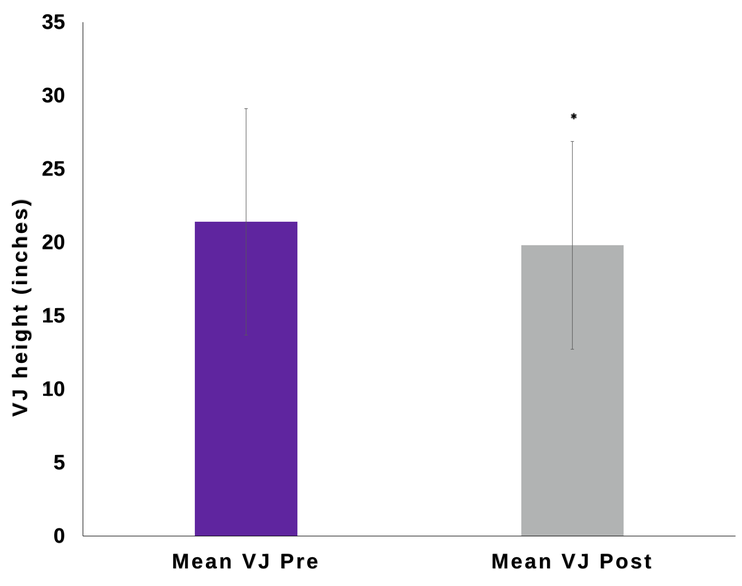
Purpose: As the implementation of frequent high intensity functional training (HIFT) participation continues to grow among a variety of individuals, recovery between bouts of training is important to consider to prevent overtraining. As with any mode of exercise adequate recovery periods are necessary to elicit optimal adaptation to exercise. Therefore, individuals who participant in HIFT understanding day-to-day recovery from this type of training could unlock potential benefits for those who desire specific outcomes from this training. The purpose of this study was to determine effective measures of recovery following an acute HIFT training session.

Methods: Participants (22.0 ± 2.8 years age, 79.9 ± 13.9 kg, 170.8 ± 10.9 cm and 26.2 ± 8.24% body fat) consisted of 5 females and 3 males (n = 8), who were recreationally trained (30+ minutes moderate-vigorous exercise 4+ times/week) and had previous experience with HIFT training. Participants completed a 20-minute, as many rounds as possible (AMRAP) exercise session that included 11/13 cal row, 12 repetitions of 95/135 lb deadlift, 10 burpees over the barbell, and 8 repetitions of 35/53 lb kettlebell. Data was collected prior to the exercise session and recovery was monitored for 30-minutes immediately post- and at 24-hours post-exercise. Before exercise and 24-hours post-exercise heart rate (HR), heart rate variability (HRV), vertical jump (VJ), upper body power (UBP), perceptual measures (PM) of recovery/exertion, and Altman Self-Rating Mania Scale (ASMR) were recorded. During exercise, heart rate, rating of perceived exertion, and the number of rounds completed were recorded. Data were evaluated using a Paired Samples T-test and Wilcoxon Signed-Ranks Test with significance set at $p \leq 0.05$ for all analysis.

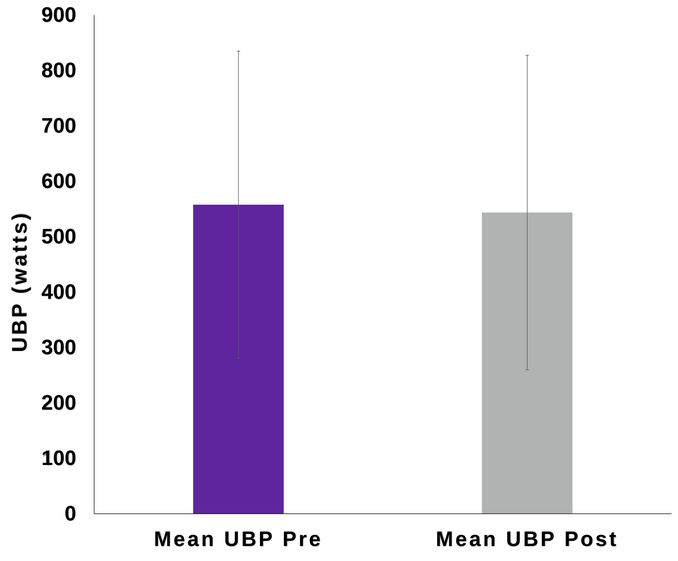
Results: Paired samples T-tests did not indicate significant differences between pre- and post-exercise in HR, HRV, and UBP but did denote significant differences between pre- and post-exercise in VJ (21.4 ± 7.7 vs 19.9 ± 7.1 inches) and See Figures 1 and 2. Wilcoxon-Signed Ranks Tests did not demonstrate significant differences in PM or ASMR.

Figure 1. Mean VJ Pre and Post Exercise



***indicates significant difference from pre-exercise values.**

Figure 2. Mean UBP Pre and Post Exercise



Conclusions: The primary limitation of this research is the small sample size. Based on our data PM, ASMR, HR, HRV, and UBP were not sensitive to change from pre-to post-exercise from an acute HIFT session in this small cohort. However, VJ was the only measures that demonstrated pre- to post-exercise differences and as a result this measurement appears to be a parameter that is sensitive to detecting fatigue induced from an acute bout of HIFT. Future research is necessary to determine non-invasive levels of recovery from HIFT.

Practical Applications: Based on our data VJ was the only measure that demonstrated pre- to post-exercise differences and as a result these measurements appear to be parameters that are sensitive to detecting fatigue induced from an acute bout of HIFT. These results support the assertion that the utilization of VJ to assess lower body power is sufficiently discriminating to the physiological changes that occur as the result an acute bout of HIFT. The measurement of VJ is a relatively simple and non-invasive method to determine recovery that can easily be integrated into a training regimen.

References

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