A Comparison of Cryotherapy and Heat Therapy and Their Effect on Muscle Recovery Following Exercise
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**Context:** Optimizing recovery during training is beneficial for performing successive bouts of training or competition over a season without associated fatigue or overtraining. The inability to repeat high level of performance in the days following intense training is frequently attributed to peripheral fatigue involving metabolite accumulation and muscle damage. Thus, various techniques have been suggested to accelerate the clearance of muscular damage or metabolite accumulations and optimize recovery. Cold water immersion (CWI) and warm water immersion (WWI) are two modalities commonly used to enhance recovery. However, at this time their efficacy is not fully understood and comparisons between the two have not been investigated. **Objective:** To examine and compare the effects of CWI and WWI on recovery following a single bout of intense exercise. **Design:** A randomized and counterbalanced single-blind cross-over design. **Setting:** Athletic training facility. **Participants:** Twelve healthy recreationally active males and females (age=19.6±1.4 years, height=171.9±13.2 cm, mass=72.5±3.1 kg) who did not suffer from any contraindication to CWI or WWI. **Interventions:** Each participant reported to the facility for three sessions separated by a period of at least one week. At each session, the participants completed a drop jump protocol consisting of 100 drop jumps (5 sets of 20) while wearing a weighted vest equivalent to 10% of the body mass. The participants dropped off a 0.61-m platform with both legs and performed a maximal vertical jump in place immediately upon landing. A 10-s rest was provided between jumps and a 2-min rest between sets. Immediately following exercise, the participants completed one of three treatment conditions, CWI, WWI or control. The CWI and WWI conditions consisted of immersion in 10°C and 43°C water respectively to the level of the iliac crests for 20-min. The control condition consisted of seated recovery with no modality for 20-min. **Main Outcome Measures:** General muscle soreness using a visual analogue scale (VAS), maximum vertical jump height (Vert\text{max}) and Yo-Yo intermittent recovery test (Yo-Yo IR1) performance were assessed immediately prior to and 24-h following the bout of exercise. **Results:** The two-factor mixed analysis of variance (ANOVA) revealed a significant Test main effect (F\text{1,12}=36.91, p=.001) for VAS, as the rating was greater at posttest (18.97±18.67 mm) as compared to pretest (1.31±2.26 mm). The treatment had no effect however, as a significant Condition x Test interaction (F\text{2,24}=.758, p=.479), was not observed. Likewise, the treatment had no effect on Vert\text{max} and Yo-Yo IR1, as a significant Condition x Test interactions were not observed (F\text{2,24}=.587, p=.564 and F\text{2,24}=.318, p=.731). **Conclusions:** Neither CWI or WWI improved recovery 24-h following a single bout of the drop jump protocol. Future studies might investigate a more intense and sport specific bout of exertion requiring recovery and assess the effectiveness of these treatments on them. **Word Count:** 450.