EFFECTS OF COLD, HOT, AND CONTRAST WHIRLPOOLS ON PAIN, SWELLING, AND FUNCTION FOLLOWING DELAYED ONSET MUSCLE SORENESS.

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**Context:** Cold, hot and contrast therapy (CT) is purported to reduce pain, swelling and hasten recovery following athletic injuries. Unfortunately, little evidence exists to substantiate this widely held clinical belief. **Objective:** To evaluate the effects of cold, hot, and contrast whirlpools on pain, swelling and function following delayed onset muscle soreness (DOMS). **Design:** Randomized clinical trial, repeated measures design. **Settings:** Research Laboratory. **Patients or Other Participants:** Twenty-four college students, (age= 20±1.2 yrs., height= 169.7±9.4cm, weight= 72.6±11.6 kg) volunteered for this study. **Interventions:** DOMS was induced in both lower legs by a series of repeated concentric and eccentric calf raises. Self-reported pain and function was assessed by a series of 4 visual analog scales. Linear measurement of the calf and ankle, and limb volume utilizing a customized tank system were used to assess changes in swelling. Function was determined by a unilateral hop for distance. Pre and Post treatment measurements were taken daily over a period of 5 days. One limb of each subject was randomly assigned to one of three treatment interventions 1) Cold whirlpools at 55ºF for twenty minutes, 2) hot whirlpools at 100ºF for twenty minutes, 3) CT was delivered by alternating a hot whirlpool for 4 minutes followed by a cold whirlpool for 1 minute. This cycle was repeated four times for a total of 20 minutes. The other limb served as a control. The independent variable was treatment with three levels (cold, hot and CT whirlpools). We analyzed the self reported pain and athletic function, swelling, and function data with multiple repeated measures ANOVAs. Significance level was set at .05 a priori. **Main Outcome Measures:** Self reported pain and athletic function, limb volume, and function as measured by unilateral hopping. **Results:** Indicated that treatment did not significantly reduce self report pain (Warm 17.6±11.8mm, Cold 17.4±16.3mm, Contrast 8.3±11.2mm, Control limbs 16±15.5mm P=.833) or improve self-reported athletic function (Warm 20.9±14.7mm, Cold 18.1±12.9mm, Contrast 9.1±11.6mm, Control 16.6±13.3mm P=.595), decrease limb volume (Warm 1145.0±221.5mL, Cold 1221.3±170.6mL, Contrast 1061.9±71.3mL, Control 1147.9±174.0mL P=.227) or increase hop distance (Warm 21.4±13.5, Cold 14.7±11.3, Contrast 8.0±9.9cm, Control 17.2±19.9 P=.516) as compared to similarly injured control limbs at the conclusion of the 5 day experiment. **Conclusion:** Our results indicate that daily cold, hot, or contrast whirlpools following DOMS did not affect self reported pain and function, limb volume or functional performance, therefore questioning the clinical efficacy of these treatments. **Word Count:** 392.