TACSM Abstract

Effects of Pre-workout Caffeine Supplementation on Post-Exercise Hypotension

EMILY E. LATTA, SHELBY L. GIBBS, ERIC J. JONES, & DUSTIN P. JOUBERT

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

Category: Undergraduate

Advisor / Mentor: Joubert, Dustin P. (joubertd@sfasu.edu)

ABSTRACT

Post-exercise hypotension (PEH) plays an important role in the antihypertensive health benefits of exercise. While it has been shown that resistance exercise is effective at eliciting PEH, commonly consumed sports supplements may attenuate or completely eliminate that response. Caffeine, a popular stimulant, is often consumed prior to exercise. **PURPOSE:** Determine the effects of pre-workout caffeine supplementation on the PEH response following resistance exercise in adults with above normal blood pressure (BP). **METHODS:** Participants (n = 7) were recreationally resistance trained men and women with above normal resting BP (SBP > 120 mmHg and/or DBP > 80 mmHg). Following BP screening and maximal strength testing, subjects reported to the lab for two separate resistance training sessions where they consumed a placebo (PLA) or caffeine (CAF) (3 mg/kg bodyweight) pre-workout beverage 45-minutes prior to resistance exercise. The resistance exercise session consisted of four sets of 10 reps for bench press, cable row, leg press, and shoulder press at 70-75% one rep max. BP and heart rate (HR) were measured pre-exercise and every 10 minutes for 90 minutes post-exercise. BP recordings from 20-90 minutes post-exercise were averaged, and the change in BP from pre to post-exercise averages was then calculated and compared between trials by a dependent sample t-test. All values are represented as mean ± SD. **RESULTS:** The change (post-pre) in BP (mmHg) and HR (bpm) were as follows: SBP (PLA: -7 ± 8; CAF: 3 ± 5; $p < .01$), DBP (PLA: -1 ± 8; CAF: -2 ± 5; $p = .58$), MAP (PLA: -3 ± 6; CAF: 0 ± 5; $p = .055$), HR (PLA: 7 ± 10; CAF: 12 ± 7; $p = .111$). **CONCLUSION:** These findings indicate that pre-workout caffeine supplementation reverses the post-exercise SBP hypotensive response that was observed in the placebo condition and should be avoided if the antihypertensive effects of resistance training are to be fully achieved.