

POSTER PRESENTATION

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# The comparative effects of nutritional drinks designed to augment athletic performance and recovery

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## Background

The purpose of this study was to determine and compare the effects of 2 cocoa-based CHO-PRO beverages (3.5% and 6% natural cocoa) with a leading sports beverage [CHO-electrolyte solution (CES)] and placebo (CHO-PRO without cocoa) on exercise performance and recovery in healthy adult physically active males.

## Methods

22 males ( $24.9 \pm 4.4$ ) completed 4 exercise test visits, each involving an exhaustive exercise protocol intended to induce muscle soreness (30 minutes, -10 degree decline, 75% HRmax) and 4 hours later, a TTE performance trial. In a crossover, partially double-blinded manner, subjects were provided 2 servings of the beverage (11-13.7 oz), 15 minutes and 2 hours after the exhaustive exercise. Muscle recovery was assessed via the rate of return to baseline of CPK and LDH over the 72-hour post exercise period. Exercise test visits were at least 1 week apart to allow for muscle recovery.

## Results

The TTE times for the 3.5 % cocoa beverage were significantly longer than the times for placebo and CES; (85 seconds;  $p=0.042$  and 133 seconds;  $p=0.002$  respectively) and the times for the 6% cocoa beverage were significantly longer than the times for CES (114 seconds;  $p=0.009$ ) with no performance difference between the 3.5% and 6% cocoa beverages. In relative terms, the 3.5% cocoa beverage produced a 4.4% greater median increase in TTE versus placebo ( $p=0.039$ ) and 11.3% increase versus CES

( $p=0.017$ ) and the 6% cocoa beverage produced a 3.8% increase versus placebo ( $p=0.032$ ) and 5.5% increase versus CES ( $p=0.026$ ). All 4 beverages had a significant return to baseline of CPK and LDH. The 3.5% cocoa beverage showed a larger effect for LDH (85% return versus 78% return to baseline for the other 3 beverages) and the 3.5% cocoa beverage and placebo showed a larger effect for CPK as compared to the CES and 6% cocoa beverage although these differences were not statistically significant.

## Conclusion

The addition of cocoa to CHO-PRO beverages may offer an exercise performance advantage over CHO-PRO beverages without cocoa and CHO-electrolyte solutions. This clinical trial found that a 3.5% cocoa CHO-PRO beverage demonstrated significant performance enhancement effects as compared to placebo and a leading sports beverage. Additional studies are warranted to fully explore the potential ergogenic effects of the 3.5% cocoa beverage.

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