

## The Effects of Energy Drinks on Anaerobic Human Performance and Mood

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**PURPOSE:** The aim of the study was to examine the effects of a commercially available energy drink (ED), containing 140 mg caffeine, on anaerobic performance using the standard Wingate test protocol.

**METHODS:** Eight volunteers (5 male and 3 female); (19.7±4.24 yr; 86.9±15.2 kg) from Shippensburg University participated in the study. Subjects were randomly assigned to consume ED or placebo (PL) treatments 30 min prior to exercise. A cross-over design was used with a minimum of 72 h between trials. The subjects performed a standard 30-second Wingate test using a Monark 894e ergometer. Seated measurements (heart rate and blood pressure) were taken 30-min after treatment consumption (PL or ED) and upon completion of the Wingate protocol **RESULTS:** A paired samples t-test showed that there was no significant difference in peak power ( $p = .332$ ), mean power ( $p = .188$ ), pre-ex ( $p = .843$ ) or post-exercise ( $p = .663$ ) systolic blood pressure (SBP). However, fatigue index revealed a trend ( $p = .086$ ) for less power decay under the PL condition.

| Treatment    | Peak Power<br>( $\text{kgm}\cdot\text{sec}^{-1}$ ) | Mean Power<br>( $\text{kgm}\cdot\text{sec}^{-1}$ ) | Fatigue Index<br>(%) | Resting SBP<br>(mmHg) | Post-Ex SBP<br>(mmHg) |
|--------------|--|--|----------------------|-----------------------|-----------------------|
| Energy Drink | 66.6± 9.02   | 57.2± 7.61   | 36.2± 4.32           | 119.3± 2.71           | 138.25 ±5.47          |
| Placebo      | 69.4± 9.90   | 58.8± 7.52   | 27.2± 3.18           | 120.1± 2.35           | 141.87±5.48           |

Data are mean ± S.E.

**CONCLUSION:** The results of this study suggest that ingestion of a commercially available energy drink 30-min prior to explosive, anaerobic exercise does not improve anaerobic exercise performance.