

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 (kgm·sec ⁻¹)	Mean Power (kgm·sec ⁻¹)	Fatigue Index (%)	Resting SBP (mmHg)	Post-Ex SBP (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.