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Effects of Energy Drinks on Resting Cardiovascular Measures

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The use of energy drinks among athletes has risen greatly. Reviews of energy drink related health complications have highlighted adverse cardiovascular events. **PURPOSE:** To examine the effects of three commercially available energy drinks on resting cardiovascular measures prior to exercise. **METHODS:** Twenty-five healthy subjects participated in this study. Subjects reported to the laboratory on four separate occasions where they ingested a placebo or one of three commercially available energy drinks (energy drink 1, energy drink 2 and energy drink 3). Trials were conducted subject blinded and counterbalanced. During each trial blood pressure and heart rate were measured at three key points: prior to beverage ingestion, at 30 minutes post ingestion and at 60 minutes post ingestion. Subjects remained seated and in a relaxed state for the duration of the 60 minute trials. Means for dependent measures were analyzed using repeated measures ANOVA with an alpha of 0.05 to determine significance. **RESULTS:** Heart rate was found to be significantly increased from pre-ingestion measures to 60 minute measures for both energy drink 2 (Pre = 65.12 ± 9.81 bpm and 60 min = 73.08 ± 10.82 bpm at $p=0.010$) and energy drink 3 (Pre = 65.76 ± 8.44 bpm and 60 min = 73.52 ± 11.25 bpm at $p=0.005$). Systolic blood pressure was found to be significantly increased from pre-ingestion to 60 minutes for energy drink 1 (Pre = 114.84 ± 9.33 mmHg and 60 min = 120.80 ± 9.43 mmHg at $p=0.003$), energy drink 2 (Pre = 113.56 ± 8.55 mmHg and 60 min = 121.44 ± 8.86 mmHg at $p=0.004$), and energy drink 3 (Pre = 113.24 ± 7.09 mmHg and 60 min = 119.40 ± 10.58 mmHg at $p=0.037$). **CONCLUSION:** These findings demonstrate that energy drinks impact cardiovascular measures by increasing both heart rate and blood pressure during a resting state. While the demonstrated increases may not be dangerously high, users should be aware of the impact of these drinks on cardiovascular measures.