

## **The Effects of an Energy Drink (Monster) on Muscular Strength, Muscular Fatigue, and Running Speed**

Gene Paez, Michael L. Daniel, Christopher, M. Hearon, FACSM, Matthew V. Bliss, and Ryan E. Fiddler

Human Performance Laboratory; Department of Health and Kinesiology; Texas A&M University-Kingsville, Kingsville, TX

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*Category: Undergraduate*

*Advisor / Mentor: Daniel, Michael (m-daniel@tamuk.edu)*

### ABSTRACT

In recent years, the number of commercially available energy drinks has skyrocketed. They seem to market directly to a younger audience, including students, athletes, and those interested in fitness or performance. These drinks imply promises of enhanced energy and performance in sports and everyday tasks. Some research exists as to the validity of these implications, but much of it has been conducted on the active ingredients, such as caffeine, rather than a specific energy drink. **PURPOSE:** To examine the effects of an energy drink ("Monster") on specific human performance measures of muscular strength, muscular fatigue, and running speed. **METHODS:** Fifteen male students (age 20.5±1.3) were recruited for this single blind study. Three tests were administered: muscular strength via Maximal Voluntary Isometric Contraction (MVIC), measured using a load cell; muscular fatigue as measured through time taken from MVIC to 80% MVIC (TTF); and running speed (T) on a 30-yd. sprint. The MVIC test required subjects to grasp a bar attached to a load cell, with knees bent to 90 degrees, then exert force straight up to achieve maximal force. The TTF was measured in a second test in which the subject achieved MVIC and held the contraction, and time was measured to the point at which the subject could exert only 80% of MVIC. The 30-yd sprint was accomplished in a gymnasium. Each subject was given an orientation session, in which all three procedures were attempted. At least two days following the orientation subjects returned and were randomly assigned either the treatment (TRT) of 8-oz of Monster energy drink, or 8-oz of placebo (PLC). The tests were performed after a 15 minute wait period to allow the energy drink to enter the circulatory system. Height and weight were measured during the wait period. At least 48 hours following the initial trial, subjects returned and were administered the remaining session, either TRT or PLC. Results were analyzed using paired t-tests. **RESULTS:** There were no significant differences ( $p>0.05$ ) between those who ingested Monster energy drink and those who ingested the placebo on any of the performance measures. **CONCLUSION:** Monster energy drink does not enhance the examined measures of muscular strength, muscular fatigue, or running speed.