



# EFFECTS OF FIVE- HOUR ENERGY SUPPLEMENT DURING MAXIMAL EXERCISE TESTING.

Author: Nancy Ofoegbu, KINE 4400 The University of Texas at Arlington  
Kinesiology Department, Applied Exercise Physiology, December 9, 2015

Faculty Sponsors: J.R. Wilson, Ph.D., Brad Heddins, M.S



## Purpose

The purpose of this study was to determine the effects of Five-Hour Energy consumption on exercise performance.

## Methods

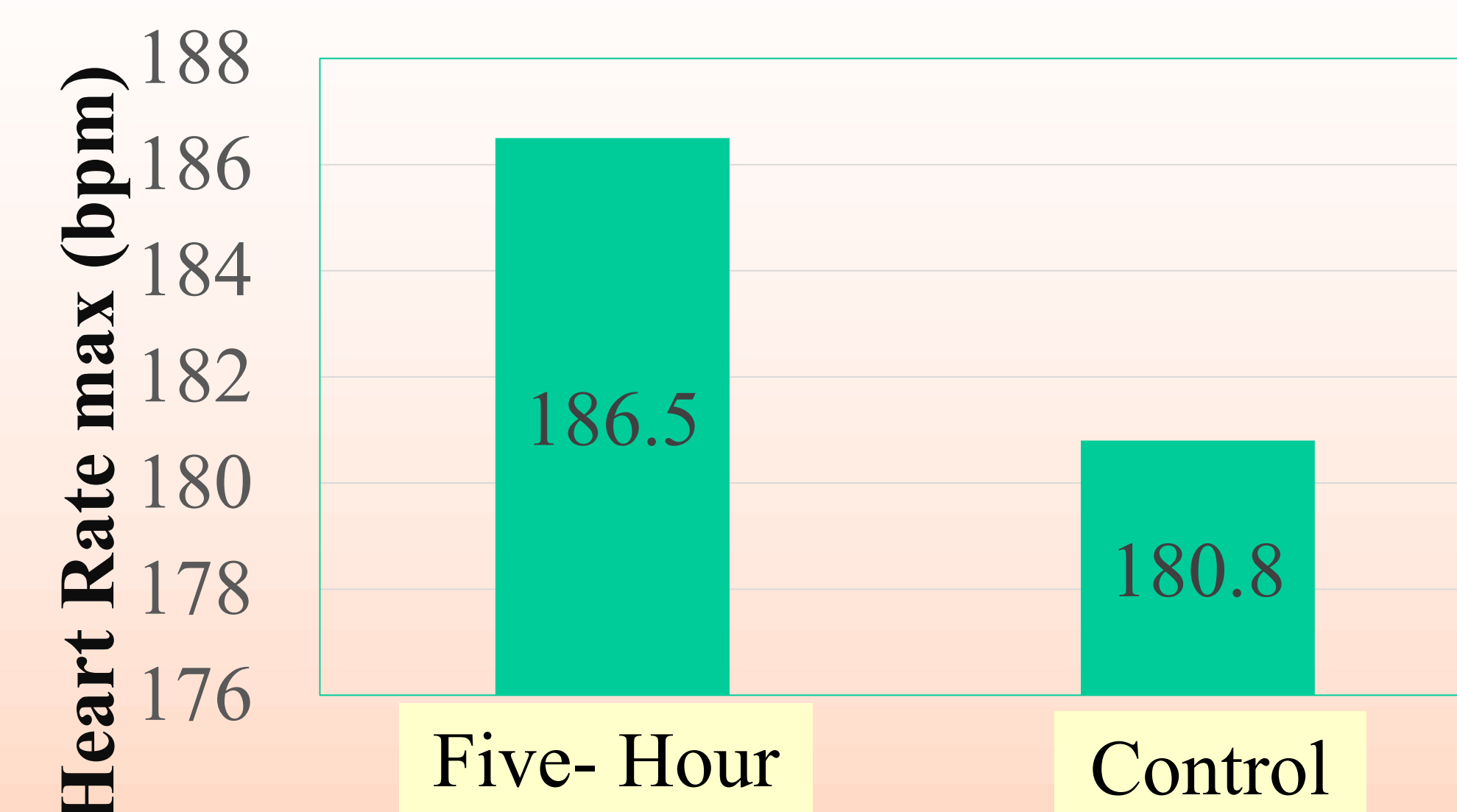
Six women (W; age  $20.8 \pm 1.46$  yrs.) of the UTA Kinesiology department, volunteered to participate in this study. Each subject was asked to consume either Five- Hour Energy or a control (Splenda mixed with water) and perform a maximal exercise test on the treadmill with increasing speed and elevation until exhaustion. The maximal exercise test was conducted as follows: A heart rate monitor was attached to the chest of the participant upon arrival to the lab. This was to allow measurement of heart rate. This signal was sent to a watch and the heart rate was read from there. The subject would then stand on the treadmill while the headgear is fitted to their head in order to hold the mouthpiece in place. A mouthpiece was used along with a nose clip to ensure that exhaled air could be collected in the metabolic cart during the exercise. This allowed the calculation of the participant's oxygen consumption ( $VO_2$  max), a measure of aerobic fitness. Rate of perceived exertion was taken during each workload with ratings from 6 (rest) to 20 (maximal exercise). The treadmill increased speed and elevation every three minutes until the subject could go no further. Because of the mouthpiece, the participant had to communicate with hand signals. A "thumbs up" indicated continuing to exercise, a "waggle" of the hand, palm down, indicated not much longer.

## Methods (cont'd)

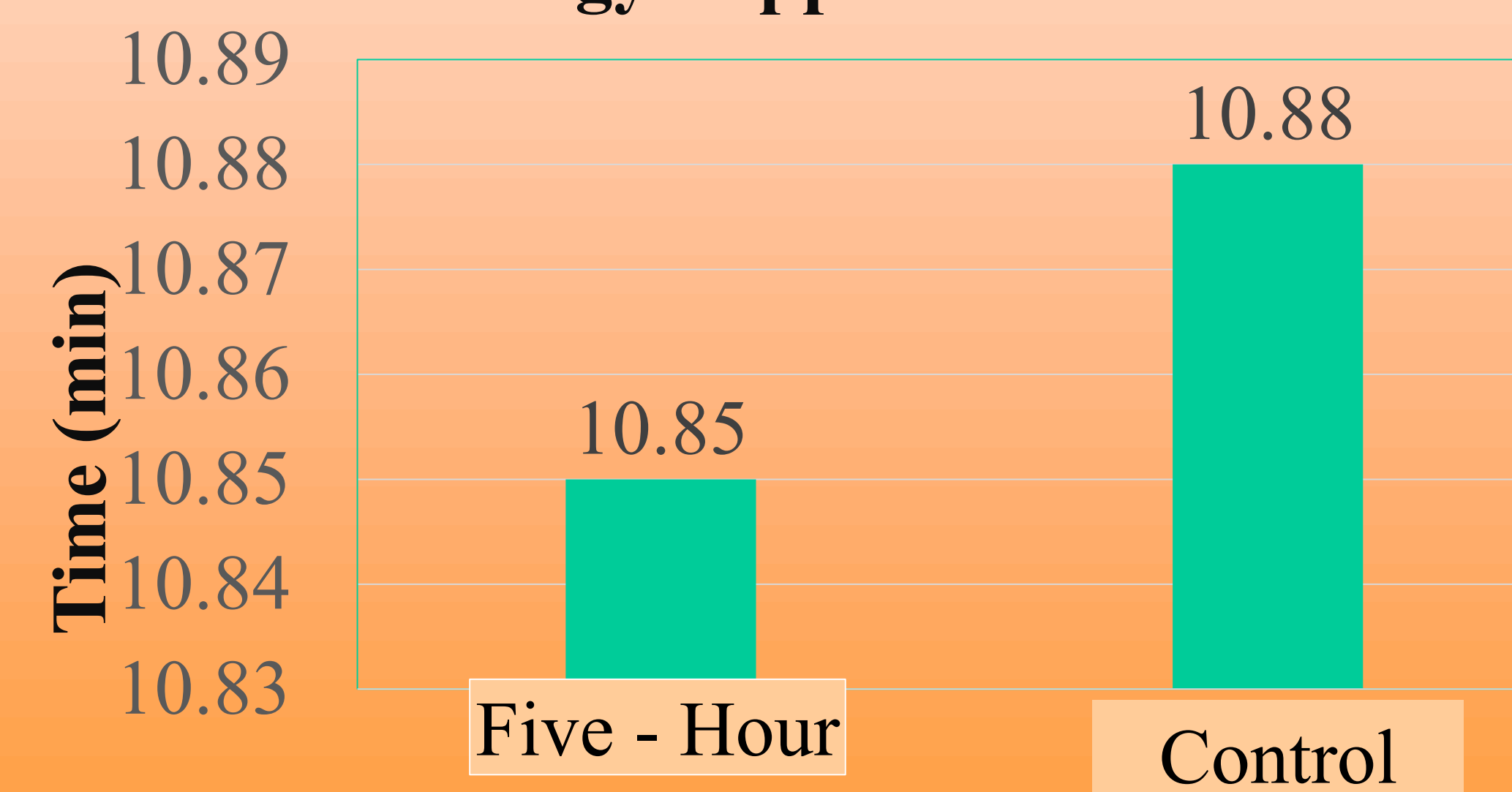
The subject was asked to continue "another 30 sec" or "into the next workload" prior to stopping. The treadmill would then be sent into recovery mode and the subject was allowed to slow down while heart rate and blood pressure continue to be monitored. Each subject was allowed to leave once the heart rate and blood pressure was back to normal.

## Results

The maximal values: Time (Five-Hour:  $10:85 \pm 1.94$  min; C:  $10:88 \pm 1.73$  min), HR (Five-Hour:  $186.5 \pm 9.35$  bpm ; C:  $180.8 \pm 18.8$  bpm), RPE (Five-Hour:  $14.8 \pm 2.3$ ; C:  $16.2 \pm 1.8$ ),  $VO_2$  max (Five-Hour:  $37.1 \pm 7.7$  ml/kg/min; C:  $37.8 \pm 1.8$  ml/kg/min) were not significantly different between substances ( $p > .05$ ).

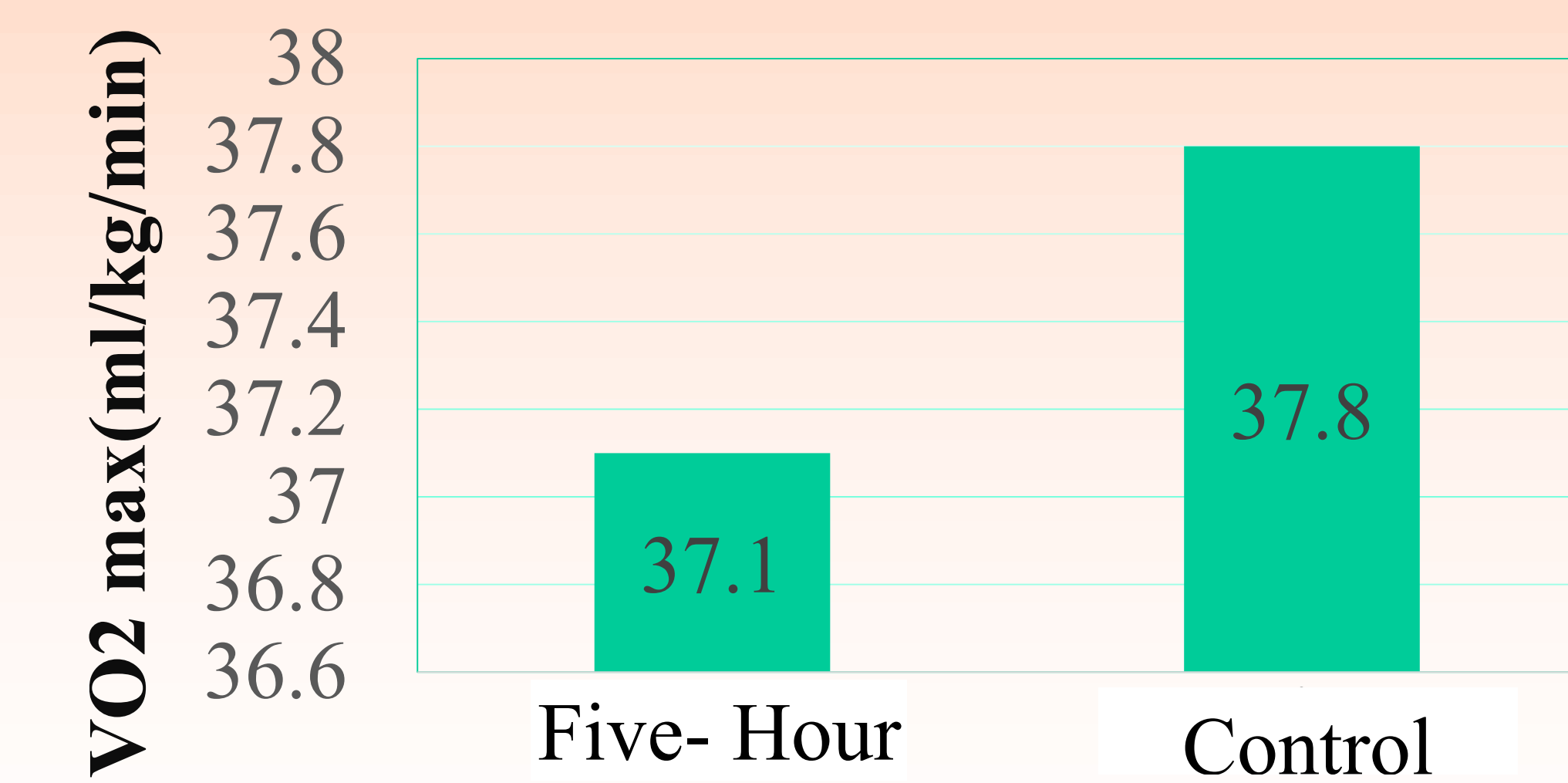


Maximum Heart Rate for Five-Hour Energy Supplement vs Control

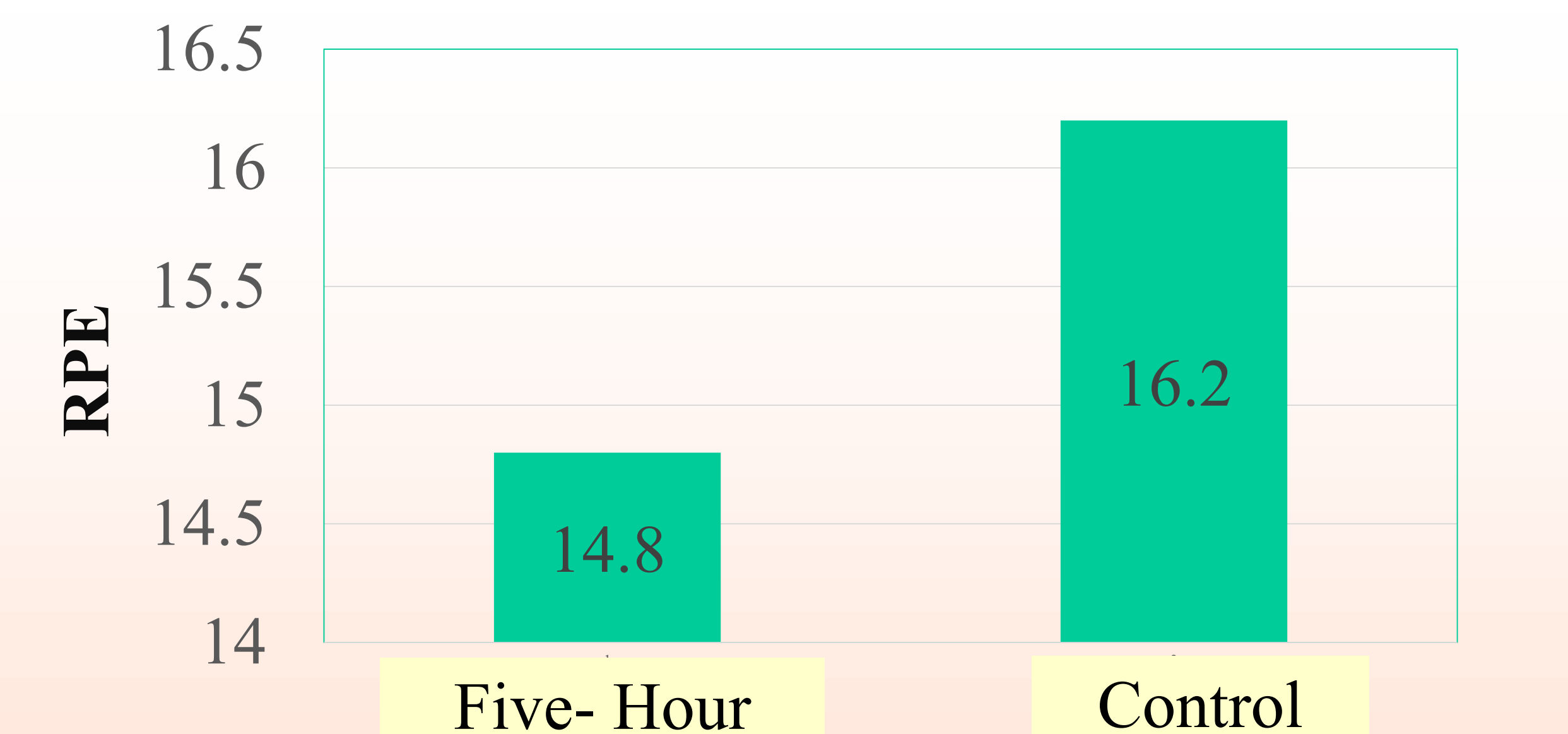


Maximum Time for Five-Hour Energy Supplement vs Control

## Results (cont'd)



$VO_2$  Max for Five-Hour Energy Supplement vs Control



RPE for Five-Hour Energy Supplement vs Control

## Conclusions

The results in this study showed that there were no significant changes in heart rate, RPE,  $VO_2$  max, and time as a result of consuming a Five hour energy drink. Previous studies have shown the increase in heart rate due to caffeine which was seen in the results.