ABSTRACT

TITLE:	The Effects of Controlled Hyperventilation on Co2 Exhalation and Blood pH on Anaerobically Trained Athletes on the Treadmill and Rowing Ergometer
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ABSTRACT: The study aimed to explore the effect of controlled hyperventilation on CO2 exhalation and plasma pH during anaerobic exercise on trained athletes while on the treadmill and rowing ergometer. In simpler terms, the study was designed to see if controlled hyperventilation would help extend bouts of exercise. Fourteen subjects volunteered for the study. All fourteen subjects were tested on the treadmill, whereas only ten subjects were tested on the rowing ergometer. The VacuMed, pH meter, heart rate monitor, rowing ergometer, and treadmill were all used in collecting data. There was only a statistically significant difference ($p=.034$) of the average pH between the control, experimental 1, and experimental 2 trials when analyzed by two way repeated measures ANOVA with replication. The reason for two experimental trials existing was for re-assurance of experimental testing results. However, when a post-hoc test was run there were no statistically significant comparisons between the trial groups. This resulted in having to accept the null hypothesis for controlled hyperventilation having an effect on pH during anaerobic exercise, whereas the results showed a statistical significance ($p<.05$) in comparing CO2 Exhalation on the treadmill and rowing ergometer. A post-hoc analysis showed a significant difference for the mean comparison of the control to experimental 1 and experimental 2 on the rowing ergometer and treadmill, as well as 30 seconds to 60 and 90 seconds on the treadmill and 30 seconds to 90 seconds on the rowing ergometer. This resulted in acceptance of hypothesis for CO2 exhalation: If controlled hyperventilation is increased during anaerobic exercise in individuals, then CO2 exhalation will increase.