

## Effect of Oral Rinsing with Pre-Workout on Cycling Time Trial Performance

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### ABSTRACT

There is evidence that oral rinsing with a carbohydrate solution can have similar effects on aerobic performance compared to consuming the beverage, but less is known of sugar-free and pre-workout beverages. **PURPOSE:** to examine the effects of oral rinsing with a pre-workout supplement on aerobic performance. **METHODS:** After recording age ( $32.4 \pm 12.1$  yrs), height ( $173.2 \pm 11.2$  cm), and weight ( $76.8 \pm 14.8$  kg), eleven participants rinsed 10 sec with either 2.5 oz. of carbohydrate (CHO), sugar-free pre-workout (PWO), or a sugar-free placebo (CN) beverage. Participants were interfaced with a metabolic analyzer and resting measurements were collected after two minutes. Participants then cycled for 5 minutes on a stationary bike as a warm up, with load being adjusted to reach 70% of max heart rate. Participants then rode for 15 minutes at this intensity after which they received a five minute break followed by another 10 second oral rinse of the same solution. This was followed by a time trial, which consisted of 15 minutes on the bike at maximum intensity. This was a counter-balanced, repeated-measures design where participants performed the trials no fewer than two days and no more than seven days apart. Repeated measures ANOVA were used to determine differences in performances and physiological responses between trials, with Alpha set at .05 for all tests. **RESULTS:** There was no significant difference in distance during the time trial between CHO ( $7.7 \pm 1.2$  km), PWO ( $7.6 \pm 1.4$  km), and CN ( $7.4 \pm 1.2$ ),  $F_{(2,9)} = 0.95$ ,  $P = .419$ . There was also no significant difference in  $VO_2$  during the time trial between CHO ( $2.02 \pm 0.58$  L/min), PWO ( $1.94 \pm 0.58$  L/min), and CN ( $2.29 \pm 1.29$  L/min),  $F_{(2,9)} = 1.0$ ,  $P = .388$ , as well as heart rate between CHO ( $155.6 \pm 18.2$  b/min), PWO ( $152.6 \pm 19.8$  b/min), and CN ( $150.3 \pm 19.1$  b/min),  $F_{(2,9)} = 1.5$ ,  $P = .260$ . Finally, there was no significant difference in RPE between CHO ( $14.0 \pm 2.6$ ), PWO ( $13.6 \pm 2.3$ ), and CN ( $13.6 \pm 2.1$ ),  $F_{(2,9)} = .23$ ,  $P = .797$ . **CONCLUSION:** The results of the study suggest that oral rinsing does not enhance performance on a 15-min cycling time trial. For a short, acute bout of intense aerobic exercise, oral rinsing with a CHO or PWO drink will not provide any benefit.