



Does the ingestion of the different forms of Gatorade Prime 01 prior to submaximal exercise affect the distance traveled?

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Abstract

Carbohydrates are ingested by athletes to provide energy before a workout routine. Gatorade has been available for many years and has developed different forms of carbohydrates for an athlete to consume. Research has often been used to show the effect of liquid carbohydrates but not often has the research been on the comparison of solid (S) to liquid (L) carbohydrate ingestion and its effect on performance.

This study will examine not only the distance traveled, but the heart rate, blood pressure, and the rate of perceived exertion while ingesting different forms of Gatorade Prime 01.

8 male students were used for this study and prior to testing, each subject was given a consent form to sign and a survey to fill out. Each subject was given either a solid or liquid carbohydrate on their first visit, and the opposite on the second visit. Counterbalancing was done to ensure validity. Resting values of heart rate and blood pressure were taken and at 5 minute intervals, heart rate, blood pressure, rate of perceived exertion, and distance were measured and recorded. Subjects cycled on a stationary bike for 30 minutes at 70% of their age predicted max heart rate. Workload was adjusted to each subject based on their heart rate.

The average resting heart rate following consumption of a solid was 70.1 ± 10.7 bpm and the resting heart rate after consuming the liquid was 76.1 ± 11.3 bpm was significantly different ($p = 0.0228$). The heart rate at the conclusion of 30 min of exercise (S) was 147.8 ± 9.4 bpm and the average heart rate at the conclusion of 30 min of exercise with a liquid was 147.5 ± 10.2 bpm resulting in no significant difference ($p = 0.4509$). The distance traveled after 30 minutes with a solid was 13.4 ± 1.7 km and the distance traveled after 30 minutes with a liquid was 12.6 ± 3.1 km which also resulted in no significant difference ($p = 0.1095$).

The results of this study indicated that there is no significant difference in the different forms of carbohydrate ingestion. Although the resting heart rates were significantly different in the different forms, it did not affect the performance of the subjects.



Purpose

The purpose of this study was to see if consuming a pre-workout supplement, Gatorade Prime 01, in different forms, Gatorade Prime 01 Pre-Game Fuel, or the G Series 01 Gatorade Prime Energy Chews, has an effect on heart rate, blood pressure, rate of perceived exertion (RPE), or distance traveled during a submaximal bike ride.

Methods

8 male students (age 22.4 ± 2.4 yrs)
 Weight (kg) – 82.53 ± 11.28
 Height (in) – 70.63 ± 2.67

Each subject was given either a solid or liquid carbohydrate on their first visit, and the opposite on their second visit.

When subject arrived in Metabolic Laboratory, if they ingested the solid carbohydrate, 20 minutes later the exercise began to ensure the supplement had entered the body.

If subject ingested the liquid, 15 minutes later the subject began the exercise.

Prior to exercise, resting heart rate and blood pressure was taken. Towels and water bottles were given to subjects on both visits to prevent dehydration.

Each subject performed a 30-minute submaximal test on a stationary bike.

Heart rate, blood pressure, rate of perceived exertion, and distance were all measured during 5-minute intervals.

Workload was adjusted according to subject's heart rate to ensure that it was approximately 70% of age-predicted heart rate max.

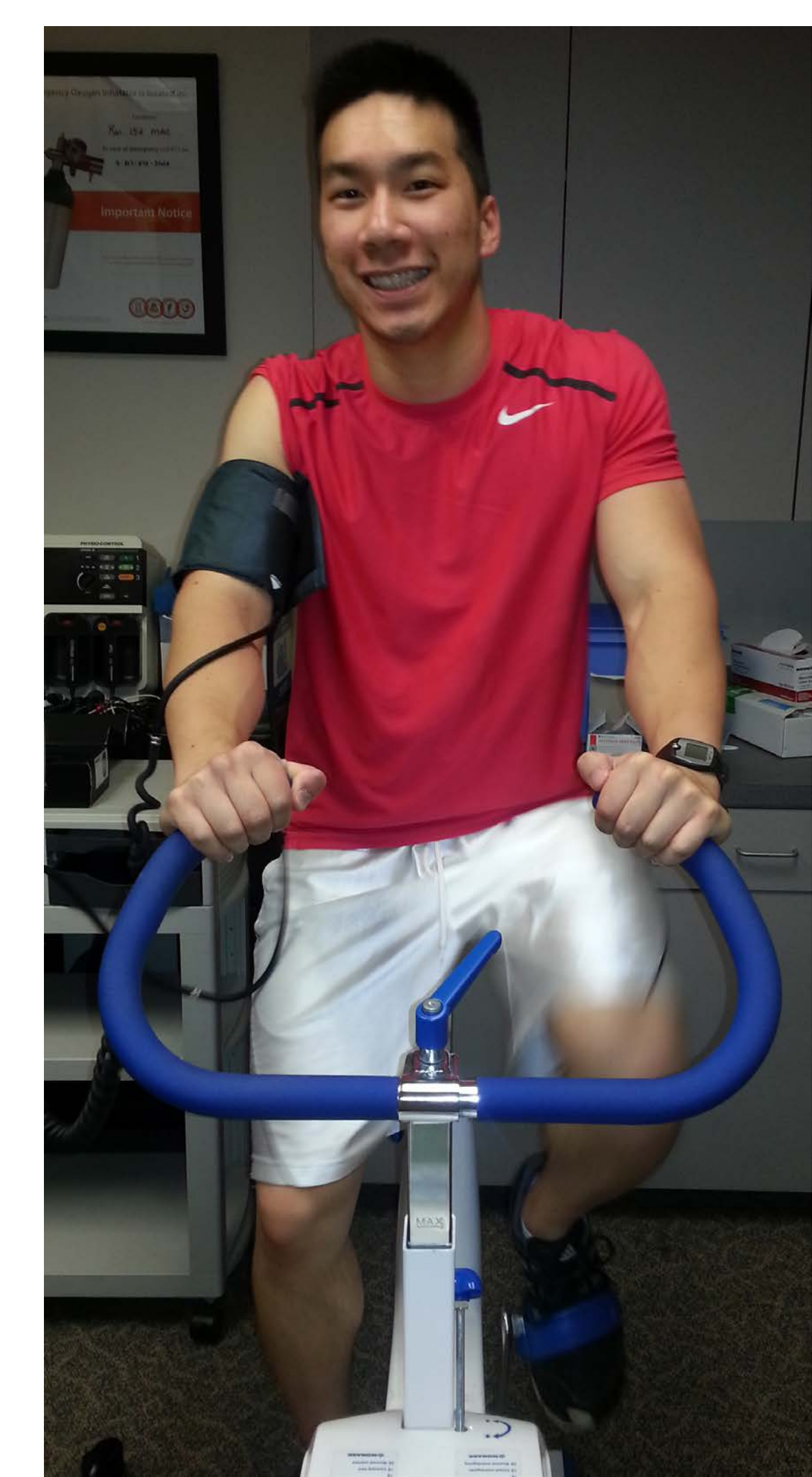
Results

The average resting heart rate following consumption of a solid was 70.1 ± 10.7 bpm and the resting heart rate after consuming the liquid was 76.1 ± 11.3 bpm and were significantly different ($p = 0.0228$). The heart rate at the conclusion of 30 min of exercise (S) was 147.8 ± 9.4 bpm and the average heart rate at the conclusion of 30 min of exercise with a liquid was 147.5 ± 10.2 bpm which was not significantly different ($p = 0.4509$). The distance traveled after 30 minutes with a solid was 13.4 ± 1.7 km and the distance traveled after 30 minutes with a liquid was 12.6 ± 3.1 km which was not significantly different ($p = 0.1095$). t-tests were used to determine differences in distance and time. But no significant differences were found.



Results (cont'd)

	RHR (S)	RHR (L)	R Systolic (S)	R Systolic (L)	Final Distance (S)	Final Distance (L)
Average	70.13	76.13	122.5	127	13.4	12.6
SD	10.7	11.32	8.93	10.08	1.7	3.1
p value	0.0228		0.0287		0.1095	



Conclusions

The results of this study indicated that there is no significant difference in the different forms of carbohydrate ingestion. Although the resting heart rates were significantly different in the different forms, it did not affect the performance of the subjects. Perhaps research on a maximal exercise test could be done in the future to see if there is truly no difference in the forms.