Carbohydrates before and during practice will give the best results.

Febbraio, M.A., A. Chui, D.J. Angus, M.J. Arkinstall and J.A. Hawley. (2000). Effects of carbohydrate ingestion before and during exercise on glucose kinetics and performance. Journal of Applied Physiology 89:2220-2226.

The purpose of this study was to determine the effects of carbohydrate ingestion before, during and in combination on fuel utilization and performance. Seven endurance-trained men (age 30±6 yrs) completed four 120-minute cycling bouts at 70% VO2peak, each followed by a time trial. During each session, subjects received one of the following treatments:

1. nothing at all,
2. a placebo beverage 30 minutes pre-exercise and 2 g/kg of carbohydrate in a 6.4% drink every 15 minutes during the exercise,
3. 2 g/kg of carbohydrate in a 25.7% drink 30 minutes pre-exercise and a placebo beverage every 15 minutes during the exercise, or
4. 2 g/kg of carbohydrate in a 25.7% drink 30 minutes pre-exercise and 2 g/kg of carbohydrate in a 6.4% drink every 15 minutes during the exercise.

Results

- During the last 30 minutes of cycling, the plasma glucose levels were higher for the trials in which a carbohydrate-electrolyte drink was ingested during the exercise.
- The time trial was faster for the two trials in which a carbohydrate-electrolyte drink was consumed during the exercise.
- The time trial was fastest for the trial in which a carbohydrate-electrolyte drink was consumed both before and during the exercise.

Implications

- Consuming a carbohydrate-containing drink before and during a workout can have a greater effect on performance than consuming it before only or during only.
- More specifically, eating a carbohydrate snack before practice and drinking a 6.4% drink throughout a workout can maintain performance during the last 30 minutes and improve performance on sets completed toward the end of practice