

Training Impulse is Lower for Alpine Skiers When Consuming a Carbohydrate-Protein Gel

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Recent research has shown that supplementation of carbohydrate (CHO) and protein (P) in a CHO-P gel with water is better than ingesting water alone for maintaining performance during successive bouts of exercise. Two problems exist for Alpine skiers: 1.) Skiers of all levels and ages tend not to drink enough fluids during training or competition, and 2.) Skiers tend not to take in adequate energy substrate when training. This leads to fatigue and a decrease in performance during successive days of training. By ingesting a CHO-P mixture athletes should be able to delay fatigue and continue to train effectively.

PURPOSE: To determine if ski performance can be maintained on four successive days of training by ingesting a CHO-P gel and water versus water alone.

METHODS: 14 well trained Alpine skiers (M=22+12 yrs.) trained 5 hr/day for 4 days on the Palmer glacier at Mt. Hood, OR. An acclimation day where subjects skied ~2 hr was provided prior to test days. Subjects were matched by age and ability and assigned to one of two conditions using a counter balanced design where group 1 received gels for days 1 and 2 and group 2 received gels on days 3 and 4. Each subject used a hydration pack and was required to consume 1-1.5 L of water each day with the amount of water consumed based on body mass. On the two designated gel days, subjects also consumed at least one, but not more than two CHO-P gels every hour with a range of 4-7 gels/day. Rating of perceived exertion (RPE, CR-10 scale) was recorded at the end of every session. Laps were recorded to determine total vertical distance (m) skied each session. Trimp (training impulse) was calculated as RPE x Vertical distance x number of laps. Data were analyzed using paired T-tests.

RESULTS: The distance skied was not significantly different for either group ($p > .05$). Trimp was found to be significantly lower during the two CHO-P gel days compared to the water only days ($p < .05$).

CONCLUSION: Distance skied is not affected by using a CHO-P gel and water versus water alone; however, the perceived effort to ski the same amount is greater when consuming only water. Further research is needed to determine if training longer than four successive days would be influenced more by a CHO-P supplement compared to water alone.

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