

## Effects of Supplemental Glucose and Bicarbonate for Promoting Recovery During Swim Training

Selma Hamzabegovic, Stefan Szilagyi, Carolyn Meier, Sally Paulson and William Braun, FACSM. Shippensburg University, Shippensburg PA

Swim athletes train at volumes that can lead to overtraining. The use of ergogenic aids, such as carbohydrate (CHO) and sodium bicarbonate (BC), has been proposed as means of promoting recovery during intense daily swim training. **PURPOSE:** To determine the effectiveness of post-exercise CHO and BC supplementation to promote recovery during two weeks of intensified swim training. **METHODS:** Eighteen collegiate swimmers, 12 males and 6 females, participated in a two-week, double blind study (age =  $19.32 \pm 1.16$  yrs., height =  $177.3 \pm 11.23$  cm, and mass =  $75.55 \pm 13.37$  kg). Subjects were divided into three groups, receiving a) CHO (75 g) beverage and placebo (PL) capsules (CHO+PL); b) receiving low dose CHO (10 g CHO) beverage and PL capsules (PL+PL); and c) receiving CHO (75 g) beverage and BC (3.6 g) capsules (CHO+BC). Pre and Post-tests included: 100 yard freestyle performance; two Wingate trials (3-min recovery); grip strength; and positive and negative affect scale (PANAS) evaluation. **RESULTS:** No main group effect was observed for average Wingate power, peak Wingate power, swim performance (Table 1), positive PANAS score, and negative PANAS score ( $p = .32$ ,  $p = .48$ ,  $p = .98$ ,  $p = .24$ , and  $p = .92$  respectively). A main time effect was observed in average power from the pretest Wingate trial 2 to the posttest Wingate trial 2 ( $p < .01$ ). Significant improvement in average Wingate power and non-significant improvement in swim performance were observed in all groups. However, no main group effects were observed for any variables. **CONCLUSION:** It was determined that CHO and BC administered following daily swim training did not improve recovery during two weeks of intensified swim training.

Table 1. 100-Yard Freestyle Swim Performance Time (sec).

| Group  | Pretest          | Posttest         |
|--------|------------------|------------------|
| CHO+PL | $59.94 \pm 8.34$ | $59.45 \pm 7.87$ |
| PL+PL  | $57.36 \pm 4.36$ | $57.00 \pm 3.96$ |
| CHO+BC | $57.90 \pm 7.79$ | $57.46 \pm 7.81$ |