

ASSISTED AND RESISTED SPRINT TRAINING MAY REDUCE ACTIVE DRAG IN SWIMMERS IN AN AEROBIC TRAINING PHASE

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INTRODUCTION: Active drag is one of the most important performance determining factors of swimming. Often, swimmers and coaches use assisted and resisted sprint training to enhance performance and one hypothesis is that sprinting with supramaximal velocity may, over time, help the swimmer to learn drag reducing mechanisms. The aim of this study was to investigate whether assisted and resisted sprint swimming may influence active drag.

METHODS: A randomised, matched-control intervention design was used, including 9 swimmers in the assisted – resisted sprint (SP) and 9 swimmers in the control group (CON). The subjects were national level swimmers of both genders, aged 18.0 ±1.5 years. The perturbation method of Kolmogorov & Duplisheva (1992) was used to measure the active drag. Sprint swimming velocity was measured using a swimming speedometer attached to the swimmers hip, measuring instantaneous velocity, one trial swimming freely and one trial towing the perturbation buoy. The velocity difference between the two conditions and the drag characteristics of the perturbation buoy was used to calculate active drag. The subjects were trained regularly for 8 weeks in an aerobic phase of the season. SP group did additional sprinting 3 times a week using surgical tubing to resist and assist (achieving supramaximal velocities) their swimming. CON trained identically, and sprinted without assistance or resistance from the surgical tubing.

RESULTS: A mean difference in relative change between pre and post testing active drag coefficient were 6.9% (±23.7%) for the SP and -12.8% (±32.1%) for CON. However, there was no statistical difference between the two groups mean pre-post difference (p=0.20), probably due to large variations within each group, and a relatively small sample.

CONCLUSION: Although not statistically different, the numerical trend of our data may indicate that using additional assisted and resisted sprint training may reduce the active drag of swimmers in an 8 week long aerobic training phase.

REFERENCES:

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