

Altitude Tents Do Not Impair Performance response To Short-term High Intensity Cycling Training

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Protocol:

- Competitive cyclists performed 66 high-intensity efforts in 90 minutes, twice per day, for 7 days.
- Altitude group slept at simulated 8800 feet
- Control group slept in oxygen-rich environment
- Double-blind, Crossover study with 2-week washout period
- Maximal graded test to evaluate effects

Stated Conclusion "Sleeping at altitude during a week of high intensity cycling training is unlikely to impair, and may even improve exercise performance."

Note: Contrary to concerns that sleeping at altitude may reduce recovery, this study suggest there is some truth behind the many anecdotal report we have received: That sleeping at moderate altitude improves recovery compared with sleeping at sea-level.

Abstract: PURPOSE: to examine whether sleeping at simulated altitude during seven days of race-specific high-intensity cycling training interferes with cycling performance.

METHOD: Seven regionally competitive male cyclists completed seven days of high-intensity interval training at ~600m while sleeping each night in an altitude tent with an F1 O₂ of either ~30.5% (SL) or ~16.5% (ALT). There were two training sessions daily, each 90 minutes in duration composed of 66 maximal efforts of 5-15 seconds with competition work:relief ratios (1:1, 1:3, 1:6). We used a double blind, repeated measures crossover design with a 2-wk washout period between treatments. A maximal graded exercise test (GXT = 100W, inc. 50w every 5 mins) was completed before and 2D after each training block. A dietician ensured that daily carbohydrate intake during the seven days of interval training was >8g.kg⁻¹.d⁻¹.

RESULTS: Peak power during the GXT (Mean+/-SD) was lower(1) following SL and unchanged(2) following ALT. Peak power during the GXT after interval training was higher following ALT than following SL(3)

(1) 377±42 to 358±42 W, p=.17

(2) 367±42 to 376±39 W, p=.41

(3) 19W, 49 to -9W; 90%CL