Running performance following intermittent altitude exposure simulated with hypoxic altitude tents.

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Protocol:

- Competitive runner used Altitude Tents at simulated 8,200 to 11,500 feet
- 10+ hours/day, for 4 weeks
- Control group lived and trained at sea-level

Results:

Treadmill time-to-exhaustion

- Live High Train Low group...Increased 13%
- Sea-Level Control group...No Significant Change

Lactate Threshold change

- Live High Train Low group...Increased 1.4% c/w control group

Stated Conclusion

- It was concluded that tent-living hypoxia produces improvements similar to those obtained by live-high/train-low experiences.

Notes: A controlled study performed using altitude tents.

Abstract: The effect of intermittent hypoxia on sea-level endurance performance was assessed by using hypoxic tents to simulate the live high-train low approach to altitude training. Eleven male sub-elite competitive runners and triathletes participated in a crossover study of usual training (control) and usual training with altitude exposure (altitude). Altitude treatment consisted of 25±3 d (mean±SD) of sleeping in tents for 8.1±0.6 h.d-1, progressing from a simulated altitude of 2500 m to 3500 m above sea level. Washout period between control and altitude treatments was 4 wk. Three treadmill runs to exhaustion lasting □2, □4 and □8 min were completed 7 and 12 d after control and altitude treatments. Times for standard competition distances (800, 1500 and 3000 m), were predicted using a log-log model, improved by 1.0% (90% confidence limits, ±1.3%), 1.4% (±1.2%) and 1.9% (±1.5%), respectively. Improvements were greater in the six athletes with an I allele for angiotensin converting enzyme (ACE): 2.3% (±1.5%), 2.2% (±1.5%), and 2.1%, (±2.1%), respectively. Effects of simulated altitude on hemoglobin concentration were unclear. Altitude exposure simulated with hypoxic tents is likely to enhance performance substantially in middle-distance endurance running events, especially for individuals with an I allele of the ACE gene.