

**A single hyperbaric oxygen exposure did not enhance athletic performance or reduce recovery time in volunteer athletes.**

**Clinical Bottom Line:**

1. A single hyperbaric exposure did not enhance athletic performance
2. Recovery time from exercise was not changed by hyperbaric exposure.

**Appraised by:** Mike Bennett, Dept of Diving and Hyperbaric Medicine, Prince of Wales Hospital

Sydney; Friday, 9 November 2001

**Clinical Scenario:** An athlete wondered if exposure to hyperbaric oxygen would improve subsequent aerobic performance.

**Three-part Question:** In athletes, does the application of hyperbaric oxygen, compared to air breathing, produce an improvement in subsequent aerobic performance or enhancement of recovery?

**Search Terms:** Aerobic performance, ergogenic aid, exercise

**The Study:**

Non-blinded randomised controlled trial with intention-to-treat. Fit athletes. Six male, six female.

Control group (N = 12; 12 analysed): Two control groups. Rest for 210 minutes followed by testing for V02max and running economy (RE), and a 90 minute run followed by a period of 120 hours rest before testing.

Experimental group (N = 12; 12 analysed): Two active groups. Rest for 90 minutes followed by 120 minutes breathing 100% oxygen at 2.5ATA and then decompression prior to testing, and a 90 minute run followed by an identical HBO regimen.

**The Evidence:**

<b>Non-Event Outcomes group</b>	<b>HBO group</b>	<b>Time to outcome P-value</b>	<b>Control</b>
Males time to fatigue (mins)	16.5 +2.1	14.3 +2.6	post-exposure <0.05
Males VO2max at maximum running pace (ml/kg/min)	64.6 +5.8	62.2 +6.8	post-exposure >0.05
Males max heart rate exposure (+13 (beats/min))	186 +15		post- 183 >0.05

**Comments:**

1. Crossover design with four arms combining rest, exercise and hyperbaric exposure.

2. Time to fatigue was reduced in both groups who had exercised and this effect was therefore not ascribed to the exposure to hyperbaric oxygen.
3. Delay between oxygen exposure and testing was about 40 minutes.
4. Complicated study with multiple results is difficult to interpret.

**Expiry date:** February 2005

**References:**

1. McGavock J, Lecomte J, Delaney J. Effect of hyperbaric oxygen on aerobic performance in a normobaric environment. *Undersea and Hyperbaric Medicine* 1999; 26(4):219-224.