

# Plasma Erythropoietin Levels Are Elevated 24 H Following High Intensity Intermittent Exercise: 374 2:45 PM - 3:00 PM

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Funded by NIH R01 HL20634

Blood volume expansion during endurance exercise training is well documented. Factors contributing to a rapid increase in plasma volume during endurance exercise training are well documented, however, the physiological signals involved in stimulating an increase in red cell production are less clear.

## PURPOSE

To examine the change in circulating levels of erythropoietin (EPO) following a high intensity intermittent exercise protocol (EX, 8 bouts of 4 min 85% followed by 5 min at 40%). This exercise protocol is known to induce significant plasma volume expansion within 24 h of exercise.

## METHODS

Blood samples were collected at rest prior to EX and at 30 min, 2 h, and 24 h following EX for determination of EPO levels. 8 active collegeaged subjects (5 men, 3 female) participated in this study.

## RESULTS

24 hr following EX plasma volume increased 4.5 +/- 0.9 ml/kg or 10.9% ( $p < 0.05$ ) with a 0.11 +/- 0.05 g/kg increase in albumin content ( $p < 0.05$ ). EPO levels at baseline prior to EX averaged 16.5 +/- 2.4 mU/ml and were unchanged immediately following EX averaging 16.8 +/- 2.1 and 15.1 +/- 1.8 mU/ml at 30 and 120 min of recovery. EPO levels increased 37% to 22.5 +/- 4.6 mU/ml 24 h following EX ( $p < 0.05$ ).

## CONCLUSIONS

These data indicate that this high intensity intermittent exercise protocol stimulates a small rise in EPO. It is uncertain if this increase in EPO is sufficient to contribute to the increase in red cell mass during training.