

Lack of toxic side effects in neutrophils following hyperbaric oxygen.

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Source

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Abstract

Conflicting data have been reported about the impact of repeated HBO₂ exposure on the production of superoxide radicals during the neutrophil respiratory burst (RB) and on phagocytosis. In this study we wanted to see if exposure to hyperoxia would affect human neutrophil RB and phagocytosis. Short- and long-term effects after single or repetitive HBO₂ exposure of 2.5 atmospheres absolute over a period of 90 min were studied in 40 healthy volunteers. The RB was measured by the intracellular oxidation of dihydrorhodamine after induction by *Escherichia coli* (*E. coli*), or priming with recombinant tumour necrosis factor alpha (TNF-alpha), followed by N-formyl-methionyl-leucyl-phenylalanine (fMLP) stimulation. The phagocytic activity was determined by the intake of FITC-labelled opsonized *E. coli*. No differences could be found between RB and phagocytic activity before and after HBO₂ therapy, regardless of short- or long-term exposure. These findings indicate that exposure to hyperoxia does not impair these two important functions of the human innate host defense.

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