

Long-term intermittent hypoxia increases O₂-transport capacity but not VO₂max

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Long-term intermittent hypoxia, characterized by several days or weeks at altitude with periodic stays at sea level, is a frequently occurring pattern of life in mountainous countries demanding a good state of physical performance. The aim of the study was to determine the effects of a typical South American type of long-term intermittent hypoxia on VO₂max at altitude and at sea level. We therefore compared an intermittently exposed group of soldiers (IH) who regularly (6 months) performed hypoxic-normoxic cycles of 11 days at 3550 m and 3 days at sea level with a group of soldiers from sea level (SL, control group) at 0 m and in acute hypoxia at 3550 m. VO₂max was determined in both groups 1 day after arrival at altitude and at sea level. At altitude, the decrease in VO₂max was less pronounced in IH ($10.6 \pm 4.2\%$) than in SL ($14.1 \pm 4.7\%$). However, no significant differences in VO₂max were found between the groups either at sea level or at altitude, although arterial oxygen content (Ca