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Randomized Controlled Trial [Br J Sports Med.](#) 2008 Oct;42(10):819-22.

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Effect of Ganoderma lucidum capsules on T lymphocyte subsets in football players on "living high-training low"

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Erratum in

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Abstract

Objective: G lucidum is a popular Chinese herb with an impressive array of reputed health benefits. The purpose of this study was to provide information related to the modulating effect of G lucidum capsules on T lymphocyte subsets in football players during a 28-day "living high-training low" (LHTL) trial and their possible mechanism of action.

Methods: Forty male football players were randomly assigned to four groups: control (living at sea level), LHTL1, LHTL2 and LHTL3. The three LHTL groups had stayed in normobaric hypoxic rooms for 28 days. The four groups trained together at sea level. LHTL1, LHTL2 and LHTL3 groups were provided with placebo, G lucidum 10 capsules/day and G lucidum 20 capsules/day, respectively, for 6 weeks (2 weeks baseline supplementation followed by 28 days of the treatment protocol). Lymphocyte subsets were quantitated using flow cytometry.

Results: In the LHTL1 group, when the CD4+/CD8+ ratio was expressed as relative changes from the baseline, a significant decrease was seen following the 28-day trial compared to the baseline. Furthermore, a significant decrease was observed between LHTL1 and control groups at 21 days. In the LHTL2 group, the relative change of CD4+/CD8+ ratio from the baseline was significantly lower at 28 days compared with the pretrial baseline. Generally, in the LHTL3 group there was a trend for the per cent changes of the CD4+/CD8+ ratio from the baseline to be higher than the values for the LHTL1 and LHTL2 groups, but this was not significant.

Conclusion: LHTL could affect T lymphocyte subsets significantly as a result of the two simultaneous stimuli of physical activity and exposure to hypoxia. The ingestion of G lucidum in the LHTL3 group could help to ameliorate the variation of the CD4+/CD8+ ratio in LHTL training, and polysaccharides from G lucidum might be the main active components for the cell-mediated immune function.

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