

ORIGINAL STUDIES

Histopathological changes in the brain and myocardium of trained animals supplemented with hemp oil

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Abstract

Background. Our previous research regarding the favorable effect of dietary supplementation with hemp (*Cannabis sativa*) oil on the aerobic capacity of rats led us to study the histological changes induced in tissues under the same conditions.

Aims. We studied the experimental effect of training at different intensities, with or without hemp seed oil supplementation, on the brain and myocardium of rats.

Methods. The research was conducted in four groups (n = 10 animals/group) of adult male Wistar rats, trained at different intensities. Groups I and III included animals supplemented with hemp oil. In all groups we studied the histological changes in the brain and myocardium. Exercise training was conducted for 28 days.

Results. Training with loading induced histological changes of necrosis/apoptosis in the brain and did not cause histological changes in the myocardium during the study.

Conclusions. Post-exercise neuronal changes of necrosis/apoptosis support the experimental hypothesis of brain neurogenesis and plasticity in the central nervous system. Hemp oil supplementation has a reduced neuroprotective effect in trained animals.

Keywords: rats, exercise, brain, heart, hemp oil.