

Rapid Recovery Hyperbarics

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Abstract (provisional)

Chronic stress leads to secretion of the adrenal steroid hormone corticosterone, inducing hippocampal atrophy and dendritic hypertrophy in the rat amygdala. Both alterations have been correlated with memory impairment and increased anxiety. Supplementation with omega-3 fatty acids improves memory and learning in rats. The aim of this study was to evaluate the effects of omega-3 supplementation on learning and major biological and behavioral stress markers. Male Sprague--Dawley rats were randomly assigned to three experimental groups: 1) Control, 2) Vehicle, animals supplemented with water, and 3) omega-3, rats supplemented with omega-3 (100 mg of DHA+25 mg of EPA). Each experimental group was divided into two subgroups: one of which was not subjected to stress while the other was subjected to a restraint stress paradigm. Afterwards, learning was analyzed by avoidance conditioning. As well, plasma corticosterone levels and anxiety were evaluated as stress markers, respectively by ELISA and the plus-maze test. Restraint stress impaired learning and increased both corticosterone levels and the number of entries into the open-arm (elevated plus-maze). **These alterations were prevented by omega-3 supplementation. Thus, our results demonstrate that omega-3 supplementation had two beneficial effects on the stressed rats, a strong anti-stress effect and improved learning.**