Dehydroepiandrosterone (DHEA) protects hippocampal cells from oxidative stress-induced damage

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**Abstract**

It has been postulated that decreases in plasma levels of dehydroepiandrosterone (DHEA) may contribute to the development of some age-related disorders. Along with neuroprotective and memory enhancing effects, DHEA has been shown to display antioxidant properties. Moreover, oxidative stress is known to cause lipid peroxidation and degenerative changes in the hippocampus, an area involved in memory processes and especially afflicted in Alzheimer's disease (AD). Accordingly, we investigated the antioxidant effects of DHEA in models of oxidative stress using rat primary hippocampal cells and human hippocampal tissue from AD patients and age-matched controls. A pre-treatment of rat primary mixed hippocampal cell cultures with DHEA (10-100 microM) protected against the toxicity induced by H2O2 and sodium nitroprusside. Moreover, DHEA (10-100 microM) was also able to prevent H2O2/FeSO4-stimulated lipid oxidation in both control and AD hippocampal tissues. Taken together, these data suggest that DHEA may be useful in treating age-related central nervous system diseases based on its protective effects in the hippocampus. PMID: 10095075