ADDING CHOLINE TO DIET COULD PROTECT AGAINST EFFECTS OF IMPOVERISHED ENVIRONMENT

Supplementing the diets of rats with choline, a vitamin-like nutrient needed for brain development and neurotransmitter synthesis, can prevent memory impairment stemming from impoverished environments, according to a recent study.

Lisa Teather and Richard J. Wurtman reared young rats for three months in either impoverished or enriched environments. In both groups, some rats received a regular diet, while others ate a diet supplemented with CDP-choline (a highly active form of choline). In a second phase of the experiment, some rats ate the choline-rich diet for the entire three months, while others received supplements for only one month at the beginning or end of the three-month period.

The researchers found that rats raised in the poor environment exhibited a selective deficit in spatial memory dependent on hippocampal function, while this deficit did not occur in those fed the high-choline diet. Choline did not enhance memory in rats raised in an enriched environment. The researchers say that in the impoverished-environment group, only rats fed choline for the entire three months were protected against memory impairment.

An earlier study by a different research group (see related article, *Crime Times*, 2001, Vol. 7, No. 2, Page 1) found evidence that choline supplementation also may ameliorate at least some of the long-term effects of prenatal alcohol exposure, even if the nutrient is administered after the alcohol exposure occurs. In addition, Teather's group has found that choline supplementation can protect against memory loss in aging rats.

"Dietary CDP-choline supplementation prevents memory impairment caused by impoverished environmental conditions in rats," L. A. Teather and Richard J. Wurtman, *Learning and Memory,* January 2005 (epub ahead of print publication). Address: Lisa Teather, Department of Psychology, Wilfrid Lauer University, Waterloo, Ontario, Canada N2L 3CS.