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**Dietary enrichment with medium chain triglycerides (AC-1203) elevates polyunsaturated fatty acids in the parietal cortex of aged dogs: implications for treating age-related cognitive decline.**

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Dogs demonstrate an age-related cognitive decline, which may be related to a decrease in the concentration of omega-3 polyunsaturated fatty acids (n-3 PUFA) in the brain. Medium chain triglycerides (MCT) increase fatty acid oxidation, and it has been suggested that this may raise brain n-3 PUFA levels by increasing mobilization of n-3 PUFA from adipose tissue to the brain. The goal of the present study was to determine whether dietary MCT would raise n-3 PUFA concentrations in the brains of aged dogs. Eight Beagle dogs were randomized to a control diet (n = 4) or an MCT (AC-1203) enriched diet (n = 4) for 2 months. The animals were then euthanized and the parietal cortex was removed for phospholipid, cholesterol and fatty acid determinations by gas-chromatography. Dietary enrichment with MCT (AC-1203) resulted in a significant increase in brain phospholipid and total lipid concentrations ( $P < 0.05$ ). In particular, n-3 PUFA within the phospholipid, unesterified fatty acid, and total lipid fractions were elevated in AC-1203 treated subjects as compared to controls ( $P < 0.05$ ). Brain cholesterol concentrations did not differ significantly between the groups ( $P > 0.05$ ). These results indicate that dietary enrichment with MCT, raises n-3 PUFA concentrations in the parietal cortex of aged dogs.

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