

# Abstract

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## Alzheimer's disease as copper deficiency.

Klevay LM.

Departments of Internal Medicine and of Pharmacology, Physiology and Therapeutics, Grand Forks, ND 58201, United States.

**BACKGROUND:** Four classes of etiologic agents can produce toxic, hereditary, infectious and deficiency diseases. Recent research on Alzheimer's disease generally addresses pathogenesis related to the first three classes of agents with little emphasis on cause.

**DISCUSSION:** Low copper and cytochrome oxidase in Alzheimer brain can be attributed to low copper intakes or higher than average nutritional requirements. Experiments with animals deficient in copper involving amyloid, ceruloplasmin, copper transport, cytochrome oxidase, myelination, organ analysis and oxidative defense are consonant. Decreased cognition and increased tau in cerebrospinal fluid in Alzheimer's disease also are associated with low copper status. A high requirement for copper may explain early onset of Alzheimer's disease in Down's syndrome.

**CONCLUSION:** Copper deficiency is a plausible cause of Alzheimer's disease. This hypothesis should be tested with a lengthy trial of copper supplementation.

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