



Is Drinking Alcohol (Moderate to Heavy), A Risk Factor for Alzheimer's Disease?

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Alcoholism is a great threat to human beings, especially in this century. In countries like Saudi Arabia, Iran, etc., alcohol intake is illegal and is considered as sin or crime. The highest consumption of alcohol is noticed in Lithuania and Belarus. The United States law allows people to drink alcohol when they attain 21 years of age. In Central African Republic, one should be about 15 years to drink alcohol.

In our earlier reports, we have discussed in detail about alcohol mediated folate deficiency; alcohol induced oral complications; and alcohol induced changes in brain architecture [1-3]. Alcohol mediated structural and functional changes of brain lead to memory loss, a major feature of Alzheimer's disease. In our recent report, we have discussed pesticides induced Alzheimer's disease especially to innocent farmers of developing countries [4].

Alzheimer's is due to formation of beta-amyloid plaques. Alcohol impairs the brain from clearing out amyloid plaques. Usually, microglial cells are involved in the digestion (phagocytosis) of amyloid beta protein plaques. Alcohol exposure resulted in the suppression of the processes of phagocytosis in microglial cells. Excessive alcohol consumption leads to brain damage, cognitive impairments, and an increased risk of various types of dementia. Excessive intake of alcohol or hard liquor also results in cognitive decline in Alzheimer's disease [5- 8]. Chronic alcoholics usually have vitamin (thiamine) deficiency since nerve cells require thiamine to function properly. Malfunctioning of nerve cells result in memory loss. Alcoholics also have nutritional (vitamin) deficiencies from a poor diet. Poor diet results in malfunctioning of nerve cells [9].

Though there are reports suggest that light to moderate alcohol intake might be protecting the brain, a prominent cohort study conclude that light drinking provided no use at all for the brain [10]. In brief, there is no optimum level for alcohol consumption that is beneficial to the brain or health. It is also difficult to formulate a moderate amount that is beneficial for people since the amount varies from people to people, depending on age, gender, ethnicity, and also physiological system of individuals. Physicians and scientists should conclude that alcohol intake has adverse effects rather than beneficial effects to the human population.

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