

# Drinking alcohol associated with smaller brain volume

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The more alcohol an individual drinks, the smaller his or her total brain volume, according to a report in the October issue of *Archives of Neurology*.

Brain volume decreases with age at an estimated rate of 1.9 percent per decade, accompanied by an increase in white matter lesions, according to background information in the article. Lower brain volumes and larger white matter lesions also occur with the progression of dementia and problems with thinking, learning and memory. Moderate alcohol consumption has been associated with a lower risk of cardiovascular disease; because the brain receives blood from this system, researchers have hypothesized that small amounts of alcohol may also attenuate age-related declines in brain volume.

Carol Ann Paul, M.S., of Wellesley College, Mass., and colleagues studied 1,839 adults (average age 60) who were part of the Framingham Offspring Study, which began in 1971 and includes children of the original Framingham Heart Study participants and their spouses. Between 1999 and 2001, participants underwent magnetic resonance imaging (MRI) and a health examination. They reported the number of alcoholic drinks they consumed per week, along with their age, sex, education, height, body mass index and Framingham Stroke Risk Profile (which calculates stroke risk based on age, sex, blood pressure and other factors).

"Most participants reported low alcohol consumption, and men were more likely than women to be moderate or heavy drinkers," the authors write. "There was a significant negative linear relationship between alcohol consumption and total cerebral brain volume."

Although men were more likely to drink alcohol, the association between drinking and brain volume was stronger in women, they note. This could be due to biological factors, including women's

smaller size and greater susceptibility to alcohol's effects.

"The public health effect of this study gives a clear message about the possible dangers of drinking alcohol," the authors write. "Prospective longitudinal studies are needed to confirm these results as well as to determine whether there are any functional consequences associated with increasing alcohol consumption. This study suggests that, unlike the associations with cardiovascular disease, alcohol consumption does not have any protective effect on brain volume."

Source: JAMA and Archives Journals

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