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Just one drink per day can shrink your brain, study says

By Sandee LaMotte, CNN

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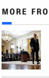
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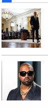
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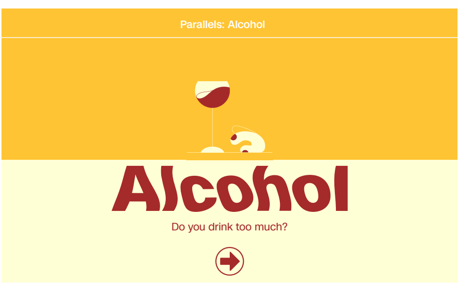

(CNN) — Just one pint of beer or average glass of wine a day may begin to shrink the overall volume of the brain, a new study has found, and the damage worsens as the number of daily drinks rises.

Misleading sentence. Suggests a cause and effect relationship.

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On average, people at age 50 who drank a pint of beer or 6-ounce glass of wine (two alcohol units) a day in the last month had brains that appeared two years older than those who only drank a half of a beer (one unit), according to the study, which published Friday in the journal Nature.

One specific age group, also does not account for the population from which the sample came from.

The brains of people that age who said they drank three alcohol units a day had reductions in both white and gray matter that looked as if they had added 3.5 years to the ages of their brains.

One alcohol unit is 10 milliliters or 8 grams of pure alcohol. That means 25 milliliters or a single shot of liquor is one unit; a 16-ounce can of beer or cider is two units; and a standard 6-ounce glass of wine (175 milliliters) is two units.

The brains of nondrinkers who began consuming an average of one alcohol unit a day showed the equivalent of a half a year of aging, according to the study.

In comparison, drinking four alcohol units a day aged a person's brain by more than 10 years.

"It's not linear. It gets worse the more you drink," first author Remi Daviet, an assistant professor of marketing in the Wisconsin School of Business at the University of Wisconsin-Madison, said in a statement.

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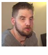
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"A problem in this study is that they only have information on people's drinking habits for the one year prior to the (brain) imaging," said alcohol researcher Emmanuela Gakidou, a professor of health metrics sciences at the University of Washington.

"I think this is a major limitation of the study as it's likely that the cumulative consumption of alcohol throughout one's lifetime is associated with the brain, not just the level of consumption right before the images were taken," she added.

"The relationship between alcohol and health is complex, and our understanding of that relationship is evolving over time. Based on this study, I would not really draw any definitive conclusions, but I would say that the authors have identified areas for further research."

Benefits of alcohol?

Doctors used to believe that moderate amounts of alcohol could provide a health benefit, especially to the heart and the brain, but recent research has called that assumption into question. A number of studies have found no amount of drinking to be healthy, and the World Heart Federation recently published a policy brief saying there is "no level of alcohol consumption that is safe for health."

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"Small amounts of alcohol are associated with health benefits for some conditions, such as ischemic heart disease and diabetes, but harmful for others, such as road traffic accidents and breast cancer," Gakidou said, adding there are others, such as a stroke, where the outcome isn't clear.

"There isn't really a simple answer for a given individual," she said. "Based on what we do know at this time, whether small amounts of alcohol are beneficial or harmful for an individual depends on that person's health status and their risk profile. ... Are they more prone to heart disease or cancer?"

Brain scans and large study size

The report analyzed data from more than 36,000 people who took part in the UK Biobank study, which houses in-depth genetic and health information on more than 500,000 middle-aged adults living in the United Kingdom.

Notice how the study details are after the headline information

People in the study had provided information on the number of drinks they had each week in the previous year and had undergone an MRI brain scan. Researchers compared their scans with images of typical aging brains and then controlled for such variables as age, sex, smoking status, socioeconomic status, genetic ancestry and overall head size.

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"The fact that we have such a large sample size allows us to find subtle patterns, even between drinking the equivalent of half a beer and one beer a day," coauthor Gideon Nave, an assistant professor of marketing at the Wharton School of the University of Pennsylvania, said in a statement.

"Having this dataset is like having a microscope or a telescope with a more powerful lens," Nave said. "You get a better resolution and start seeing patterns and associations you couldn't before."

He told CNN that is why this study was able to find a more distinct pattern of association between drinking and brain volume than past studies. However, he added, the results are just that -- an association -- as the study could not prove cause and effect.

"Our study is by far the largest investigation of the topic," Nave said. "It uses a general population sample, and it controls for more confounds than before. As such, it provides overwhelmingly more evidence than any previous investigations and gets us closer to settling the debate."

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However, the study left a number of questions unanswered, such as a person's cognitive engagement, Gakidou said.

"I believe that there is sufficient evidence that suggests that brain function decays faster among those that are not engaged in intellectually stimulating activities, either through work or hobbies," she said.

"My main criticism is that the authors are overinterpreting the findings of their study and drawing conclusions that are not necessarily supported by what is presented in the paper. I do not see a significant trend in their graphs, and so I'm not convinced by the conclusions."

Which is better, graphs or statistics?

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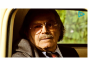
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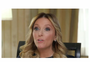
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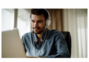
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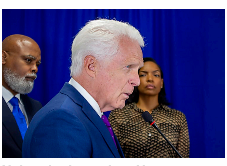
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