

# Critique 122: Does moderate wine consumption lower the risk of developing depression? — 3 September 2013

Gea A, Beunza JJ, Estruch R, et al (17 authors). Alcohol intake, wine consumption and the development of depression: the PREDIMED study. BMC Medicine 2013. Advanced publication, released 29 August 2013.

## Authors' Abstract

**Background:** Alcoholic beverages are widely consumed. Depression, the most prevalent mental disorder worldwide, has been related to alcohol intake. We aimed to prospectively assess the association between alcohol intake and incident depression using repeated measurements of alcohol intake.

**Methods:** We followed-up 5,505 high-risk men and women (55 to 80 y) of the PREDIMED Trial for up to seven years. Participants were initially free of depression or a history of depression, and did not have any history of alcohol-related problems. A 137-item validated food frequency questionnaire administered by a dietician was repeated annually to assess alcohol intake. Participants were classified as incident cases of depression when they reported a new clinical diagnosis of depression, and/or initiated the use of antidepressant drugs. Cox regression analyses were fitted over 23,655 person-years.

**Results:** Moderate alcohol intake within the range of 5 to 15 g/day was significantly associated with lower risk of incident depression (hazard ratio (HR) and 95% confidence interval (95% CI) = 0.72 (0.53 to 0.98) versus abstainers). Specifically, wine consumption in the range of two to seven drinks/week was significantly associated with lower rates of depression (HR (95% CI) = 0.68 (0.47 to 0.98)).

**Conclusions:** Moderate consumption of wine may reduce the incidence of depression, while heavy drinkers seem to be at higher risk.

## Forum Comments

*(It is noted that two of the 17 authors of this paper are members of this Forum. They have not provided any comments for this critique.)*

This appears to be a well-done analysis of the relation of moderate drinking with depression among adult subjects at high-risk of cardiovascular disease. There were appropriate restrictions to entry into the study cohort and important sensitivity analyses were carried out. The analyses are based almost exclusively on “moderate” drinkers, as people exceeding certain amounts of alcohol or testing positive on the CAGE questionnaire (a measure of alcohol misuse) were excluded.

It was a large prospective study, based on data from more than 5,000 55-80 years old subjects who were followed for up to 7 years for the initial development of depression. A total of 443 subjects had a clinical diagnosis of depression made or began to use anti-depressive medications during follow up. The subjects in this study were at increased risk of cardiovascular disease due to diabetes (about one-half of participants) or other risk factors. Essentially all were primarily wine drinkers.

There were repeated assessments of alcohol consumption, every two years, with the development of depression only within the second year after each alcohol assessment counted (to prevent reverse causation). A rather complete list of potentially confounding variables was available. In sensitivity analyses, the authors evaluated lifetime non-drinkers vs current non-drinkers, men vs women, subjects by age groups, excluding diabetics, etc. Only the latter (diabetes) changed the estimates of effect. The key findings were that subjects reporting >5-15 grams/day of total alcohol intake, and wine drinkers of 2-7 drinks/week, were at a lower risk of developing depression than were non-drinkers.

Specific Comments by Forum Reviewers: Forum reviewers were impressed by many aspects of this study: the large sample size, the repeated assessments of alcohol intake, appropriate analytic techniques. They thought that being able to provide updated alcohol/wine consumption estimates added to the importance of the study, especially since heavy drinking can lead to depression, and depression can get people to start to drink heavily. Reviewer Svilaas stated: “The strength of the study is the high number of participants, that it is prospective, and that annually a long and complete food frequency questionnaire was used. This should have provided very reliable estimates of alcohol intake.”

Forum members appreciated that this study does not provide data to judge the effects of alcohol misuse and depression, as most heavy drinkers were excluded. Instead, it provides valuable data on the relation of moderate drinking, especially of wine, to the development of depression.

Some Forum members did not think that the analyses necessarily supported the conclusions of the authors that moderate drinking lowers the risk of depression. Said Reviewer Finkel: “I cannot support the statements of the authors of a physiological parallel between cardiovascular disease and depressive disease in their relationships to drinking. Further, drinking is often a symptom of depression, likely an attempt at self-medication, and drawing a deeper significance from the conflation of the two seems to me untenable.”

Reviewer Van Velden thought that this was a well-done study, but believed that it is difficult to eliminate possible confounders. “Moderate alcohol drinkers may be healthier and happier than heavy drinkers. A healthy lifestyle, where moderate alcohol consumption is a part of life, may be the possible explanation for the lower incidence of depression.”

Forum member De Gaetano stated: “Depression is a delicate matter and moderate wine consumption in a Mediterranean Country is difficult to dissociate from the population’s dietary habits. Thus the role of possible confounders remains potentially high. Possibly, one might conclude that moderate wine consumption, *in the context of a Mediterranean-Diet dietary habit*, is associated with lower incidence of depression. “

### **Forum Summary**

There is a large literature relating heavy alcohol consumption to depression: most studies show that heavy drinkers tend to be depressed, and depressed people may self-medicate with large amounts of alcohol. This large prospective study of subjects at high risk of cardiovascular disease has shown that “moderate” drinkers, especially wine drinkers (the majority of their subjects), were at lower risk of developing depression during 7 years of follow up than were non-drinkers. An important aspect of this study is indeed that the analyses were based on moderate drinkers, as people exceeding certain amounts of alcohol or testing positive on the CAGE questionnaire (a measure of alcohol misuse) were excluded.

Strengths of the study include it being a large prospective study, with more than 5,000 subjects, aged 55-80 years at baseline, who were followed for up to 7 years for the initial development of clinical depression (which was diagnosed in 443 instances). Especially important was the ability of the investigators to have repeated assessments of alcohol consumption, every two years. A rather complete list of potentially confounding variables was available. The key

findings of the study were that subjects reporting >5-15 grams/day of total alcohol intake, and wine drinkers of 2-7 drinks/week, were at a lower risk of developing depression than were non drinkers.

Some Forum members remained concerned that there may have been residual confounding by other lifestyle habits, and that the results may apply primarily to subjects who are also following a Mediterranean-type diet and lifestyle. Also, data were not available to evaluate the relation of heavy drinking or alcoholism to depression. However, the authors provide good scientific support for their conclusions that subjects reporting >5-15 grams/day of total alcohol intake (from about ½ to 1 ½ of a typical drink), and wine drinkers of 2-7 drinks/week, are at approximately 30% lower risk of developing depression than are abstainers of alcohol.

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*Comments on this paper were provided by the following members of the International Scientific Forum on Alcohol Research:*

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