

Is moderate alcohol intake associated with risk of atrial fibrillation among patients with CVD?

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An analysis of the association of alcohol consumption with the development of atrial fibrillation (AF) among subjects with coronary heart disease, stroke, diabetes, or other manifestations of cardiovascular disease (CVD) was based on subjects in two large antihypertensive drug treatment trials. Previous research in the general population has suggested an increase in the risk of the development of AF for heavy drinkers, and the present study shows such an association among subjects who already have CVD.

Among subjects in this study (all of whom had previous CVD), the authors also report that even "moderate" drinkers had a higher risk of AF than low-alcohol consumers, although the risk of death during follow up of moderate drinkers (9.9%) was lower than that of subjects reporting low-levels of drinking (12.5%). Excluding binge drinkers, the estimated risk of AF was about 13% higher in moderate drinkers than among subjects classified as low-alcohol consumers.

While the multiple analyses in this paper were done appropriately, Forum [reviewers](#) were concerned about two aspects of this study. First, there was concern about the wide range the authors chose for the category of "moderate" drinkers, which included subjects reporting from 1 drink per week up through those reporting 21 drinks per week for men and 14 drinks per week for women. It would have been useful to present results also for subjects who met more common definitions for [moderate drinking](#): no more than 14 drinks/week for men and 7 drinks/week for women, the values used to define moderate drinking in the United States, Australia, and many other countries. Unfortunately, there is a conspicuous absence of data in this paper of the effects on the risk of AF of subjects consuming alcohol "moderately" by these standards.

Another major concern about these analyses relates to potential [bias](#) in the estimates from what is known as index event bias or collider bias. Given that alcohol intake prior to enrollment in this study may well have related to subjects' development of [cardiovascular disease](#), it is problematic to judge the effects of alcohol after a cardiovascular event on the subsequent risk of AF, a condition frequently associated with CVD.

All subjects in these analyses had already developed CVD (the prerequisite for being in the present study). Thus, the study included those who consumed alcohol prior to the diagnosis of CVD or [diabetes](#) and those who did not drink prior to these diagnoses. Given that moderate [alcohol consumption](#) has been shown to reduce substantially the risk of both CVD and diabetes, it can be assumed that subjects in this study who developed CVD despite being drinkers had other risk factors contributing to the disease that overcame any "protection" afforded by alcohol consumption. Unless adjusted for, these other risk factors could well affect the subsequent course of subjects following the onset of CVD, including the development of AF. A similar phenomenon has been seen for obesity (the "obesity paradox"), aspirin use (the "aspirin paradox"), and other exposures, where the associations with CVD seen prior to the initial development of the disease differ from those seen after the development of CVD.

It is clear from many previous studies in the general population that heavy [alcohol intake](#) and binge drinking increase the risk of developing atrial fibrillation. This cardiac arrhythmia is a common component of the "holiday heart" syndrome that may occur after very heavy bouts of drinking. As for the effects on the risk of atrial fibrillation from moderate drinking, as studied in this paper, there were a number of concerns from Forum reviewers

about the analyses and results. They raise questions about the conclusions of the authors that even "moderate" drinking results in an increased risk of atrial fibrillation after the development of cardiovascular disease. Especially when defined as no more than 14 drinks per week for men or 7 drinks per week for women, the association between "moderate" alcohol consumption and atrial fibrillation remains unclear.

More information: Liang Y, Mente A, Yusuf S, Gao P, Sleight P, Zhu J, Fagard R, Lonn E, Teo KK; for the ONTARGET and TRANSCEND Investigators. Alcohol consumption and the risk of incident atrial fibrillation among people with cardiovascular disease. *CMAJ* 2012. [DOI:10.1503/cmaj.120412](https://doi.org/10.1503/cmaj.120412)

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