



A GLASS OF RED WINE A DAY KEEPS THE DOCTOR AWAY: MYTH OR SCIENCE?

Yalda Alam¹

¹Bachelor Medical student, Radboud University Medical Center, Nijmegen, the Netherlands

Introduction

Editorial

Alcohol takes up an important role in the Dutch cultural and social environment in every layer of society. Who doesn't long for a glass of red wine on the couch after spending hours at work? Or a cold beer during the third half of a soccer game? Be it at student parties, summer festivals or business meetings, alcohol is the one guest that is often present. While it is commonly known that excessive alcohol drinking can induce the risk of stroke, coronary heart disease and several cancers, the effects of moderate drinking have been very controversial. The discussion around moderate alcohol use flared up when the 'Guidelines for a Healthy Diet' report, released in November 2015 by the Health Council of the Netherlands, clearly stated that people should actually not be drinking alcohol at all instead of the two alcoholic beverages a day for men and one for women allowed by the previous guidelines from 2006. The new guidelines have been widely criticized by both national and international scientists and nutrition experts for not being based on recent scientific studies and not taking the health benefits that moderate alcohol intake provides into account. However, is there any scientific foundation for these so-called 'positive effects' of alcohol? And does this apply for both men and women?

The Dutch' relationship with alcohol has not always been a healthy one. Although due to stricter legislation and more awareness campaigns like the 'Bob' and the 'Geniet, maar drink met mate', The Netherlands is following in the footsteps of both France and Germany where alcohol consumption has decreased dramatically over the past twenty years. According to the Organization of Economic Cooperation and Development (OESO), the Netherlands is, with a slight decrease of 7% by no means the country with the greatest dependence on alcohol. Still, OESO's report concluded that the average Dutch citizen aged 15 or over consumes almost 10 litres of 'pure' alcohol on a yearly basis. This can be illustrated by 100 bottles of wine or even over 750 litres of beer! Even though these numbers may be lower than before, alcohol consumption is still rising under several groups e.g. young adults, highly educated women, and affluent people [1,2]. Since alcohol has such a prominent social aspect and affects all ages and genders, the recommendations made by the Health Council concern a large section of the population. Therefore, the justification of the new guidelines proposed by the Health Council has been examined thoroughly by the international community, which apparently has a different view on the matter.

The WHO defines moderate alcohol intake as up to one drink per day for women and up to two drinks per day for men. The Health Council stated in the report that moderate alcohol consumption in general is correlated with a reduced risk of cardiovascular disease, diabetes and dementia, but causes a greater risk of breast cancer.

Moreover, they claim that moderate use of beer in men is associated with a higher mortality rate regardless of cause of death, but wine is related to a lower mortality rate. These findings would indicate that limited drinking is both favourable and adversely associated with the risk of chronic disease [3]. According to the International Scientific Forum on Alcohol Research (ISFAR), a forum from Boston University that consists of an international group of invited physicians and scientists who are specialists in their fields and committed to well-researched analysis regarding alcohol and health, the Health Council is contradicting itself in these statements. On the one hand it delivers on the basis of scientific research that mild alcohol use has health benefits, while on the other hand it sets the norm that people should not drink at all [4].

According to ISFAR there is indeed substantial scientific evidence supporting the protective effects of light-to-moderate drinking on coronary

heart disease, ischemic stroke, dementia and diabetes in middle-aged and older adults in comparison with abstainers [5]. On these fronts it is important to take into account possible gender differences. Although men are more likely to drink alcohol and drink in larger quantities, gender variations in body structure and metabolism cause women to absorb more alcohol, and take longer to eliminate it. In other words, upon drinking equal amounts, women have higher alcohol levels in their blood than men, and the immediate effects of alcohol occur more quickly and last longer. These contrasts make it plausible that drinking will cause more long-term health problems in women than in men. It could also explain why there is so little evidence that light-to-moderate alcohol intake appreciably increases the risk of cancer, with the exception of breast cancer [6]. ISFAR criticizes this declaration as well by pointing out that among young women the risk of breast cancer is higher than the risk of cardiovascular disease (CVD). Thus, even a small accumulation of cancer risk by moderate alcohol consumption should be taken into careful consideration, especially in view of the accompanying negligible reduction of CVD risk. As opposed to women after menopause where the small increase in the risk of breast cancer is counteracted by a much greater decrease in risk of cardiovascular disease: moderate alcohol intake decreases CVD risk by 20%, with only a very slight extra breast cancer risk. The overall effect for a post-menopausal woman would therefore be a lower mortality risk [4].

When looking at these assumptions, it would seem quite silly to declare that all drinking is bad for one's health and should be banned entirely. So why did the Health Council adjust the 2006 guidelines in the first place? As a matter of fact, the Dutch Health committee does not stand alone in their assessment of moderate drinking. According to the Centers of Disease Control and Prevention (CDC), recent studies show that the health benefits cited by ISFAR on e.g. cardiovascular disease might not be true [7,8].

For instance, the most common proclamation around moderate alcohol consumption is its advantageous effect on CVD. However, histologic markers for the assessment of vascular health show that alcohol consumption is associated with worse vascular health. Alcohol consumption, coronary heart disease risk factors and coronary calcification (a marker of atherosclerosis) were measured during 15 years of follow-up in the Coronary Artery Risk Development in Young Adults (CARDIA) within a sample size of more than 3,000 U.S. participants aged 33–45 years. For

those consuming less than 7 drinks per week, the risk was increased 10 % compared to abstainers and was 50% higher among those drinking on average 7 to 14 drinks per week, which is still considered moderate drinking. The lowest fraction of participants with coronary calcification was found among the lifetime abstainers [9].

Similarly, a study on Finnish young healthy adults found that alcohol consumption has a direct positive relationship with carotid intima-media thickness which is a marker of subclinical atherosclerosis. It revealed a significant increase starting from a consumption of less than two drinks per day as to non-drinkers [10]. In addition, a Mendelian randomisation analysis established that individuals with a genetic variant correlated with non-drinking and lower alcohol consumption had a more favourable cardiovascular profile and a reduced risk of coronary heart disease than those without the genetic variant. This suggests that reduction of alcohol intake, even for light to moderate drinkers, is advantageous for cardiovascular health [11].

These findings contradict the notion of moderate drinking having health benefits regarding CVD as claimed by ISFAR.

Furthermore, the positive effects of alcohol have not been confirmed by controlled studies or RCTs, but by epidemiological studies which are now being challenged on a number of aspects. Recent meta-analyses have shown that many of these studies systematically exclude unhealthy drinkers or misclassify unhealthy ex-drinkers as abstainers. In doing so, this artificially creates the appearance of positive effects. Furthermore, the ability of respondents to accurately recall their own alcohol consumption is highly doubtful and, moreover, very few individuals maintain one standard drinking level or style throughout life. In addition, it is impossible to conclude whether the improved health outcomes are due to moderate alcohol consumption or differences in behavioural factors, genetics or other unknown factors between moderate drinkers and non-drinkers. The relationship between alcohol and some conditions might be a function of drinking patterns but few studies have addressed this issue [12-14].

Another argument CDC mentions repeatedly is that moderate drinking often does not stay 'moderate'. To profit from the alleged health benefits this level of consumption should not be exceeded on any day. This has also been supported by ISFAR itself declaring: 'when limited to 1 drink/day for women or 2 drinks/day for men, with no binge drinking (>4/5 drinks during a single occasion for women/men respectively), and especially when consumed with meals, there are potential health benefits and few risks of such drinking'. However, a recent large-scale review in the United States concluded two in three adult drinkers report drinking above moderate levels at least once a month [15]. This 'gray area' of consumption between moderate and more than moderate drinking was associated with small but significantly increased risks of prevalent and incident alcohol dependence, incident alcohol related interpersonal problems and prevalent job loss. Due to the large proportion of drinkers in this gray area, the impact of this level of consumption cannot be negligible [16].

Although there has been much controversy around the decision of the Health Council to alter the guidelines on alcohol intake based on the health risks, it cannot be denied that other factors probably affected this decision as well. Alcohol in general causes more deaths worldwide than HIV/AIDS, violence and tuberculosis combined due to traffic accidents, domestic violence, sexual aggressive behaviour and physical or mental health issues [17,18]. With a rising number of 'binge drinkers' and other excessive drinkers among adolescents and young adults, the new recommendations could be perceived as a preventive measure in order to lower the alcohol intake and thereby alcohol related deaths in The Ne-

therlands in general [1]. For now, while we are waiting for the international community to reach consensus on the topic, we might as well enjoy some Fristi instead!

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