

Wine at the table: what science tells us – between health effects and social habits

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In this exclusive interview, leading epidemiologist Miguel A. Martínez-González outlines the scientific evidence supporting moderate wine consumption during meals as part of a healthy lifestyle. Drawing on decades of research into the Mediterranean diet, he explains the health mechanisms involved, contextual factors, and the nuanced message policymakers should consider in current public health debates.

Professor Miguel A. Martínez-González is a globally recognized medical epidemiologist. He teaches Public Health at the University of Navarra and Nutrition at the Harvard T.H. Chan

School of Public Health. He has over 30 years of experience in epidemiological research on chronic diseases, nutrition, and lifestyle.

We believe his expert contribution – presented here without added commentary – can be a valuable voice in a highly heated debate currently engaging public decision-makers and the wide array of wine industry stakeholders.

Professor, based on your in-depth studies on the Mediterranean diet, how would you define the role of moderate wine consumption within a healthy lifestyle?

Moderate wine consumption is defined as no more than 2 glasses per day for men and no more than 1 glass per day for women, where 1 glass equals 100–125 ml. When consumed in moderation and during meals, wine is consistently included in all definitions of the Mediterranean diet. The Mediterranean diet is the only dietary model backed by top-tier evidence, obtained through randomized trials, demonstrating protection against serious clinical events. Therefore, there is solid scientific evidence supporting the role of wine as a protective element within the Mediterranean diet.

Could you explain in accessible terms how moderate wine consumption can influence overall health and longevity?

Low-to-moderate wine consumption is believed to promote favorable changes in the lipid profile, such as increasing plasma levels of high-density lipoproteins and potentially reducing the oxidation of low-density lipoproteins, which are particularly involved in atherosclerosis. As a result, it can be associated with a reduction in risk factors and the likely prevention of cardiovascular diseases. In particular, red wine – rich in phenolic compounds like resveratrol – has

demonstrated antioxidant and anti-inflammatory properties. These mechanisms may help reduce oxidative stress, improve endothelial function, and increase insulin sensitivity – all factors contributing to cardiovascular health. Although the cardioprotective effects of moderate wine consumption are well documented, further research is needed to fully clarify the molecular mechanisms behind these benefits. **How important is context – drinking wine during meals, in moderation, and as part of a social and Mediterranean lifestyle – in modulating its health effects?**

The way wine is consumed significantly influences the effects of ethanol on the body. Preferring red wine increases the intake of beneficial phenolic compounds; drinking wine during meals helps avoid high local alcohol concentrations that can damage the digestive tract cells. We must not forget conviviality – a central element of the Mediterranean lifestyle: drinking wine moderately during meals can help strengthen family life and friendships, thus enhancing social support.

Are there individual factors (population, genetic predisposition, sex, age, metabolic profile) that should influence one's approach to wine consumption? With the rise of big data and biochemical analyses of individual responses, do you think lifestyle, diet, and alcohol consumption recommendations will become highly personalized?

Alcohol consumption should not be recommended under the age of 21. The same amount of alcohol is generally more harmful to women than to men due to differences in body composition and enzymatic capacity between sexes. Certain medical conditions

also make even low-to-moderate alcohol consumption entirely inappropriate – for example, in individuals with a history of breast or liver cancer, or in the presence of specific medications.

Yes, I envision a future where recommendations on wine consumption will be more targeted. I believe the advancement of metabolomics could provide supplementary insights. However, I would like to clarify that, at present, there is a lack of sufficient information to offer truly personalized advice – aside from some genetic variants in enzymes that are relatively common in some Asian populations. These genetic factors can trigger physical symptoms such as facial flushing, nausea, and tachycardia, typically leading to reduced alcohol consumption.

If you had to send a key message to clinicians and policymakers today regarding moderate wine consumption and public health, what would it be?

Heavy drinkers or teetotalers should not be encouraged to drink wine for health reasons. Wine must not replace a healthy lifestyle. However, based on current evidence, regular consumers of low-to-moderate amounts of wine, without medical complications, can be reassured that this habit has not been shown to be harmful.

would also point out something important for regulatory decision-makers: there is a strong need for high-level evidence obtained through large randomized studies – such as the one conducted within the UNATI (University of Navarra Alumni Trialist Initiative).

Key points:

1. **Moderate wine consumption – especially red wine – during meals can support cardiovascular health**, when integrated into a Mediterranean diet and healthy lifestyle;
2. **Scientific evidence supports wine's protective role**, thanks to its antioxidant and anti-inflammatory compounds like resveratrol;
3. **Context matters**: drinking wine with food and in a convivial, social setting reduces harmful effects and aligns with Mediterranean cultural habits;
4. **Not everyone benefits equally**: sex, age, genetics, and medical history influence individual tolerance and response to alcohol;
5. **Wine is not a health recommendation**: abstainers or heavy drinkers should not be encouraged to start or continue drinking for health reasons.