



COMMENTARY

Editor's note: Alcohol consumption and health: An ongoing debate

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Received 8 July 2019; accepted 9 July 2019

Handling Editor: A. Siani

Available online 9 July 2019



In the current issue of NMCD, we publish two viewpoints, or, for the sake of precision, a viewpoint and a counter-viewpoint expressing different, if not opposite, opinions on the health effects of moderate alcohol consumption. In their viewpoint, Dr. Costanzo and colleagues discussed and cautiously supported the existence of a J-shaped relationship between alcohol consumption and all-cause mortality [1]. Arguments in favour or against this association are critically examined, coming to the conclusion that the lower mortality risk among moderate drinkers may be attributable to the beneficial effects of moderate alcohol consumption on cardiovascular outcomes. The online appearance of this paper prompted Prof. Annie Britton to express her opinion in a counterviewpoint [2], challenging the thesis put forward by Costanzo and colleagues.

Of course, it is not the task of the Editor-in-Chief to enter this scientific debate, but he gladly welcomes this stimulating occasion offered by the contribution of eminent scholars in the field. Their reports confirm that there is disagreement in the literature about the nature of the relationship between alcohol consumption and mortality, and, more broadly speaking, between alcohol and health outcomes. Of course, such a dichotomy is an oversimplification. Most of the evidence about the health effects of alcohol comes indeed from observational studies. Thus, in both viewpoints, the authors refer to epidemiological data, whose interpretation is notably complex and inherently prone to controversy. Sometimes it is instructive to compare two similar publications. Let us use, as a working example, two papers, both published on high-impact Journals, dealing with one of the simplest foods, eaten almost everywhere in the world: the egg.

In a recent issue of JAMA, Zhong and colleagues evaluated the associations of dietary cholesterol or egg

consumption with incident CVD and all-cause mortality pooling data from 6 prospective US cohorts [3]. The analysis refers to 29,615 participants with a median follow-up of 17.5 years. The authors concluded that, among US adults, higher consumption of eggs was significantly associated with higher risk of incident CVD and all-cause mortality in a dose-response manner. Few months later, Key and colleagues published on *Circulation* the results of an analysis of meat, fish, dairy products, and eggs on the risk of ischemic heart disease (IHD), in the large pan-European EPIC cohort (European Prospective Investigation Into Cancer and Nutrition) [4]. The analysis refers to 409,885 men and women in 9 European countries with a mean follow-up of 12.6 years. The authors found a modest yet statistically significant inverse association between egg consumption and IHD risk, although reverse causation bias cannot be excluded. Incidentally, we recently published on NMCD a meta-analysis suggesting that egg intake has a limited, if any, impact, on major CVD risk factors [5].

These seemingly contradictory findings beg the question of how data derived from observational studies in the field of nutrition should be interpreted, and, more importantly, translated into public health recommendations. It is worth reminding to this regard the stone launched by John Ioannidis in the pond of nutritional epidemiology less than two years ago [6]. Although not all his arguments may be uncritically accepted, it is undoubtable that a “reform” in the field of nutritional epidemiology is long overdue.

The case of alcohol may typically raise feelings of mistrust in the lay public about scientific information, justified not only by inconsistent conclusions across studies, but also by the failure to acknowledge how the nuances of study designs may explain different study outcomes. Unfortunately, while for other foods/nutrients large scale well-designed controlled trials might give quantitative answers to our questions about food and health [7], and also inform public health policies, a

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randomized controlled trial of alcohol consumption comparing abstainers to moderate drinkers seems at the moment unlikely, after the recent decision by the US NIH to terminate the multicenter Moderate Alcohol and Cardiovascular Health Trial (MACH15) (<https://clinicaltrials.gov/ct2/show/NCT03169530>). However, would this trial be possible, and was an ethical committee to accept it, our mission as NMCD is to promote and disseminate such research to further increase our understanding on this sensitive matter. For the time being, and although some may disagree, public health decisions on alcohol consumption should be made on the weight of the available evidence, acknowledging its limitations, and seeking to obtain more and better evidence when possible. It is equally important to acknowledge when uncertainty around evidence makes said evidence insufficient to inform any guidance. In this case, the communication to the public should clearly outline all the relevant options to enable informed choice. A solid approach to assessing and taking into account the uncertainties of the available scientific evidence will increase the transparency of the resulting scientific advice, thus allowing for a more robust and informed decision-making process. Critically recognizing the limitations of our studies, and avoiding black-and-white

communication will help restore and strengthen the confidence of the public in the “scientific truth”.

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