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# French Paradox, Alcohol, and Health Related Concerns

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## *Dear editor,*

The French paradox (FP) is the paradoxical association of high intake of saturated fat with low cardiovascular disease (CVD) mortality, which was initially attributed to consumption of red wine and its anti-oxidant poly-phenols (1). However, the concentration of antioxidants in dietary sources is negligible and can vary dramatically depending on the geographical area, harvesting year, plant diseases, and plenty of other factors (2). Therefore, not strong lines of evidence are backing up the red wine-related cardiovascular benefits, and the impacts of polyphenols on the explanation of the French paradox has been overrated (2). Actually, the trend of wine consumption is decreasing in France but cardiovascular mortality has remained at a low level. Conversely, the increasing demand for red wine consumption in Eastern Europe does not shrink the worryingly high rates of CVD.

It is reported that dairy products consumption and heart disease have an inverse correlation (3). Hence, Petyae et al. assumed that the occurrence of the "French paradox" might be a result of high dietary consumption of specific kinds of dairy products such as molded varieties of cheese (4). Indeed, it has been suggested that cheese consumption, via affecting the gut microflora and cholesterol metabolism, could be a central part of an FP set. Besides, Frank Cooper highlighted the very low trans and contents of the French diet as the reason for the observed French Paradox (5). Among other hypotheses that have been proposed in this regard "alkaline phosphatase" hypothesis can be noted. According to this hypothesis, numerous components of milk such as calcium, casein, and lactose directly activate intestinal isoform of alkaline phosphatase, which then inhibits chronic low-grade inflammation by detoxification of lipopolysaccharide and other microbial pro-inflammatory components. Inhibition of Low-grade inflammation eventually ameliorates the risk of CVDs (6).

In contrast to wobbly proofs of positive impacts of red wine on CVD, the observed connection between alcoholic drinks consumption, of any type, and occurrence of various cancers are well documented and a commonly 'safe' margin for alcohol consumption has not been identified yet. World Health Organization reported that in 2012, alcohol consumption was related to around $3.3 \times 10^6$ deaths and was also played partial role in over two hundred health-related disorders such as gastrointestinal diseases, fetal alcohol syndrome, and infectious diseases (7). In a study published in the Lancet, it is reported that among Russians, alcohol played a role in over 50% of 15 - 54 years' deaths (8). In the UK, Allen et al. conducted a fascinating large cohort including more than 1 million middle-aged women, who attended breast cancer screening clinics between 1996 and 2001. Seven years follow-up showed risk of certain cancers of the upper aerodigestive tract, rectum, liver, and breast were increased in women consuming even low to moderate alcohol (9). Moreover, the higher risk of breast and some gastrointestinal cancers was observed in the light drinkers (10).

Indeed, it is hard to ignore the well-documented harmful effects of alcohol on the occurrence of cancer diseases, liver cirrhosis, violence, and accidents in lieu of the possible beneficial effects of alcoholic beverages on CVD (11).

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