How should we talk about alcohol and risk?

"The overall absolute increase in cancer risk for one bottle of wine per week equals that of five (men) or ten cigarettes per week (women)." This was the headline finding of a study led by Theresa Hydes (University of Southampton, UK) recently published in *BMC Public Health*, which aimed to directly compare the carcinogenic risk of alcohol consumption with that of smoking cigarettes. The study, subtitled "how many cigarettes are there in a bottle of wine?", proved divisive, with some commentators labelling it unhelpful, and others calling it innovative and important. The analysis, and the mixed manner in which it was received, offers an insight into an ongoing conversation about the population-level health risks of alcohol consumption, and how best to communicate them.

Hydes and colleagues took the overall lifetime risk of cancer in the general population, based on Cancer Research UK (CRUK) data, and subtracted the alcohol-attributable fraction for all known alcohol-related cancers, and the tobacco-attributable fraction for all known smoking-related cancers, to estimate the lifetime risk of cancer in alcohol-abstaining never smokers. This was then multiplied by the relative risk of drinking either 10 or 30 units of alcohol or smoking either 10 or 30 cigarettes per week. They then compared the increases in risk and concluded that consuming one bottle of wine per week leads to an increased absolute lifetime cancer risk for non-smokers of 1·0% in men and 1·4% in women, with the higher increased risk in women mostly explained by the link between alcohol consumption and breast cancer.

A range of criticisms have been levelled at the study. A CRUK blog post noted that using smoking as a comparison might give the impression that people can swap one risk factor for another and also raised concerns that comparing smoking with an activity that is more socially acceptable could run the risk of renormalising it. Concerns raised by other experts in interviews with the Science Media Centre (London, UK) included the lack of adjustment for genetic factors and the fact that most smokers smoke far more than 5–10 cigarettes per week, detracting from the real-world applicability of the findings.

The rationale given by Hydes and colleagues for comparing cigarettes and alcohol head-to-head was that "the number of cancers attributed to alcohol is poorly understood by the public". It is true that despite the strong associations between alcohol consumption and a range of cancers including colorectal cancer, hepatocellular carcinoma, oesophageal cancer, and breast cancer, public perceptions of alcohol are that it is less harmful than other drugs, and it is not viewed primarily as a carcinogen. For example, in a 2015 survey of 2100 adults in England, only 13% of respondents identified cancer as a potential health outcome of alcohol consumption.

The historical lack of clarity in public health messaging about alcohol consumption is further exemplified by a study recently published in *The Lancet*, which debunks the widely held misconception that moderate alcohol consumption confers beneficial health effects. Previous observational studies had suggested a lower risk of stroke among people who consumed one to two alcoholic drinks per day compared with non-drinkers and those who drank more. Based on these studies, the notion that a couple of glasses of wine or beer per day were beneficial was spread widely—and in some cases gleefully—in the media. However, the new study used Mendelian randomisation to analyse genetic data on over 160 000 Chinese participants followed up for 10 years. When adjusting for genotype, the researchers found that the U-shaped association between alcohol and stroke disappeared, leading them to conclude that alcohol consumption uniformly increases blood pressure and stroke risk, and that there is no protective effect of low levels of alcohol consumption.

Without doubt, the clarity and accuracy of public health messaging on alcohol lags behind that for tobacco and other drugs. Despite its shortcomings, many of which are acknowledged by the authors, the analysis by Hydes and colleagues offers a novel way of communicating the risks of alcohol consumption to the public. By comparing drinking with smoking, they leverage the hard-won successes of anti-tobacco campaigners in creating a deep public awareness of the links between cigarettes and cancer. Whether or not it has the desired effect on public awareness and drinking behaviours, any effort to innovate the way we talk about alcohol and risk should be applauded. ∎ *The Lancet Gastroenterology & Hepatology*

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