

# New study calculates alcohol cancer risk in cigarette equivalents to help communicate risk

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The well-established link between cancer and tobacco may provide a way to help communicate the links between moderate levels of alcohol and cancer, and raise public awareness of alcohol-associated cancer risks, according to a study published in the open access journal *BMC Public Health*.

A team of researchers at University Hospital Southampton NHS Foundation Trust, Bangor University and University of Southampton have estimated the risk of [cancer](#) associated with drinking moderate levels of [alcohol](#), and compared this to the risk of cancer associated with smoking.

Dr. Theresa Hydes, the corresponding author said: "Our study describes the percentage increase of the risk of cancer within the UK population associated with different levels of alcohol consumption, and is the only study to provide a 'cigarette equivalent' in terms of harm.

"We aimed to answer the question: Purely in terms of [cancer risk](#)—that is, looking at cancer in isolation from other harms—how many cigarettes are there in a bottle of wine? Our findings suggest that the 'cigarette equivalent' of a bottle of wine is five cigarettes for men and ten for women per week."

The authors estimate that in non-smoking men, the absolute lifetime risk of cancer—that is, the risk of developing cancer during one's lifetime—associated with drinking one bottle of wine per week is 1.0%. For women, it is 1.4%. Thus, if 1,000 men and 1,000 women each drank one bottle of wine per week, around ten extra men and 14 extra women may develop cancer at some point in their life. In men, this risk appears to be associated primarily with cancers of the gastrointestinal tract, whereas in women, 55% of cases appear to be associated with breast cancer.

The study aims to draw the public's attention to the fact that just moderate levels of drinking, e.g. one bottle of wine per week can put people at risk of cancer, particularly breast cancer. The authors highlight that this is an important issue as breast cancer is the most commonly occurring cancer in women in the UK.

The authors also found that drinking three bottles of wine per week (approximately half a bottle per day) - a level known to increase the risks of a wide range of different health problems—was associated with an increase of absolute lifetime cancer risk to 1.9% in men and 3.6% in women, or 19 in 1,000 men and 36 in 1,000 women, respectively. This is equivalent to smoking roughly eight cigarettes per week for men and 23 cigarettes per week for [women](#).

Dr. Hydes said: "We must be absolutely clear that this study is not saying that drinking alcohol in

moderation is in any way equivalent to smoking. Our finds relate to lifetime risk across the population. At an individual level, cancer risk represented by drinking or smoking will vary and for many individuals, the impact of ten units of alcohol (one bottle of wine) or five to ten cigarettes may be very different." Provided by BioMed Central

In order to calculate the possible lifetime cancer risk associated with consuming ten units of alcohol or ten cigarettes per week, the authors used lifetime cancer risk data from Cancer Research UK (based on data provided by the UK's Office for National Statistics, ISD Scotland, which provides health information, health intelligence, statistical services and advice to support the National Health Service, Welsh Cancer Intelligence and Surveillance Unit, and the Northern Ireland Cancer Registry), previously published data on the number of cancers in the population that can be attributed to tobacco and alcohol and relative cancer risk data for moderate levels of alcohol and tobacco use.

The authors caution that the study is not a comparison of the overall mortality of smoking versus alcohol as it did not take into account other non-cancer smoking or alcohol-related outcomes, such as respiratory, cardiovascular or liver disease.

Dr. Hydes said: "Our estimation of a cigarette equivalent for alcohol provides a useful measure for communicating possible cancer risks that exploits successful historical messaging on smoking. It is well established that heavy drinking is linked to cancer of the mouth, throat, voice box, gullet, bowel, liver and breast. Yet, in contrast to smoking, this is not widely understood by the public. We hope that by using cigarettes as the comparator we could communicate this message more effectively to help individuals make more informed lifestyle choices."

**More information:** A comparison of gender-linked population cancer risks between alcohol and tobacco: how many cigarettes are there in a bottle of wine? *BMC Public Health* (2019). DOI: [10.1186/s12889-019-6576-9](https://doi.org/10.1186/s12889-019-6576-9)

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