

RESEARCH ARTICLE

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A comparison of gender-linked population cancer risks between alcohol and tobacco: how many cigarettes are there in a bottle of wine?

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Abstract

Background: In contrast to our knowledge about the number of cancers attributed to smoking, the number of cancers attributed to alcohol is poorly understood by the public. We estimate the increase in absolute risk of cancer (number of cases per 1000) attributed to moderate levels of alcohol, and compare these to the absolute risk of cancer attributed to low levels of smoking, creating a ‘cigarette-equivalent of population cancer harm’.

Methods: Alcohol and tobacco attributable fractions were subtracted from lifetime general population risks of developing alcohol- and smoking-related cancers, to estimate the lifetime cancer risk in alcohol-abstaining non-smokers. This was multiplied by the relative risk of drinking ten units of alcohol or smoking ten cigarettes per week, and increasing levels of consumption.

Results: One bottle of wine per week is associated with an increased absolute lifetime cancer risk for non-smokers of 1.0% (men) and 1.4% (women). 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). Gender differences result from levels of moderate drinking leading to a 0.8% absolute risk of breast cancer in female non-smokers.

Conclusions: One bottle of wine per week is associated with an increased absolute lifetime risk of alcohol-related cancers in women, driven by breast cancer, equivalent to the increased absolute cancer risk associated with ten cigarettes per week. These findings can help communicate that moderate levels of drinking are an important public health risk for women. The risks for men, equivalent to five cigarettes per week, are also of note.

Keywords: Alcohol, Smoking, Tobacco, Cancer, Breast cancer

