

## **Alcohol consumption as a cause of cancer.**

[Connor J](#)<sup>1</sup>.

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### **Abstract**

#### **BACKGROUND AND AIMS:**

There is increasing research evidence about the causal role of alcohol in cancer, accompanied by unclear and conflicting messages in the media. This paper aimed to clarify the strength of the evidence for alcohol as a cause of cancer, and the meaning of cause in this context.

#### **METHODS:**

Recent epidemiological and biological research on alcohol and cancer was reviewed and summarized, drawing upon published meta-analyses identified from the Medline database and the archives of the International Agency for Research on Cancer. More recent epidemiological studies not included in these publications were also reviewed. A brief description of the nature of causal inference in epidemiology was used to frame discussion of the strength of the evidence that alcohol causes cancer, and contrast this with the case for a protective association of alcohol with cardiovascular disease.

#### **RESULTS:**

The usual epidemiological understanding of a cause is a factor that increases the incidence of a condition in the population. In the context of a body of epidemiological evidence of an association of alcohol consumption with a disease, the inference that it is a causal association requires alternative explanations of the observed finding to be judged unlikely. Even without complete knowledge of biological mechanisms, the epidemiological evidence can support the judgement that alcohol causes cancer of the oropharynx, larynx, oesophagus, liver, colon, rectum and breast. The measured associations exhibit gradients of effect that are biologically plausible, and there is some evidence of reversibility of risk in laryngeal, pharyngeal and liver cancers when consumption ceases. The limitations of cohort studies mean that the true effects may be somewhat weaker or stronger than estimated currently, but are unlikely to be qualitatively different. The same, or similar, epidemiological studies also commonly report protection from cardiovascular disease associated with drinking but a high level of scepticism regarding these findings is now warranted.

#### **CONCLUSIONS:**

There is strong evidence that alcohol causes cancer at seven sites in the body and probably others. Current estimates suggest that alcohol-attributable cancers at these sites make up 5.8% of all cancer deaths world-wide. Confirmation of specific biological mechanisms by which alcohol increases the incidence of each type of cancer is not required to infer that alcohol is a cause.

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**KEYWORDS:**

Alcohol; cancer; cardiovascular disease; causal inference; cohort studies; epidemiology; evidence-based policy

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