



RESEARCH SUMMARY
Date Compiled: April 2019

Key Takeaways from Included Research

- A “social math” study found that the consumption of one bottle of wine per week was 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.
- A large-scale study, of over 500,000 Chinese adults, found that even light-to moderate alcohol consumption uniformly increased blood pressure and stroke risk, and appeared to have little net effect on the risk of myocardial obstruction. The study casts additional, serious doubt on the purported beneficial health effects of moderate alcohol consumption.
- A study in Finland found that regular, successive increases in alcohol taxes led to decreases in overall alcohol consumption, which in turn were associated with lower rates of death due to traumatic brain injury (TBI).
- An analysis from the World Health Organization finds that the advertising of alcohol (as well as unhealthy foods) goes against the underlying values of sport, since these products are major risk factors for noncommunicable diseases. The authors suggest that “the sports industry embrace a socially-responsible approach to commercial sponsorship and advertising, an approach which emphasizes the future health of sports’ fans, families and communities.”
- An Ontario-based study of alcohol control deregulation found that alcohol-attributed ED visits increased 17.8% over the study period; over twice the rate of increase for all ED visits. Increased hours of operation and numbers of alcohol outlets within a given area were positively associated with higher rates of alcohol-attributable ED visits.

**A COMPARISON OF GENDER-LINKED POPULATION CANCER RISKS BETWEEN ALCOHOL AND TOBACCO:
HOW MANY CIGARETTES ARE THERE IN A BOTTLE OF WINE?**

March 2019

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.

Source:

Hydes, T. J., Burton, R., Inskip, H., Bellis, M. A., & Sheron, N. (2019). 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*, 19(1), 316.

Full free text: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-019-6576-9>

Additional media coverage:

[How many cigarettes are in a bottle of wine?](#) (ABC-Australia)

CONVENTIONAL AND GENETIC EVIDENCE ON ALCOHOL AND VASCULAR DISEASE AETIOLOGY: A PROSPECTIVE STUDY OF 500 000 MEN AND WOMEN IN CHINA

April 2019

Summary

Background: Moderate alcohol intake has been associated with reduced cardiovascular risk in many studies, in comparison with abstinence or with heavier drinking. Studies in east Asia can help determine whether these associations are causal, since two common genetic variants greatly affect alcohol drinking patterns. We used these two variants to assess the relationships between cardiovascular risk and genotype-predicted mean alcohol intake in men, contrasting the findings in men with those in women (few of whom drink).

Methods: The prospective China Kadoorie Biobank enrolled 512 715 adults between June 25, 2004, and July 15, 2008, from ten areas of China, recording alcohol use and other characteristics. It followed them for about 10 years (until Jan 1, 2017), monitoring cardiovascular disease (including ischaemic stroke, intracerebral haemorrhage, and myocardial infarction) by linkage with morbidity and mortality registries and electronic hospital records. 161 498 participants were genotyped for two variants that alter alcohol metabolism, ALDH2-rs671 and ADH1B-rs1229984. Adjusted Cox regression was used to obtain the relative risks associating disease incidence with self-reported drinking patterns (conventional epidemiology) or with genotype-predicted mean male alcohol intake (genetic epidemiology—i.e, Mendelian randomisation), with stratification by study area to control for variation between areas in disease rates and in genotype-predicted intake.

Findings: 33% (69 897/210 205) of men reported drinking alcohol in most weeks, mainly as spirits, compared with only 2% (6245/302 510) of women. Among men, conventional epidemiology showed that self-reported alcohol intake had U-shaped associations with the incidence of ischaemic stroke (n=14 930), intracerebral haemorrhage (n=3496), and acute myocardial infarction (n=2958); men who reported drinking about 100 g of alcohol per week (one to two drinks per day) had lower risks of all three diseases than non-drinkers or heavier drinkers. In contrast, although genotype-predicted mean male alcohol intake varied widely (from 4 to 256 g per week—i.e, near zero to about four drinks per day), it did not have any U-shaped associations with risk. For stroke, genotype-predicted mean alcohol intake had a continuously positive log-linear association with risk, which was stronger for intracerebral haemorrhage (relative risk [RR] per 280 g per week 1.58, 95% CI 1.36–1.84, p<0.0001) than for ischaemic stroke (1.27, 1.13–1.43, p=0.0001). For myocardial infarction, however, genotype-predicted mean alcohol intake was not significantly associated with risk (RR per 280 g per week 0.96, 95% CI 0.78–1.18, p=0.69). Usual alcohol intake in current drinkers and genotype-predicted alcohol intake in all men had similarly strong positive associations with systolic blood pressure (each p<0.0001). Among women, few drank and the studied genotypes did not predict high mean alcohol intake and were not positively associated with blood pressure, stroke, or myocardial infarction.

Interpretation: Genetic epidemiology shows that the apparently protective effects of moderate alcohol intake against stroke are largely non-causal. Alcohol consumption uniformly increases blood pressure and stroke risk, and appears in this one study to have little net effect on the risk of myocardial infarction.

Source:

Millwood, I., Walters, R. G., Mei, X., Guo, Y., Yang, L., Bian, Z., et al. (2018). Conventional and genetic evidence on alcohol and vascular disease aetiology: Prospective study of 500,000 Chinese adults. *Lancet*.

Free full text: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)31772-0/fulltext#seccestitle10](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31772-0/fulltext#seccestitle10)

Additional media coverage:

[Even one alcoholic drink a day can raise risk of stroke, study says](#) (CNN)

THE ASSOCIATION BETWEEN ALCOHOL ACCESS AND ALCOHOL-ATTRIBUTABLE EMERGENCY DEPARTMENT VISITS IN ONTARIO, CANADA

March 2019

Background and Aims: The availability of alcohol through retail outlets is associated with alcohol-related harms, but few studies have demonstrated a causal relationship. We investigated the association between alcohol availability and alcohol-attributable emergency department (ED) visits in the province of Ontario during a period of deregulation of controls on the number of alcohol outlets.

Design: Cross sectional and pre-post design

Setting and participants: The study used data from two time periods: pre-deregulation (2013-2014) and post-deregulation (2016-2017), to compare rates of ED visits for 513 defined geographic regions in Ontario Canada, called Forward Sortation Areas (FSAs).

Measurements: The primary outcome was the age-standardized rates of alcohol-attributable ED visits. We compiled a list of all alcohol retail outlets in Ontario during 2014 and 2017 and matched

them to their corresponding FSA. We fit mixed-effects Poisson regression models to assess: (a) the cross-sectional association between number of outlets and hours of operation and ED visits; (b) the impact of deregulation on ED visits using a difference-in-difference approach.

Findings: Alcohol-attributed ED visits increased 17.8% over the study period; over twice the rate of increase for all ED visits. Increased hours of operation and numbers of alcohol outlets within a FSA were positively associated with higher rates of alcohol-attributable ED visits. The increase in ED visits attributable to alcohol was 6% (IRR 1.06; 95% CI 1.04-1.08) greater in FSAs that introduced alcohol sales in grocery stores following deregulation compared with FSAs that did not.

Conclusions: Deregulation of alcohol sales in Ontario, Canada in 2015 was associated with increased emergency department visits attributable to alcohol.

Source:

Myran, D. T., Chen, J. T., Giesbrecht, N., & Rees, V. W. (2019). The association between alcohol access and alcohol-attributable emergency department visits in Ontario, Canada. *Addiction*.

Additional media coverage:

[Expanding alcohol sales to grocery stores sends more people to hospital: Study](#) (Ottawa Citizen)

FATAL TRAUMATIC BRAIN INJURIES DURING 13 YEARS OF SUCCESSIVE ALCOHOL TAX INCREASES IN FINLAND – A NATIONWIDE POPULATION-BASED REGISTRY STUDY

April 2019

Abstract

We sought to investigate how increases in alcohol taxation and changes in alcohol consumption were associated with the incidence rate of fatal traumatic brain injuries (TBI) in Finland during the years 2004–2016. Nationwide, mandatory cause of death database covering all deaths in Finland was searched for all deaths related to TBIs (ICD-10: S06.X) in persons ≥ 16 years of age during 2004–2016. Study period included 28,657,870 person-years and 325,514 deaths of which 12,110 were TBI-related. Occurrence rates were standardized to European 2013 standard population. Data for alcohol consumption were obtained from the National Institute for Health and Welfare and for alcohol taxation from Ministry of Finance, Finland. Standardized incidence rate of TBI-related death was 22.0 (95% CI 21.61–22.38) per 100,000 person-years. Overall alcohol consumption decreased on average by 1.2% annually. Concurrently, the overall incidence rate of fatal TBIs decreased by 4.1% annually (by 4.3% in men and 2.4% in women). There was an association between overall alcohol consumption and TBI-related mortality rate ($p < 0.001$). Tax-rate increases of all beverage types were associated with decreased incidence rate of TBI-related death in men ($p < 0.001$), in women ($p < 0.036$) and overall ($p < 0.001$). In this population-based study, we report that during 13 years of successive alcohol tax increases, overall alcohol consumption has decreased in parallel with a reduction in the incidence rate of fatal TBIs in Finland.

Source:

Posti, J. P., Sankinen, M., Sipilä, J. O., Ruuskanen, J. O., Rinne, J., Rautava, P., & Kytö, V. (2019). Fatal traumatic brain injuries during 13 years of successive alcohol tax increases in Finland—a nationwide population-based registry study. *Scientific Reports*, 9(1), 5419.

Free full text: <https://www.nature.com/articles/s41598-019-41913-8>

COMMERCIAL DETERMINANTS OF HEALTH: ADVERTISING OF ALCOHOL AND UNHEALTHY FOODS DURING SPORTING EVENTS

March 2019

Introduction

Noncommunicable diseases, including cardiovascular and respiratory diseases, cancers and type 2 diabetes, cause an estimated 41 million deaths per year globally, of which 15 million occur between the ages of 30 to 70 years. However, most of these premature deaths are avoidable and noncommunicable disease prevention is thus a global priority. The main prevention strategies focus on the risks associated with poor diet, tobacco use, alcohol consumption and physical inactivity. As evidence on the social determinants of health has become critical to the understanding of noncommunicable disease epidemiology, we also need to consider the commercial determinants of health when developing risk reduction strategies. In noncommunicable disease prevention, an emphasis is often placed on lifestyles and personal responsibility for addressing risk factors. This approach ignores the limited control that many people have over their circumstances and their exposure to the marketing activities of transnational corporations.

Sport is often presented as a way for people to lead more active, healthier lives. Yet many sports have become closely entwined with products that harm health. Companies producing alcohol, sugar-sweetened beverages, and foods high in fat, sugar and salt, often market their products through professional sports leagues, in competitions and events across the world. We know that consumption of these products contributes to the global burden of noncommunicable disease. We now need to better understand the role of corporate marketing and sponsorship strategies in their promotion of such products.

We therefore apply a public health perspective to the commercial sponsorship of sport. We suggest that policy-makers who wish to reverse the noncommunicable disease burden should consider how sport has been used to promote products that harm health and whether regulation may be required to control this marketing

Source:

Ireland, R., Bunn, C., Reith, G., Philpott, M., Capewell, S., Boyland, E., et al. (2019). Commercial determinants of health: Advertising of alcohol and unhealthy foods during sporting events. *Bulletin of the World Health Organization*, 97, 290-295.

Free full text: <https://www.who.int/bulletin/volumes/97/4/18-220087/en/#.XKONNdmZPaR.twitter>