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## Sweden

Sweden's Supreme Court delivered a ground breaking verdict in July, granting a Danish online wine retailer the right to sell alcoholic beverages directly to Swedish households and businesses.

Systembolaget, the state-run alcohol company, sued Danish online retailer Winefinder and its Swedish parent company to stop it from selling and delivering alcohol to Swedish customers, but the Supreme Court ruled against it in a precedent-setting decision.

Systembolaget runs 450 stores across Sweden, with a stated aim to limit alcohol sales. It has restricted opening hours and does not advertise alcohol or put items on sale.

The Supreme Court's decision, which cannot be overruled, is expected to significantly affect Sweden's alcohol market. By allowing direct sales to Swedish households and businesses, the ruling opens the door for increased competition and consumer choice.

## Nigeria

In Lagos, the state government has declared a total clampdown on alcohol sales by hawkers trading in parks, garages, roadsides in order to discourage drink driving. In the last month, Lagos Environmental Sanitation Corps seized alcoholic drinks worth millions of naira during a recent raid on parks and garages in the state, with the government expressing concern over the alarming rate of liquor drinks sale in garages, motor parks, roadsides and in traffic. The Lagos State is to sustain its ongoing enforcement operations, prosecuting violators in mobile courts.

## South Africa

In South Africa, the National Liquor Traders Association says it is ready to seek legal advice should its forthcoming talks with the Limpopo government deadlock. Limpopo is the northernmost province of South Africa.

The Limpopo Liquor Act of 2009 has moved the cut-off time for the trade of alcohol from two o'clock in the morning to midnight. There are growing concerns that the legislation that forbids the sale of alcohol after midnight in Limpopo will harm the province's economy and could lead to job losses.

The act is due to come into effect on the first of August.

## Taiwan

The Ministry of Health and Welfare in Taipei has introduced a set of safe alcohol consumption guidelines. A ministry spokesperson discussed the standards at a joint news conference with the nation's top hospitals and groups against substance use, at the ministry in Taipei.

The guidelines suggest that men drink no more than an equivalent of 508ml of beer per day and women drink an equivalent of no more than 254ml of beer, defined as two units for men and one unit for women. The ministry's Department of Mental Health Director Chen Liang-yu said that the advisory makes a distinction between sex, as an average woman's metabolism is less efficient at breaking down alcohol than that of an average man.

## Reduced stress-related neural network activity mediates the effect of alcohol on cardiovascular risk

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**Citation** Journal of the American College of Cardiology, 81(24):2315-2325; 2023.doi.org/ 10.1016/j.jacc.2023.04.015

### Author's Abstract

**Background:** Chronic stress associates with major adverse cardiovascular events (MACE) via increased stress-related neural network activity (SNA). Light/moderate alcohol consumption (ACI/m) has been linked to lower MACE risk, but the mechanisms are unclear.

**Objectives:** The purpose of this study was to evaluate whether the association between ACI/m and MACE is mediated by decreased SNA.

**Methods:** Individuals enrolled in the Mass General Brigham Biobank who completed a health behaviour survey were studied. A subset underwent 18F-fluorodeoxyglucose positron emission tomography, enabling assessment of SNA. Alcohol consumption was classified as none/minimal, light/moderate, or high (< 1, 1-14, or >14 drinks/week, respectively).

**Results:** Of 53,064 participants (median age 60 years, 60% women), 23,920 had no/minimal alcohol consumption and 27,053 ACI/m. Over a median follow-up of 3.4 years, 1,914 experienced MACE. ACI/m (vs none/minimal) associated with lower MACE risk (HR: 0.786; 95% CI: 0.717-0.862;  $P < 0.0001$ ) after adjusting for cardiovascular risk factors. In 713 participants with brain imaging, ACI/m (vs none/minimal) associated with decreased SNA (standardized beta -0.192; 95% CI: -0.338 to -0.046;  $P = 0.01$ ). Lower SNA partially mediated the beneficial effect of ACI/m on MACE (log OR: -0.040; 95% CI: -0.097 to -0.003;  $P < 0.05$ ). Further, ACI/m associated with larger decreases in MACE risk among individuals with (vs without) prior anxiety (HR: 0.60 [95% CI: 0.50-0.72] vs 0.78 [95% CI: 0.73-0.80];  $P$  interaction = 0.003).

**Conclusions:** ACI/m associates with reduced MACE risk, in part, by lowering activity of a stress-related brain network known for its association with cardiovascular disease. Given alcohol's potential health detriments, new interventions with similar effects on SNA are needed.

### Forum Summary

The brain is the central organ of stress and adaptation to stress because it perceives and determines what is threatening, as well as the

behavioural and physiological responses to the stressor. A new study aimed to investigate the whether the association between light to moderate consumption (1-2 standard drinks/day) and lower risk of cardiovascular events such as heart attacks and strokes. The study suggested that while heavier alcohol consumption acts on the amygdala to increase stress related neural activity that increases blood pressure and heart rate, light to moderate alcohol consumption effectively decreases stress related neural activity and hence the risk of major cardiovascular events.

In addition, and importantly, this study points to alcohol-mediated effects on the brain, which may not only be relevant for risk of major cardiovascular disease events but also for various neurological disorders currently occurring in increasingly higher incidence such as dementia and Parkinson's disease. Despite the usual limitations of self-reported intake at enrolment, which did not distinguish between beverage type or customary drinking pattern but with statistical adjustments for age, sex, and CVD risk factors, the study substantiates a > 20% decrease in major adverse cardiovascular events (MACE) in light/ moderate drinkers compared to those who drank no/minimal alcohol. Notably, the investigators' sensitivity analyses on the nondrinking subset defangs the usual 'sick quitter' arguments.

### Forum comments

#### Background including previous results

The brain is the central organ of stress and adaptation to stress because it perceives and determines what is threatening, as well as the behavioural and physiological responses to the stressor. The adult as well as developing brain possesses a remarkable ability to show structural and functional plasticity in response to stressful and other experiences. Stress can, however, cause an imbalance of neural circuitry. This imbalance, in turn, affects systemic physiology via neuroendocrine, autonomic, immune and metabolic mediators (McEwen 2017).

Cardiovascular diseases (CVDs) have collectively remained the leading causes of death worldwide and substantially contribute to loss of health and excess health system costs (Vaduganathan et al. 2022). The Global Burden of Disease study suggests that the following are the leading environmental, metabolic, and behavioural risks for CVDs: ambient

particulate matter air pollution, household air pollution from solid fuels, lead exposure, low or high temperature, high systolic blood pressure, high low-density lipoprotein cholesterol (LDL-C), high body mass index (BMI), high fasting plasma glucose, kidney dysfunction, dietary risks, tobacco smoking, second-hand tobacco smoke, harmful alcohol consumption, and low physical activity.

Chronic stress, both at the individual and environmental level, is also known to be associated with CVD risk (Pedersen et al. 2017). Specifically, chronic psychological stress has been associated with higher risk of obesity (Scott et al. 2012), hypertension (Rod et al. 2009), diabetes (Falco et al. 2015, Novak et al. 2013), and poor CVD outcomes, including myocardial infarction (Alcantara et al. 2015, Rosengren et al. 2004, Bot et al. 2017), and stroke (Booth et al. 2015). Perceived adverse neighbourhood environment conditions as a type of chronic psychosocial stress has also been associated with obesity (Scott et al. 2012, Powell-Wiley et al. 2012) and other CVD risk factors (Diez Roux et al. 2016).

Since chronic psychosocial stress is associated with many metabolic and behavioural risk factors such as obesity and hypertension, chronic psychosocial stress may either have a direct or an indirect effect on CVD risk. So far, experimental studies have provided evidence that moderate alcohol consumption will have direct metabolic effects, which may beneficially contribute to a reduced risk for CVD. These metabolic changes include an increased HDL cholesterol levels with increase cholesterol efflux activities (Beulens et al. 2004), improved glucose homeostasis resulting in decreased HbA1c levels (Schrieks et al. 2015), reduced levels of fibrinogen (Sierksma et al. 2002) resulting in a decreased clotting tendency of the circulation and increased antioxidant and reduced inflammatory activities (Arranz et al. 2012). These metabolic changes may well explain a considerable part of the mechanistic basis for CVD protection provided by moderate alcohol consumption (Mukamal et al. 2005).

Chronic psychosocial stress may also contribute to CVD risk in a direct way. Some limited experimental research may suggest that stress hormones may be beneficially affected by a moderate dose of alcohol with dinner after a mental stress test (Schrieks et al. 2016). Similarly, unpleasant ambiance-induced mood may be improved by moderate alcohol consumption through autonomic nervous system activity (Schrieks et al. 2014).

Efforts to identify additional direct mechanisms by which chronic psychosocial stress may increase CVD risk have recently focused on identifying parts of the brain that may be activated by chronic stress (Miller et al. 2011). The amygdala has been shown to be an important part of the neural network that responds to threatening situations and its activity appears to be heightened in the setting of social stressors related to peer evaluation with associated increases in pro-inflammatory cytokines (Muscatell et al. 2015). Recent work has also demonstrated that resting amygdalar activity is associated with worsening aortic vascular inflammation and greater risk for subsequent CVD events (Tawakol et al. 2007). Powell-Wiley et al. (2021) has subsequently shown that amygdalar activity or chronic stress-related neural activity, associates with subclinical CVD risk in a community-based cohort.

Chronic stress-related neural activity may in part be mediated by various brain systems. Apart from the amygdala, the brain cerebrospinal fluid system was also suggested to play an important role in moderate alcohol induced improvement of the brain and brain functioning. Experimental rat studies showed that acute low dosages of alcohol increased the diffusive movement of waste metabolites via an increased arterial endothelial-smooth muscle cell dilative reactivity without affecting blood brain barrier integrity. Prolonged induction of this system under chronic high alcohol exposure conditions, however, caused oxidative damage of the arterial endothelial-smooth muscle layers resulting in cerebral amyloid-like angiopathy leading to dysfunction of the blood brain barrier and impaired waste metabolites movement (Cheng et al. 2019).

The current epidemiological study was undertaken to assess whether there is a relationship between chronic stress-related neural activity and major adverse cardiovascular events (MACE) and moreover to assess whether this association was partially mediated by an alcohol-induced decrease in stress-related neural network activity.

### Comments on current methodology

The main group of patients consisted of over 50,000 individuals of the Mass General Brigham (MGS) Biobank recruiting people of about 60 years of age through hospitals. Alcohol consumption was assessed by questionnaire distinguishing between none/minimal (<1 drink/week), light/moderate (1-14 drinks/week) and high (>14 drinks/week) alcohol consumption during the previous year.

Analysis within this main group showed a reduced relative risk for major adverse cardiovascular events (MACE) being associated with light to moderate alcohol consumption and as compared to the none/minimal drinking group. This beneficial association was not significantly different for the various MACE outcomes; a roughly 25% risk reduction was observed for coronary MACE, acute coronary syndrome MACE, heart failure, peripheral vascular disease and stroke. Summarily, the authors mention that all cancer risk was increased in light/moderate alcohol consumers. Heavier alcohol consumers were excluded from this specific analysis since the group was very small and the group was irrelevant in terms of hypothesis testing.

Interestingly though, the authors investigated whether potential abstainer bias may have played a role in the analysis. Using a sensitivity analysis excluding non-drinkers yielded similar results both when comparing light/moderate alcohol consumption versus minimal alcohol consumption excluding abstainers as well as comparing light alcohol consumption versus none/minimal alcohol consumption.

The second part of the study consisted of a subpopulation of 754 participants that underwent PET/CT analysis (an imaging test that shows the metabolic or biochemical function of your brain) for cancer surveillance or diagnosis excluding those with brain tumours. Subject characteristics have been shown for the total MGS population, but unfortunately not for the specific subgroup of patients that were evaluated for their stress-related neural network activity (SNA), specifically unfortunate since subject characteristics were already different between the none/minimal drinking group and the light/moderate drinking group in the first overall analysis. Also, the first analysis of the larger group used a slightly different set of covariables than those applied for the alcohol stress-associated neural network activity analysis.

The subpopulation showed a U-shaped association between alcohol consumption and SNA, whereby SNA is the ratio of the amygdalar activity per ventromedial prefrontal cortex activity. The ratio change was caused by a changed amygdala activity rather than an overall change in brain activity (represented by the ventromedial prefrontal cortex activity). Metabolic brain activity tended to be reduced in high alcohol consumers though.

Interestingly, persons with a prior history of anxiety (greater chronic stress), a higher ANS and increased

risk of MACE, showed a greater relative decrease in incident MACE associated with light/moderate alcohol consumption.

This study suggests that the benefit of light/moderate alcohol consumption on CVD risk may be partly related to its ability to attenuate stress-related neural network activity. However, we should be aware that this associative relation would have to meet several conditions such as temporal relationships, strength and dose-dependency of the association, consistency, specificity and biological plausibility as pointed out in the accompanying editorial (de Gaetano et al. 2023). Biological plausibility may be further substantiated in more experimental settings showing cause and effect relationship.

Alternatively, and importantly, this study points to alcohol-mediated effects on the brain, which may not only be relevant for MACE. Various neurological disorders currently occurring in increasingly higher incidences may be associated with moderate alcohol consumption possibly through the mechanism investigated in this study. These neurological disorders include amongst others dementia (Ruitenberget al. 2002, Zhong et al. 2022) and possibly Parkinson's disease (Jiménez-Jiménez et al. 2019).

### Specific comments from Forum members

Forum Member Ellison commented that "as someone working with alcohol and health for many decades, I have often been asked: "I know you have said that moderate wine consumption may lower the risk of heart disease, but how much of this is just due to relaxation and the lowering of stress that may result from a glass or two of wine with dinner?" My answer was always: "We know that much of the reduction in risk of heart disease is due to specific effects of alcohol and polyphenols, but we just don't know about stress." Now, with this paper by Mezue et al. (2023), we have some proof that alcohol modifies a number of brain functions related to stress.

As described by other Forum members, sustained stress effects on brain function have been shown to be risk factors for obesity, hypertension, and diabetes, all of which increase the risk of cardiovascular disease. Thus, part of the adverse effects of these factors may ultimately be related to stress. In addition, in regard to possible mechanisms, the authors describe a number of interconnected neural networks that are adversely affected by stress, and show that they may have direct effects

on the risk of cardiovascular disease. Moderate drinking appears to decrease such adverse effects.

As stated well in the Editorial Comment in the journal stimulated by this paper, “The discovery of a new possible mechanism of action suggests that moderate alcohol consumption can improve cardiovascular health by lowering the activity of a brain network associated with cardiovascular disease: a stimulating link among alcohol, brain, and the heart that deserves closer attention in future investigations” (de Gaetano 2023).

Forum Member Parente adds that “this important study offers a putative mechanism for the link between low and moderate alcohol consumption and decreased cardiovascular disease (CVD) risk. Despite the usual limitations of self-reported intake at enrolment, which did not distinguish between beverage type or customary drinking pattern but with statistical adjustments for age, sex, and CVD risk factors, the study substantiates a > 20% decrease in major adverse cardiovascular events (MACE) in light/ moderate drinkers compared to those who drank no/minimal alcohol (HR: 0.786; 95% CI: 0.717-0.862; P < 0.0001). Notably, the investigators’ sensitivity analyses on the nondrinking subset defangs the usual ‘sick quitter’ arguments.

Apart from cardiovascular effects conferred by modest drinking, the authors’ mechanistic findings regarding the neural network in this study further support wider adoption of methods that promote the relaxation response in people with hypertension and cardiovascular disease. A decade has passed since an American Heart Association study group’s tepid IIb classification of recommendation (COR) of transcendental meditation (TM) as a nonpharmacologic method of lowering blood pressure (Brook et al. 2013) – despite an effect size equivalent to that of aerobic exercise and other AHA-recommended methods, which might have warranted a IIa designation (Schneider 2013). Support for nonpharmacologic anxiolytic methods was given another boost in 2017 in an AHA scientific statement by Levine et al., entitled “Meditation and Cardiovascular Risk Reduction”, awareness of which has escaped at-risk populations, and perhaps their physicians. With the current study by Mezue et al., we now gain important insights into the effects of modest alcohol consumption on the downregulation of neural networks and neural-leukopoietic-arterial axes to lower CVD risk.

Forum Member Skovenborg recounts that “the Swedish neuroscientist and pioneer of cerebral blood flow studies in man, Professor David H. Ingvar, M.D., Ph.D., (1985) wrote a paper on “memory of the future”. Evidence is summarized that the frontal/prefrontal cortex handles the temporal organization of behaviour and cognition, and that the same structures house the action programs or plans for future behaviour and cognition. As these programs can be retained and recalled, they might be termed “memories of the future”. It is suggested that they form the basis for anticipation and expectation as well as for the short and long-term planning of a goal-directed behavioural and cognitive repertoire. This repertoire for future use is based upon experiences of past events and the awareness of a Now-situation, and it is continuously rehearsed and optimized. Professor Ingvar (1998) is also co-author of a study of the effect of moderate doses of alcohol on the brain. He suggested that a small dose of alcohol (one to two drinks) had the effect of associating problems of the past with a reduced sense of guilt. At the same time the small dose of alcohol renders the anticipation and expectations regarding the future more optimistic and less influenced by anxiety. A combination of these effects would have a stress-reducing and mood lifting effect.”

Forum Member Mattivi considers that “this is a very interesting article for the results highlighted, which requires, in my view, further work to investigate the putative mechanisms. It might be useful to specifically study the levels of brain chemical compounds that act as neurotransmitters at chemical synapses, such as serotonin, dopamine and GABA, whose pathways (and receptors) are affected by ethanol exposure, as demonstrated by conclusive animal experiments as reviewed by McBride and Li (1998). Also in humans, as the neuroscientists team of University of Heidelberg have reviewed (Vengeliene et al. 2008), virtually all brain neurotransmission seems to be affected by alcohol consumption, which suggests in my view that further molecular pharmacology studies could be important also to better investigate and understand the mechanisms of anti-stress effects.”

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## APSAD Alcohol and Drugs Conference

The Australasian Professional Society on Alcohol and other Drugs is holding a conference 12-15 November 2023. The theme for the conference is Unity In Diversity. This theme speaks to both the great diversity in APSAD's client groups including Aboriginal and Torres Strait Islander people, refugees, culturally and linguistically diverse people, and the LGBTQIA+ rainbow community; and also, to the crucial contributions of professionals from a range of backgrounds including researchers, public health professionals, policy

makers, clinicians and peers, all with the common goal of improving outcomes for people who use alcohol and other drugs.

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SCIENTIFIC DRUG AND ALCOHOL CONFERENCE

**APSAD ADELAIDE 2023**

*'Unity in Diversity'*



## Alcohol consumption and risks of more than 200 diseases in Chinese men

### Authors

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### Citation

Nature Medicine, 29:1476–1486; 2023 doi.org/10.1038/s41591-023-02383-8

### Author's Abstract

**Introduction and Aim** Alcohol consumption accounts for ~3 million annual deaths worldwide, but uncertainty persists about its relationships with many diseases.

**Method** We investigated the associations of alcohol consumption with 207 diseases in the 12-year China Kadoorie Biobank of >512,000 adults (41% men), including 168,050 genotyped for ALDH2-rs671 and ADH1B-rs1229984, with >1.1 million ICD-10 coded hospitalized events. At baseline, 33% of men drank alcohol regularly.

**Results** Among men, alcohol intake was positively associated with 61 diseases, including 33 not defined by the World Health Organization as alcohol-related, such as cataract ( $n = 2,028$ ; hazard ratio 1.21; 95% confidence interval 1.09–1.33, per 280 g per week) and gout ( $n = 402$ ; 1.57, 1.33–1.86). Genotype-predicted mean alcohol intake was positively associated with established ( $n = 28,564$ ; 1.14, 1.09–1.20) and new alcohol-associated ( $n = 16,138$ ; 1.06, 1.01–1.12) diseases, and with specific diseases such as liver cirrhosis ( $n = 499$ ; 2.30, 1.58–3.35), stroke ( $n = 12,176$ ; 1.38, 1.27–1.49) and gout ( $n = 338$ ; 2.33, 1.49–3.62), but not ischemic heart disease ( $n = 8,408$ ; 1.04, 0.94–1.14). Among women, 2% drank alcohol resulting in low power to assess associations of self-reported alcohol intake with disease risks, but genetic findings in women suggested the excess male risks were not due to pleiotropic genotypic effects.

**Conclusions** Among Chinese men, alcohol consumption increased multiple disease risks, highlighting the need to strengthen preventive measures to reduce alcohol intake.

### Forum comments

#### Background including previous results

The relation between alcohol consumption and health is a complex one. Consuming alcohol in moderation has been associated with decreased overall mortality mainly caused by a reduced risk associated with cardiovascular diseases and other disorders like diabetes type II, dementia and certain cancers. Alcohol abuse and consuming alcohol at levels above moderate drinking guidelines is associated with increased risk for specific diseases.

The study recently published in Nature Medicine (Im et al., 2023) concerns the evaluation of a cohort of Chinese men and women and their risk for more than 200 diseases associated with their alcohol consumption. Contrary to many Western countries, China faces an increase in alcohol consumption. Chinese men reporting to consume alcohol in the last 12 months increased from 59% to 85% and yearly per capita alcohol consumption increased from 7.1 to 11.2 litres of pure alcohol based on WHO data (Manthey et al., 2019).

The motivation for this study is that the associations between alcohol consumption and disease may differ between Western and Chinese populations, because of drinking types of alcohol, patterns of consumption, patterns of diseases and differences in the ability to metabolize alcohol may differ between populations.

The cohort consisted of 512,724 Chinese, 41% of these, viz 210,217, were men with an average age of 52 + 11 years. During the 12.1 years of follow-up 134,641 men experienced at least one reported hospitalization event or death. In total 333,541 events were recorded in these 134,641 men over a 12.1-year period. This means that these Chinese men had on average about 2.5 disease events recorded over a 12-year time period. For comparison: in the US with 336 million inhabitants only 37 million hospitalizations occur, so 1 hospitalization per 10 Americans per year[1]. It seems that this Chinese cohort consisted of relatively unhealthy people. This is also suggested by Table 1, there it is shown that 20 – 30% of these Chinese men and women self-reported previous chronic disease. This is essentially different than most epidemiological studies into the association between alcohol consumption and disease outcome. Usually, cohorts start with apparently healthy persons. The occurrence of new diseases is monitored and after a follow-up period association with specific diseases is assessed. The authors do not report whether the data have been corrected for these previous chronic diseases nor for poor self-reported health.

Also, confounding factors need to be corrected for in epidemiological studies; other lifestyle factors may modify the alcohol consumption – disease relation. In this study the legend to Figure 2 indicates that the Cox models used were stratified by age and study area and adjusted for education and smoking. This is an unfortunate shortcoming of this study, since other potentially confounding factors

of which data have been provided in Table 1, have not been corrected for. These factors include intake of fresh fruit, physical activity, blood pressure and BMI. The observations reported may therefore be confounded by various other important life-style factors.

Only 33% of the men in this cohort (44,027) were regular drinkers. These drinkers reported an average of 286 g alcohol per week. This average is quite high, namely about 40 g of alcohol on average per day. The authors also indicate that under reporting may even have occurred in these heavy drinkers. The drinking categories used for men are non-drinker, ex-drinker, occasional drinker, less than 140 g/week, 140-280 g/week, 280-419 g/week and more than 420 g/week. The latter very high drinking category still represents about 20% (6/33) of the drinking population, the higher than moderately drinking men represent another 45% of the investigated group. So, in total 65% of this Chinese cohort represents men that drink more than Western drinking guidelines. The authors also report that they may have missed extreme problematic drinkers, a common problem in population-based cohort studies.

Interesting to see that again, as in most high-quality epidemiological studies, a J-shaped curve was observed between alcohol consumption and overall morbidity (Figure 2). Those drinking 100-300 g per week had a lower Hazard Ratio for the cohort's WHO alcohol-related diseases, the cohort's new alcohol-related diseases, all alcohol-related diseases and all morbidity as compared to non-drinkers (20% of the population). Unfortunately, all analyses have been performed comparing all current drinkers, mainly consisting of alcohol abusers (33% of the population), with occasional drinkers (38% of the population) who have a similar Hazard Ratio as those drinking up to 100 g of alcohol per week. When studying the effect of a life-style factor like alcohol consumption it is essential that the comparison is made to the control group consisting of non-drinkers, preferably those that have been abstaining all their life. Using other control groups, as has been done in this study, implies that the effects of moderate alcohol consumption are not evaluated.

Unfortunately, as the authors indicate, drinking pattern was not studied nor analysed in this paper. The huge consumption levels however, suggest that Chinese drinking may not fit into the classically perceived healthy way of alcohol consumption, which is; in moderation, viz. 10-30 g on average per

day (for men), preferably with a meal at several days of the week rather than the daily average all at once at one or two weekend nights.

Analyses performed in men were not performed in women. Reason indicated was that women had an extremely low alcohol consumption. This is unfortunate since the larger group of women mainly consisted of non-drinkers (64%), hardly any ex-drinkers (1%) and occasional drinkers (33%). Also, a large number of events (476,986) occurred in these women. It may have been a good population to study the effects of moderate alcohol consumption on disease outcomes in Chinese women.

### Comments on Mendelian Randomization

Mendelian randomization analysis (MR) is an emerging research method that uses genetic proxies to test if certain behaviours are linked to health outcomes. There has been a recent reliance on MR analysis studies in determining the risk of major causes of death and disability from alcohol consumption. MR analysis was subsequently used in this study to assess the causal relationship between alcohol consumption and disease outcome. The authors believe that this type of analyses better assesses causal relationships between alcohol consumption and disease outcome. Unfortunately, the authors do not discuss this methodology, which has been criticized extensively, specifically for its application in the alcohol-disease association.

MR has been criticized for its application in epidemiological alcohol research times (Mukamal et al., 2020, Mukamal and Beulens, 2022). MR analysis depends on assuming that the genetic variants: (i) are associated with the exposure (the relevance assumption); (ii) have no common cause with the outcome (the independence assumption); and (iii) have effects on the outcome that are solely mediated by the exposure (the exclusion restriction assumption). One of the basic problems with this technique therefore is that the variability in genotypes are not good indicators for alcohol consumption behaviour (assumption i) (Wehby et al., 2008), simply because genotype is not the only factor determining alcohol consumption. Also, ADH and ALDH alleles should not have an association with the outcomes independent from alcohol consumption (assumption ii). However, there seems to be an association between ADH and ALDH alleles and some disease outcomes independent from alcohol consumption (Zhang et al., 2023). Furthermore, the outcome (200 diseases in this case) should only be determined

by exposure to alcohol (assumption iii), which also seems highly unlikely. Yet another problem with MR is that only linear associations are to be detected, whereas more complex associations as a J-shaped association is simply not possible to be detected by this technique.

Interestingly, the authors state in their abstract: genetic findings in women suggested the excess male risks were not due to pleiotropic genotypic effects. Does this mean that pleiotropic genetic effects are less relevant for the effects observed and that other factors such as their high alcohol consumption are the most important factors involved?

Furthermore, Frost and Wald (2021) had critiqued a previous study by these authors that also used an MR analysis of the same genetic polymorphism (genes ADH1B and ADLH2) that affects tolerance to alcohol (Millswood et al. 2019). While conventional analyses supported a J-shaped relationship between alcohol consumption and vascular disease, MR did not so the authors concluded that the relationship was actually monotonic, despite 30 years of biological and epidemiological data to the contrary. In this study, MR analysis again did not support a J-shaped relationship between alcohol consumption and vascular disease, although conventional analyses did (Im et al. 2023).

Indeed, there is a fundamental weakness in MR analyses used in these two studies which tends to conceal a true underlying relationship. It arises because when a true relationship between an outcome and an exposure is non-monotonic (such as J-shaped), then the formation of groups around the inflection point may be too coarse to reveal the non-monotonic relationship (Frost and Wald 2021). Hence, this paper basically shows that alcohol abuse leads into a broad array of diseases in a primarily unhealthy elderly population of Chinese men who consume large amounts of alcohol. Accordingly, the paper should have been entitled "Alcohol abuse and risks of more than 200 diseases in apparently unhealthy Chinese men". This observation adds little new insight in the already existing knowledge on alcohol consumption and health.

### Specific Comments from Forum Members

Forum member Ellison suggest that "the points emphasized are on target, and raise questions about the applicability of the results of this paper to other cultures. I agree that the men in this study appear to be relatively heavy drinkers as they seem to have higher reported amounts of intake

that seen in most cohort studies in North America and Europe. Moreover, it is stated that the alcohol consumed was mainly spirits, and many of the men drank spirits every day and apparently in rather large amounts. This prevents the results of this study from being useful for setting guidelines for moderate drinkers.

Thus, in my opinion, there are a number of problems with the study: the first is the lack of reliable information on the drinking pattern and the type of alcohol consumed. We have very reliable data from many previous studies showing that the pattern of drinking is a strong factor, in that more frequent but moderate drinkers tend to have healthier outcomes. Consuming alcohol with or without food makes perhaps an even larger difference in health effects; and it is clear that the best health effects seem to be associated with the regular but moderate consumption of wine, and there were few wine drinkers in this study. Unfortunately, for this group of subjects, it is difficult to identify those who were consuming alcohol in a "healthy" fashion. Further, I have little faith in using MR methodology, especially when they use such data to attempt to support their findings when using self-reported amounts of alcohol.

If these men are mainly relatively heavy spirits drinkers, the findings of an increase (rather than a decrease) in heart disease may be true, but these are not seen in essentially all well-done population-based studies in the west.

Since we have incomplete information on what beverage is being consumed, in moderation or in binges, or whether or not it is in association with food, it is difficult for me to know what the relevance of this study is for western populations or even how to compare its results with those of other studies."

Forum Member Skovenborg suggests that "there are also several caveats associated to the studies of Chinese men. One issue is that spirits is the type of alcoholic drink preferred by Chinese men and previous research suggests that male drinkers in China average rather large amounts of alcohol, which they often consume in binges (Li et al., 2011). Further, the two alleles studied have been shown to affect more than just alcohol consumption, limiting their use as an instrumental variable (Chen et al. 2014)".

Forum Member de Gaetano considers that "the MR approach applied to alcohol epidemiology is questionable for (at least) two main reasons.

Indeed, when the genetic regulation of a phenotype is strong, stable over time and marginally influenced

by non-genetic (environmental) factors, the MR approach is more appropriate. But in the case of alcohol, MR investigates the association between a “genetic predisposition” to consume alcohol (at any dose) and the outcome. The polymorphisms that “regulate” its consumption actually have limited impact on the phenotype, which is on the contrary largely influenced by environmental/cultural factors.

Second, the crucial issue is whether drinking in moderation, say a drink a day, is better for the health than not drinking at all. From a MR perspective, this would require a targeted genetic analysis comparing light-drinkers vs abstainers, which has not been carried out so far, to the best of our knowledge. If we compare (any daily dose) drinkers vs non-drinkers, it may well happen that identified-by-polymorphisms drinkers (without any reliable distinction on consumption levels) are at higher outcome risk in comparison with identified by- polymorphisms non-drinkers”.

Forum Member Waterhouse suggests “that there are differential effects considering the type of beverage. In China, the predominant alcohol is by far is distilled Baiju (from fermented sorghum and other grains). They apparently asked their subjects about the type of beverage (see Assessment of alcohol consumption), but I saw no such data reported in Table 1, nor any discussion of wine (or any beverage type). My guess is that the population of wine drinkers was too small to call out, but beer might have been a factor. It seems they collected beverage type data simply to quantify alcohol consumption, but it seems it was an oversight to not distinguish the various types, especially since they do mention that wine might be cardioprotective due to the non-alcoholic components.”

### Concluding comments from Forum Members

Unfortunately, the evidence-base around the accuracy of MR analysis studies, increasingly employed by epidemiologists to identify ‘causal’ relationships between exposures of interest and various endpoints in the absence of actual experimental data, has become increasingly less black and white. For example, genetic variants are used as variables to investigate the causal relationship between potentially modifiable risk factors and health outcomes, such as cardiovascular diseases and more recently cancers, both alcohol-related and non-alcohol-related.

The usefulness of MR analysis studies of alcohol consumption and these diseases is, therefore,

limited. Although they can be employed as an additional or supplementary analytical methodology, their underlying assumptions are problematic if two dimensions are to be analysed simultaneously with one instrumental variable, as in the analyses on the impact of alcohol consumption on diseases such as ischaemic heart disease (Holmes et al. 2014, Frick and Rehm 2016). The validity of the results also depend that pleiotropic or other direct causal pathways do not explain the association with the outcome; pleiotropy occurs when one gene influences multiple, seemingly unrelated symptoms or traits. Further, even MR yields results with differing conclusions that are not necessarily reproducible (Han et al., 2013, Holmes et al., 2014). While they are less likely to be affected by unmeasured confounding or reverse causation than conventional observational or self-reported studies, they depend on underlying assumptions, the plausibility of which must be evaluated and the relevance of the results interpreted in consideration of other sources of evidence including conventional observational studies. This evaluation and consideration does not necessarily happen, however, as exemplified in a MR meta-analysis undertaken by Holmes et al. (2014), and incorrect conclusions can subsequently be drawn. The conclusions of such MR analyses are only sound if their underlying assumptions are sound and integrated and combined with conventional observational studies, and hence can often be controversial.

An excerpt from Ellison et al. (2021)

“There is little question that genetic analyses will progress markedly in the future, probably very quickly within the next few years. And, improved genetic scores will be developed and found to make major contributions to our efforts to identify persons at increased risk of developing CHD, as well as improving therapies. Genetic factors and Mendelian randomization studies represent a topic that will need frequent, ongoing reassessment as research progresses to be able to judge their (surely important) role in our prevention, diagnosis, and treatment of cardiovascular diseases.

However, even though we now have identified many genetic factors that we can include in MR analyses, it is clear that results from a variety of types of studies must be considered when attempting to judge health effects of alcohol. This is especially the case because type of beverage, drinking patterns (e.g., regular moderate versus binge drinking, rate of consumption, with or without food), smoking

and other lifestyle habits, diet, and many other environmental factors relate to the effects of alcohol consumption. Thus, the combination of data from observational studies, clinical trials, animal experiments, as well as MR analyses, will be needed to improve our knowledge on the relation of alcohol intake to health and disease; it remains a continuing challenge."

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[1] [www.statista.com/statistics/459718/total-hospital-admission-number-in-the-us/](http://www.statista.com/statistics/459718/total-hospital-admission-number-in-the-us/)

## Drinking alcohol in moderation is associated with lower rate of all-cause mortality in individuals with higher rather than lower educational level

Drinking alcohol in moderation has been a topic of interest in relation to its impact on all-cause mortality, and its association with socioeconomic status has been extensively explored. However, the potential modification of this association by educational level remains relatively unexplored. To address this gap, a recent study was conducted using data from the MORGAM Project, comprising 16 cohorts and a total of 142,066 participants.

The aim of this study was to assess the association between alcohol consumption patterns and the hazard of all-cause mortality across different educational levels. Educational level was categorized into three groups: lower (primary school), middle (secondary school), and higher (university/college degree).

Over a median follow-up period of 11.8 years, a total of 16,695 deaths occurred. The analyses revealed intriguing associations between alcohol intake and mortality rates based on educational level. Compared to lifelong abstainers, individuals who consumed 0.1-10 g/d of ethanol exhibited a 13% lower rate of death among those with higher educational level (HR=0.86; 95%CI: 0.74-1.02), an 11% lower rate among those with middle educational level (HR=0.89; 0.84-0.95), but only a 5% lower rate among those with lower educational level (HR=0.95; 0.89-1.02).

In contrast, while participants who consumed more than 20 g/d of ethanol had a 1% higher rate of death only if among those with higher educational level (HR=1.01; 0.82-1.25), a 10% higher rate was observed among those with middle educational level (HR=1.10; 1.02-1.19), and a 17% higher rate among those with lower educational level (HR=1.17; 1.09-1.26).

Moreover, the analysis revealed a nonlinear association between alcohol consumption and all-cause mortality, with a distinct J-shaped curve that varied across different educational levels. This relationship remained consistent across both sexes and different approaches to measuring alcohol consumption, including quantity, frequency, and beverage preference, with wine showing a more pronounced effect.

In conclusion, this large international study suggests that the well-known different impact of both moderate and high alcohol consumption on mortality rates also differs based on educational level. Moderate drinking ( $\leq 10$  g/d) was associated with a lower mortality rate, particularly among individuals with higher educational level, while heavy drinking was associated with a higher mortality rate, especially among those with lower educational level. These findings, besides confirming a distinct J shaped relationship between moderate alcohol intake and mortality, highlight the importance of targeted interventions and advice to reduce excessive alcohol intake, particularly among individuals with lower educational level.

Source: Di Castelnuovo A, Bonaccio M, Costanzo S, McElduff P, Linneberg A, Salomaa V, Männistö S, Ferrières J, Dallongeville J, Thorand B, Brenner H, Ferrario M, Veronesi G, Tamosiunas A, Grimsgaard S, Drygas W, Malyutina S, Söderberg S, Nordendahl M, Kee F, Grassi G, Dabboura S, Borchini R, Westermann D, Schrage B, Zeller T, Kuulasmaa K, Blankenberg S, Donati MB, Iacoviello L; MORGAM Study Investigators; de Gaetano G. Drinking alcohol in moderation is associated with lower rate of all-cause mortality in individuals with higher rather than lower educational level: findings from the MORGAM project. *Eur J Epidemiol.* 2023 Jun 30. doi.org/10.1007/s10654-023-01022-3

## Lifestyle, Diet, Wine And Health Congress, 18th - 20th of October, 2023

Thirty leading scientists from Europe, North America, South Africa and Australia will present the latest research on diet, healthy lifestyle and moderate consumption of wine.

Organised by the Wine Information Council (WIC) and Fundación para la Investigación del Vino y la Nutrición (FIVIN) this congress is the most important international scientific event about lifestyle, diet, wine and health aspects of the last five years.

The international Congress will be held in the Palacio de Congresos El Greco of the historic City of Toledo, Spain.

The scientific programme will include presentations on the Global Burden of Disease Study, Cardiovascular Health, Health Implications of Lifestyle Choices, Importance of Context when consuming wine moderately, the Keys to Longevity and how to translate Science to Society.

[lifestylewine2023.com](http://lifestylewine2023.com)

## Alcohol and vascular endothelial function: Biphasic effect highlights the importance of dose

Alcohol (ethanol) consumption has different influences on arterial disease, being protective or harmful depending on the amount and pattern of consumption. The mechanisms mediating these biphasic effects are unknown. Endothelial cells play a critical role in maintaining arterial health. A study compared the effects of moderate and high alcohol concentrations on endothelial cell function.

Human coronary artery endothelial cells (HCAEC) were treated with levels of ethanol associated with either low-risk/moderate drinking (i.e., 25 mM) or high-risk/heavy drinking (i.e., 50 mM) after which endothelial function was assessed. The effect of ethanol's primary metabolite acetaldehyde (10 and 25  $\mu$ M) was also determined.

Moderate ethanol exposure improved HCAEC barrier integrity as determined by increased transendothelial electrical resistance (TEER), inhibited cell adhesion molecule (CAM) mRNA expression, decreased inflammatory cytokine (interferon- $\gamma$  and interleukin 6) production, inhibited monocyte chemotactic protein-1 (MCP-1) expression and monocyte adhesion, and increased homeostatic Notch signaling. In

contrast, exposure to high-level ethanol (50 mM) decreased TEER, increased CAM expression and inflammatory cytokine production, and stimulated MCP-1 and monocyte adhesion, with no effect on Notch signaling. Reactive oxygen species (ROS) generation and endothelial nitric oxide synthase activity were increased by both alcohol treatments, and to a greater extent in the 50 mM ethanol group. Acetaldehyde-elicited responses were generally the same as those of the high-level ethanol group.

Ethanol has biphasic effects on several endothelial functions such that a moderate level maintains the endothelium in a nonactivated state, whereas high-level ethanol causes endothelial dysfunction, as does acetaldehyde. These data show the importance of dose when considering ethanol's effects on arterial endothelium, and could explain, in part, the J-shaped relationship between alcohol concentration and atherosclerosis reported in some epidemiologic studies.

Source: Rajendran, N.K., Liu, W., Cahill, P.A. & Redmond, E.M. (2023) Alcohol and vascular endothelial function: Biphasic effect highlights the importance of dose. *Alcohol: Clinical and Experimental Research*, 00, 1– 11. doi.org/10.1111/acer.15138

## Alcohol consumption and socioeconomic status associated with the risk of kidney cancer in a large Australian cohort study

Studies have shown an inverse association between alcohol consumption and kidney cancer risk. Researchers postulate that this inverse association may be further influenced by other risk factors.

Using an Australian cohort, the 45 and Up Study, recruited between 2005 and 2009, researchers investigated the association between alcohol consumption, and other potential risk factors and kidney cancer incidence. The median follow-up was 5.4 years.

Of the 267,357 participants aged  $\leq 45$  years living in New South Wales, 497 were diagnosed with kidney cancer. There was a significant inverse association between alcohol consumption and risk of kidney cancer and a significant inverse dose-response relationship. There was a significant interaction between alcohol consumption and

socioeconomic status; participants residing in higher socioeconomic areas (the two most advantaged quintiles) who consumed 8-10 drinks or greater than 10 drinks per week, respectively, had a lower risk of kidney cancer compared to the group who consumed 1-4 drinks per week (hazard ratio (HR) 0.34, 95% confidence interval (CI) 0.15-0.76, HR 0.51, 95% CI 0.31-0.83) with a dose-response trend of HR 0.62 (95% CI 0.42-0.93) per 7 drink increase in weekly alcohol consumption.

The conclusion is that there could be an inverse association between alcohol consumption and risk in those residents in higher socioeconomic areas.

Source: Kim LH, Bang A, Sarich P, Nair-Shalliker V, Patel MI, Smith DP. Alcohol consumption and socioeconomic status associated with the risk of kidney cancer in a large Australian cohort study. *Ann Epidemiol.* 2023 May 2;84:16-24. doi.org/10.1016/j.annepidem.2023.04.014.

## The association between population drinking and ischemic heart disease mortality in educational groups

A large number of observational studies have found a J-shaped relationship between alcohol intake and ischemic heart disease (IHD) risk. However, some studies suggest that the alleged cardio-protective effect may be an artifact in the way that the elevated risk for abstainers is due to self-selection on risk factors for IHD.

A paper estimated the association between alcohol and IHD-mortality on the basis of aggregate time-series data, where the problem with selection effects is not present. In addition, the researchers analysed SES-specific mortality to investigate whether there is any socio-economic gradient in the relationship at issue.

SES was measured by educational level. IHD-mortality in three educational groups was used as the outcome. Per capita alcohol consumption was proxied by Systembolaget's alcohol sales (litres of alcohol 100% per capita 15+). Swedish quarterly data on mortality and alcohol consumption

spanned the period 1991Q1-2020Q4. Survey data were used to construct an indicator of heavy SES-specific episodic drinking.

The estimated association between per capita consumption and IHD-mortality was positive and statistically significant in the two groups with primary and secondary education, but not in the group with postsecondary education. The association was significantly stronger the lower the educational group. Although the associations were generally stronger for males than for females, these differences were not statistically significant. The researchers say that their findings suggest that the detrimental impact of per capita consumption on IHD-mortality was stronger the lower the educational group.

Source: Thor Norström, Jonas Landberg, *The association between population drinking and ischemic heart disease mortality in educational groups*, *Alcohol and Alcoholism*, Volume 58, Issue 4, July 2023, Pages 385–392, [doi.org/10.1093/alcalc/agad033](https://doi.org/10.1093/alcalc/agad033)

## Dose-dependent association of alcohol consumption with obesity and type 2 Diabetes

Effects of modest alcohol consumption remain controversial. Mendelian randomization (MR) can help to mitigate biases due to confounding and reverse causation in observational studies, and evaluate the potential causal role of alcohol consumption.

A study evaluated dose-dependent effect of alcohol consumption on obesity and type 2 diabetes. Assessing 408,540 participants of European ancestry in the UK Biobank, the association between self-reported alcohol intake frequency and 10 anthropometric measurements, obesity, and type 2 diabetes were tested. MR analyses were then conducted both in the overall population and in subpopulations stratified by alcohol intake frequency.

Among individuals having more than 14 drinks per week, a 1-drink-per-week increase in genetically predicted alcohol intake frequency was associated with a 0.36-kg increase in fat mass (SD = 0.03 kg), a 1.08-fold increased odds of obesity (95% CI,

1.06-1.10), and a 1.10-fold increased odds of type 2 diabetes (95% CI, 1.06-1.13). These associations were stronger in women than in men. Furthermore, no evidence was found supporting the association between genetically increased alcohol intake frequency and improved health outcomes among individuals having 7 or fewer drinks per week.

The researchers conclude that, in contrast to observational associations, MR results suggest there may not be protective effects of modest alcohol consumption on obesity traits and type 2 diabetes. Heavy alcohol consumption could lead to increased measures of obesity as well as increased risk of type 2 diabetes.

Source: Lu T, Nakanishi T, Yoshiji S, Butler-Laporte G, Greenwood CMT, Richards JB. *Dose-dependent Association of Alcohol Consumption With Obesity and Type 2 Diabetes: Mendelian Randomization Analyses*. *J Clin Endocrinol Metab*. 2023 Jun 27:dgad324. [doi.org/10.1210/clinem/dgad324](https://doi.org/10.1210/clinem/dgad324)

## Alcohol consumption, genetic risk, and intraocular pressure and glaucoma

A study examined the association of alcohol consumption with intraocular pressure (IOP) and glaucoma and assessed whether any associations are modified by a glaucoma polygenic risk score (PRS).

Cross-sectional analysis of data from the Canadian Longitudinal Study on Aging Comprehensive Cohort, consisting of 30,097 adults ages 45 to 85 years, was performed. Data were collected from 2012 to 2015. Alcohol consumption frequency (never, occasional, weekly, and daily) and type (red wine, white wine, beer, liquor, and other) were measured by an interviewer-administered questionnaire. Total alcohol intake (grams/week) was estimated. IOP was measured in mm Hg using the Reichert Ocular Response Analyzer. Participants reported a diagnosis of glaucoma from a doctor.

Daily drinkers had higher IOP compared to those who never drank. An increase in total weekly

alcohol intake (per 5 drinks) was also associated with higher IOP. The association between total alcohol intake and IOP was stronger in those with a higher genetic risk of glaucoma. 1,525 participants reported being diagnosed with glaucoma. Alcohol consumption frequency and total alcohol intake were not associated with glaucoma.

Alcohol frequency and total alcohol intake were associated with elevated IOP but not with glaucoma, the research found. The polygenic risk score modified the association between total alcohol intake and IOP. Findings should be confirmed in longitudinal analyses, the study authors comment.

Source: Alyssa Grant, Marie-Hélène Roy-Gagnon, Joseph Bastasic, Akshay Talekar, Mahsa Jessri, Gisele Li, Ralf Buhrmann, Ellen E. Freeman; Alcohol Consumption, Genetic Risk, and Intraocular Pressure and Glaucoma: The Canadian Longitudinal Study on Aging. *Invest. Ophthalmol. Vis. Sci.* 2023;64(10):3. doi.org/10.1167/iov.64.10.3.

## Alcohol consumption, smoking, and risk of dementia in community-dwelling Japanese people aged 40-74 years

Alcohol drinking and tobacco smoking have impacts on lifestyle-related diseases, but their association with dementia remains a debated topic. A study aimed to examine longitudinal associations between alcohol consumption, smoking, and dementia risk in middle-aged and older Japanese people.

A cohort design was employed, with an 8-year follow-up. Participants were 13,802 community-dwelling Japanese people aged 40-74 years. The baseline survey, including a self-administered questionnaire, was conducted in 2011-2013. Predictors were alcohol consumption and tobacco smoking. The outcome was incident dementia obtained from a long-term care insurance database. Covariates were demographics, lifestyle factors, body mass index, general health status, and history of stroke, diabetes, and depression.

Participants had a mean age of 59 years. The 1-149, 150-299, and 300-449 g ethanol/week groups had significantly lower adjusted hazard ratios (HRs) (0.62, 0.59, and 0.47, respectively) compared

with the reference group, with no significant linear association. HRs increased toward 1 when past-drinkers and those with poor health status and a disease history were excluded (0.80, 0.66, and 0.82, respectively). Higher smoking levels were dose-dependently associated with a higher HR, with the  $\geq 20$  cigarettes/day group having a significantly higher adjusted HR (1.80). Heavy drinkers ( $\geq 449$  g ethanol/week) with smoking habits, but not those without smoking habits, had higher dementia risk.

Light-to-moderate alcohol consumption was associated with decreased dementia risk, and smoking was dose-dependently associated with increased dementia risk, with an interaction between high alcohol consumption and smoking on dementia risk.

Source: Kawakami S, Yamato R, Kitamura K, Watanabe Y, Kabasawa K, Takahashi A, Saito T, Kobayashi R, Oshiki R, Takachi R, Tsugane S, Yamazaki O, Watanabe K, Nakamura K. Alcohol consumption, smoking, and risk of dementia in community-dwelling Japanese people aged 40-74 years: The Murakami cohort study. *Maturitas.* 2023 Jun 14;176:107788. doi.org/10.1016/j.maturitas.2023.107788

## Nonalcoholic fatty liver disease gets a new name, diagnostic criteria

Nonalcoholic fatty liver disease will now be called metabolic dysfunction–associated steatotic liver disease, or MASLD, according to new nomenclature adopted by a global consensus panel composed mostly of hepatology researchers and clinicians.

The new nomenclature, published in the journal *Hepatology*, includes the umbrella term steatotic liver disease, or SLD, which will cover MASLD and MetALD, a term describing people with MASLD who consume more than 140 grams of alcohol per week for women and 210 grams per week for men.

Metabolic dysfunction–associated steatohepatitis, or MASH, will replace the term nonalcoholic steatohepatitis, or NASH.

Mary E. Rinella, MD, of University of Chicago Medicine led the consensus group. The changes were needed, Dr. Rinella and her colleagues argued, because the terms “fatty liver disease” “and nonalcoholic” could be considered to confer stigma, and to better reflect the metabolic dysfunction occurring in the disease. Under the new nomenclature, people with MASLD must have a cardiometabolic risk factor, such as type 2 diabetes. People without metabolic parameters and no known cause will be classed as having cryptogenic SLD.

While the new nomenclature largely conserves existing disease definitions, it allows for alcohol

consumption beyond current parameters for nonalcoholic forms of the disease. “There are individuals with risk factors for NAFLD, such as type 2 diabetes, who consume more alcohol than the relatively strict thresholds used to define the nonalcoholic nature of the disease [and] are excluded from trials and consideration for treatments,” the authors wrote.

Respondents overwhelmingly agreed, however, that even moderate alcohol use alters the natural history of the disease and that patients with more than minimal alcohol consumption should be analysed separately in clinical trials.

The new nomenclature reflects a 3-year effort involving some 236 panelists from 56 countries who participated in several rounds of online surveys using a Delphi process.

The effort was spearheaded by three international liver societies: La Asociación Latinoamericana para el Estudio del Hígado, the American Association for the Study of Liver Diseases, and the European Association for the Study of the Liver, as well as the cochairs of the NAFLD Nomenclature Initiative.

Source: Rinella, Mary E. et al.; on behalf of the NAFLD Nomenclature consensus group. A multi-society Delphi consensus statement on new fatty liver disease nomenclature. *Hepatology* ( ):10.1097/HEP.0000000000000520, June 24, 2023. doi.org/10.1097/HEP.0000000000000520

## Association between wine consumption with cardiovascular disease and cardiovascular mortality

A systematic review and meta-analysis sought to examine the association between wine consumption and cardiovascular mortality, cardiovascular disease (CVD), and coronary heart disease (CHD) and secondly, to analyse whether this association could be influenced by personal and study factors, including the participants’ mean age, the percentage of female subjects, follow-up time and percentage of current smokers.

In order to conduct this systematic review and meta-analysis, several databases were searched for longitudinal studies from their inception to March 2023.

This systematic review included 25 studies and 22 studies were included in the meta-analysis. The pooled RR for the association of wine consumption and the risk of CHD was 0.76 (95% CIs: 0.69, 0.84), for the risk of CVD was 0.83 (95%

CI: 0.70, 0.98), and for the risk of cardiovascular mortality was 0.73 (95% CIs: 0.59, 0.90).

This research revealed that wine consumption has an inverse relationship to cardiovascular mortality, CVD, and CHD. Age, the proportion of women in the samples, and follow-up time did not influence this association. Interpreting these findings with prudence was necessary because increasing wine intake might be harmful to individuals who are vulnerable to alcohol because of age, medication, or their pathologies, the authors say.

Source: Lucerón-Lucas-Torres M, Saz-Lara A, Díez-Fernández A, Martínez-García I, Martínez-Vizcaíno V, Cervero-Redondo I, Álvarez-Bueno C. Association between Wine Consumption with Cardiovascular Disease and Cardiovascular Mortality: A Systematic Review and Meta-Analysis. *Nutrients*. 2023; 15(12):2785. doi.org/10.3390/nu15122785

## Healthy lifestyle index and risk of cardiovascular disease among postmenopausal women with normal body mass index

A lifestyle comprising a healthy diet, light alcohol consumption, no smoking, and moderate or intense physical activity has been associated with reduced risk of cardiovascular disease (CVD). Researchers examined the association of a healthy lifestyle index, derived from scores for each of these components plus waist circumference, with the risk of incident CVD and CVD subtypes in postmenopausal women with normal body mass index (18.5–<25.0 kg/m<sup>2</sup>).

The study was based on 40,118 participants in the Women's Health Initiative, aged 50 to 79 years at enrolment, with a normal body mass index and no history of CVD. The healthy lifestyle index score was categorized into quintiles. Multivariable adjusted hazard ratios (HR) and 95% CIs for the association of healthy lifestyle index with risk of CVD and CVD subtypes were estimated. A total of 3,821 cases of incident CVD were ascertained during a median follow-up of 20.1 years.

Compared with the lowest quintile (unhealthiest lifestyle), higher healthy lifestyle index quintiles showed inverse associations with the risk of CVD (HR<sub>quintile-2</sub>=0.74 [95% CI, 0.67–0.81]; HR<sub>quintile-3</sub>=0.66 [95% CI, 0.60–0.72];

HR<sub>quintile-4</sub>=0.57 [95% CI, 0.51–0.63]; and HR<sub>quintile-5</sub>=0.48 [95% CI, 0.43–0.54]). Healthy lifestyle index was also inversely associated with risks of stroke, coronary heart disease, myocardial infarction, angina, and coronary revascularization. Subgroup analyses, stratified by age (≤63 years vs >63 years), body mass index (</≥ 22.0 kg/m<sup>2</sup>), and general health status (absence/presence of hypertension, diabetes, or lipid-lowering drug use) also showed inverse associations between healthy lifestyle index and risk of CVD.

Among postmenopausal women with a normal body mass index, adherence to a healthy lifestyle, which included light alcohol consumption, was associated with a reduced risk of clinical CVD and CVD subtypes, underscoring the cardiovascular benefits of maintaining a healthy lifestyle, even for women with a healthy weight.

Source: Peila R, Xue X, Qi Q, Dannenberg AJ, Allison MA, Johnson KC, LaMonte MJ, Wild RA, Haring B, Pan K, Tindle HA, Foraker R, Saquib N, Barac A, Rohan TE. Healthy Lifestyle Index and Risk of Cardiovascular Disease Among Postmenopausal Women With Normal Body Mass Index. *J Am Heart Assoc.* 2023 Jun 20;12(12):e029111. doi.org/10.1161/JAHA.122.029111.

## Effect of moderate beer consumption (with and without ethanol) on cardiovascular health in postmenopausal women

A two-year non-randomized parallel controlled clinical pilot trial evaluated the long-term effect of a moderate daily intake of beer (with and without alcohol) on cardiovascular health in postmenopausal women.

A total of 34 participants were grouped in three study arms: 16 were administered alcoholic beer, 6 consumed non-alcoholic beer, and 12 were in the control group. Changes in glucose metabolism, lipid profile, liver enzymes, anthropometric measurements, body composition and blood pressure variables were monitored. Data on medical history, diet, and exercise were collected, and gustatory capacities determined.

Moderate consumption of beer, both alcoholic and non-alcoholic, seemed to have positive effects on biochemical indicators of cardiovascular health in postmenopausal women. 660 mL/day of non-alcoholic beer reduced low-density lipoprotein cholesterol blood levels, and 330 mL/day of alcoholic beer increased high-density

lipoprotein cholesterol. The evolution of changes in android and gynoid fat percentage and their ratio differed significantly between study groups, which was attributable to either the interventions or the disparity between groups regarding the time elapsed since menopause onset. Iso-α-acids recognition threshold could be involved in intervention group election whereas sensory phenotypes studied were not associated with alcohol drinking frequency.

Moderate beer consumption was found to improve the lipid profile of postmenopausal women, although their effects in preventing cardiometabolic alterations deserve further research, the researchers comment.

Source: Trius-Soler, M., Martínez-Carrasco, P., Tresserra-Rimbau, A., Moreno, J.J., Estruch, R. and Lamuela-Raventós, R.M. (2023), Effect of moderate beer consumption (with and without ethanol) on cardiovascular health in postmenopausal women. *J Sci Food Agric.* doi.org/10.1002/jsfa.12826

## Association between alcohol consumption and cardiovascular risk in Hungary

Alcohol consumption has a significant effect on cardiovascular health. Although alcohol consumption has decreased over the last decade in Hungary, it is still significantly higher than the average across the European Union. Researchers at the Gottensburg National Cardiovascular Center in Budapest, Hungary, described patterns of alcohol use based on the Alcohol Use Disorders Identification Test (AUDIT), with a special focus on cardiovascular risk status (low, moderate, high, or very high).

The Three Generations for Health program focuses on the development of primary health care in Hungary. One of the key elements of the program is the identification of risk factors of cardiovascular diseases. An ordinal multiple logistic regression analysis was performed with 10 categorical explanatory variables and the outcome was the categorical cardiovascular risk. The study data included 11,348 patients aged 40–65 years.

A significant relationship was found between alcohol consumption and cardiovascular risk status; people with high-risk drinking patterns had higher risk for having a more serious cardiovascular status (OR=1.306 [1.003–1.701]). According to multiple regression analysis, alcohol dependence was associated with cardiovascular risk.

From a public health perspective, the results highlight the importance of reducing alcohol consumption with the help of primary care and preventive services in countries with a high cardiovascular risk profile to reduce the cardiovascular disease-related burden.

Source: Szöllősi GJ, Ccenteri O, Jancsó Z, Vajer P, Kardos L, Andréka P. Association Between Alcohol Consumption and Cardiovascular Risk Based on Data from the Three Generations for Health Program in Hungary. *Med Sci Monit.* 2023 Jun 26;29:e940327. doi.org/10.12659/MSM.940327

## Alcohol consumption, multiple Lugol-voiding lesions, and field cancerization

The development of multiple squamous cell carcinomas (SCC) in the upper aerodigestive tract, which includes the oral cavity, pharynx, larynx, and esophagus, is explained by field cancerization, and is associated with alcohol consumption and cigarette smoking.

Researchers reviewed the association between alcohol consumption, multiple Lugol-voiding lesions, and field cancerization, mainly based on the Japan Esophageal Cohort study. The Japan Esophageal Cohort study is a prospective cohort study that enrolled patients with esophageal SCC after endoscopic resection. Enrolled patients received surveillance by gastrointestinal endoscopy every 6 months and surveillance by an otolaryngologist every 12 months.

The Japan Esophageal Cohort study showed that esophageal SCC and head and neck SCC that developed after endoscopic resection for esophageal SCC were associated with genetic polymorphisms related to alcohol metabolism. They were also associated with Lugol-voiding lesions grade in the background esophageal mucosa, the score of the health risk appraisal

model for predicting the risk of esophageal SCC, macrocytosis, and score on alcohol use disorders identification test. The standardized incidence ratio of head and neck SCC in patients with esophageal SCC after endoscopic resection was extremely high compared to the general population.

Drinking and smoking cessation is strongly recommended to reduce the risk of metachronous esophageal SCC after treatment of esophageal SCC. Risk factors for field cancerization provide opportunities for early diagnosis and minimally invasive treatment. Lifestyle guidance of alcohol consumption and cigarette smoking for esophageal precancerous conditions, which are endoscopically visualized as multiple Lugol-voiding lesions, may play a pivotal role in decreasing the incidence and mortality of esophageal SCC, the study authors conclude.

Source: Katada C, Yokoyama T, Yano T, Suzuki H, et al. Alcohol consumption, multiple Lugol-voiding lesions, and field cancerization. *DEN Open.* 2023 Jul 3;4(1):e261. doi.org/10.1002/deo2.261

## A systematic review of relative risks for the relationship between chronic alcohol use and the occurrence of disease

Alcohol use is causally linked to the development of and mortality from numerous diseases. A study published in *Alcohol: Clinical and Experimental Research* provides an update to a previous systematic review of meta-analyses that quantify the sex-specific dose–response risk relationships between chronic alcohol use and disease occurrence and/or mortality.

An updated systematic search of multiple databases was performed to identify meta-analyses published from January 1, 2017, to March 8, 2021, which quantified the risk relationships between chronic alcohol use and the risk of disease occurrence and/or mortality. The comparator was people who have never consumed at least one standard drink of alcohol. Measurements included relative risks, odds ratios, and hazard ratios of disease occurrence and/or mortality based on long-term alcohol intake measured in grams per day. The systematic search yielded 5953 articles, of which 14 were included in the narrative review.

All diseases showed an increased risk of occurrence as alcohol use increased. At all doses examined, alcohol had a significant detrimental effect on

tuberculosis, lower respiratory infections, oral cavity and pharyngeal cancers, oesophageal cancer, colorectal cancer, liver cancer, laryngeal cancer, epilepsy, hypertension, liver cirrhosis, and pancreatitis (among men). For ischemic heart disease, ischemic stroke, and intracerebral haemorrhage, protective effects from low-dose chronic alcohol use among both men and women were observed. Low-dose alcohol consumption also had a protective effect for diabetes mellitus and pancreatitis among women (approximately to 50 g/day and 30 g/day, respectively).

Alcohol use increases the risk of numerous infectious and noncommunicable diseases in a dose–response manner. Higher levels of alcohol use have a clear detrimental impact on health; however, at lower levels of use, alcohol can have both disease-specific protective and detrimental effects, the researchers conclude.

Source: Levesque, C., Sanger, N., Edalati, H., Sohi, I., Shield, K.D., Sher, A. et al. (2023) A systematic review of relative risks for the relationship between chronic alcohol use and the occurrence of disease. *Alcohol: Clinical and Experimental Research*, 47, 1238– 1255. doi.org/10.1111/acer.15121

## The association of allostasis with alcohol use

Allostatic load (AL) is associated with a heightened predisposition to disease due to prolonged activation of biological stress-response systems. Alcohol use disorder (AUD) is known to activate these systems. The primary aim of a study published in the journal, *Alcohol*, was to examine the relationship between AL and AUD.

Participants were males (100%) with DSM-IV Alcohol Dependence (n = 48) and healthy participants with no history of substance use disorder (n = 17). Participants with AUD were 4-6 weeks abstinent. The AL index used cortisol, interleukin-6 (IL-6), fibrinogen, tumour necrosis factor-alpha (TNF $\alpha$ ), C-reactive protein (CRP), glucose, insulin, leptin, pulse, systolic blood pressure readings, diastolic blood pressure readings, and body mass index (BMI). Physiological dysregulation for each biological measure was determined based on values within the 25th or 75th percentiles; allostatic load was calculated as the total number of physiologically dysregulated biological measures.

No differences in mean allostatic load scores between the cases and controls were observed. Among cases, AL was not associated with lifetime drinks per drinking day, lifetime total drinks, total drinks 6-months prior to participating in the study, or drinks per drinking day at 3-month follow-up. allostatic load was negatively associated with drinks per drinking day 6-months prior to study participation.

The hypotheses were not supported. Given that alcohol is likely to lead to physiological dysregulation, the apparent absence of a relationship between biomarkers of cumulative stress as indicated by allostatic load and drinking status was both unanticipated and remarkable. Based on the results, allostatic load in the context of drinking status or drinking among males with AUD may not be applicable.

Source: Carlos Portillo, Bryon Adinoff, Charles T. Spencer, Craig A. Field, The association of allostasis with alcohol use: a case-control study in males with and without alcohol use disorder, *Alcohol*, 2023, doi.org/10.1016/j.alcohol.2023.07.001

## Fat-free mass accounts for most of the variance in alcohol elimination rate in women

The rate at which women eliminate alcohol from their bloodstream is largely predicted by their lean body mass, although age plays a role, too, scientists have found. Lean body mass is defined as one's total body weight minus fat. Women with obesity – and those who are older – clear alcohol from their systems 52% faster than women of healthy weights and those who are younger. The study is published in the journal *Alcohol Clinical and Experimental Research*.

Understanding how blood alcohol concentrations (BAC) achieved after drinking are determined is critical to predicting alcohol exposure to the brain and other organs and alcohol's effects. However, predicting end-organ exposures is challenging, as there is wide variation in BAC achieved after drinking a specified volume of alcohol. Researchers assessed associations between obesity, fat-free mass (FFM), and alcohol elimination rates (AER) in women and examine whether bariatric surgeries, which are linked to an increased risk of alcohol misuse, affect these associations.

Data was analysed from three studies that used similar intravenous alcohol clamping procedures to estimate AER in 143 women (21 to 64 years old)

with a wide range of body mass index (BMI; 18.5 to 48.4 kg/m<sup>2</sup>) and 19 of the women underwent bariatric surgery about 2 years before participation. Obesity and older age were associated with a faster AER. Compared to women with normal weight, AER was 52% faster (95% Confidence Interval: 42% to 61%) in women with obesity. However, BMI lost predictive value when adding fat-free mass (FFM) to the regression model. Age, FFM, and its interaction explained 72% of individual variance in AER. AER was faster in women with higher FFM, particularly women in the top tertile of age. After controlling for FFM and age, bariatric surgery was not associated with differences in AER.

Obesity is associated with a faster AER, but this association is mediated by an obesity-related increase in FFM, particularly in older women. Previous findings of a reduced alcohol clearance following bariatric surgery compared with prior to surgery are likely explained by a reduction in FFM post-surgery.

Source: Seyedsadjadi, N., Ramchandani, V.A., Plawecki, M.H., Kosobud, A.E.K., O'Connor, S., Rowitz, B. et al. (2023) Fat-free mass accounts for most of the variance in alcohol elimination rate in women. *Alcohol: Clinical and Experimental Research*, 47, 848– 855. doi.org/10.1111/acer.15047

## The relationship between alcohol consumption and health: J-shaped or less is more?

In the July issue of the *BMC Medicine*, Tian and colleagues confirmed the J-shaped relationship between alcohol consumption and health based on analyzing 918,529 adults from the repeated National Health Interview Survey (NHIS) from 1997 to 2014. In addition to several cause-specific mortality, the researchers findings are largely confirmatory to previous studies using NHIS and several large systematic review and meta-analysis on this issue.

The "J-shaped" relationship refers to a protective health effect at a lower level of consumption; while above a certain threshold, it greatly increases health risks. This study found that compared with lifetime abstainers, current infrequent, light, and moderate drinkers had a lower risk of all-cause mortality (current infrequent: – 13%; light: – 23%; moderate: – 18%) and cardiovascular disease mortality (infrequent: – 14%; light: –

24%; moderate: – 22%), respectively. However, it is important to address several methodological issues when interpreting the J-shaped association which the authors explore.

In conclusion, while some studies have suggested a J-shaped relationship, there are limitations in the study design, confounding factors, and individual variability that challenge the generalizability and interpretation of these findings. More recent studies with advanced methodological designs have challenged the J-shape association. It is also important to consider societal/population-level harmful effects of alcohol use and alternative health-promoting strategies when evaluating the implications of the J-shaped relationship.

Source: Tsai, MK., Gao, W. & Wen, CP. The relationship between alcohol consumption and health: J-shaped or less is more?. *BMC Med* 21, 228 (2023). doi.org/10.1186/s12916-023-02911-w

## Plasma lipids, alcohol intake frequency and risk of Osteoarthritis

Plasma lipids and alcohol intake frequency have been reported to be associated with the risk of osteoarthritis (OA). However, it remains inconclusive whether plasma lipids and alcohol intake frequency play a role in the development of OA.

A study employed a comprehensive genome-wide association database to identify independent genetic loci strongly linked to plasma lipids and alcohol intake frequency, which were used as instrumental variables. The causal association between plasma lipids, alcohol intake frequency, and the risk of OA was then analysed using two-sample Mendelian randomization methods with odds ratios (ORs) as the evaluation criteria.

A total of 392 SNPs were included as instrumental variables in this study, including 32 for total cholesterol (TC), 39 for triglycerides (TG), 170 for high-density lipoproteins (HDL), 60 for low-density lipoproteins (LDL), and 91 for alcohol intake frequency.

The results of two-sample Mendelian randomization analysis showed that total cholesterol, triglycerides, low-density lipoproteins, and alcohol intake frequency were all considered risk factors for osteoarthritis, and the risk of osteoarthritis increased with their rise.

Source: Wen, MT., Liang, XZ., Luo, D. et al. Plasma lipids, alcohol intake frequency and risk of Osteoarthritis: a Mendelian randomization study. *BMC Public Health* 23, 1327 (2023). [doi.org/10.1186/s12889-023-16250-1](https://doi.org/10.1186/s12889-023-16250-1)

## Medical research listed by publication date

- Fat-free mass accounts for most of the variance in alcohol elimination rate in women. 03/05/2023
- Alcohol consumption and socioeconomic status associated with the risk of kidney cancer in a large Australian cohort study. Available online 2/05/2023, Version of Record 07/06/23
- Alcohol consumption and risks of more than 200 diseases in Chinese men. 08/06/23
- Alcohol consumption, smoking, and risk of dementia in community-dwelling Japanese people aged 40-74 years: The Murakami cohort study. 14/06/23
- Association between Wine Consumption with Cardiovascular Disease and Cardiovascular Mortality: A Systematic Review and Meta-Analysis. 17/06/23
- Reduced stress-related neural network activity mediates the effect of alcohol on cardiovascular risk. 20/06/23
- Healthy Lifestyle Index and Risk of Cardiovascular Disease Among Postmenopausal Women With Normal Body Mass Index. 20/06/23
- Association Between Alcohol Consumption and Cardiovascular Risk Based on Data from the Three Generations for Health Program in Hungary. 23/06/23
- A multi-society Delphi consensus statement on new fatty liver disease nomenclature. 24/06/23
- Alcohol and vascular endothelial function: Biphasic effect highlights the importance of dose. 27/06/23
- Dose-dependent Association of Alcohol Consumption With Obesity and Type 2 Diabetes: Mendelian Randomization Analyses. 27/06/23
- Drinking alcohol in moderation is associated with lower rate of all-cause mortality in individuals with higher rather than lower educational level: findings from the MORGAM project. 30/06/23
- Alcohol consumption, multiple Lugol-voiding lesions, and field cancerization. 03/07/23
- Alcohol Consumption, Genetic Risk, and Intraocular Pressure and Glaucoma: The Canadian Longitudinal Study on Aging. 03/07/23
- The relationship between alcohol consumption and health: J-shaped or less is more? 03/07/23
- Effect of moderate beer consumption (with and without ethanol) on cardiovascular health in postmenopausal women. 04/07/23
- A systematic review of relative risks for the relationship between chronic alcohol use and the occurrence of disease. 09/07/23
- The association between population drinking and ischemic heart disease mortality in educational groups. 10/07/23
- Plasma lipids, alcohol intake frequency and risk of Osteoarthritis: a Mendelian randomization study. 11/07/23
- The association of allostasis with alcohol use: a case-control study in males with and without alcohol use disorder. 14/07/23

## The socioeconomic profile of alcohol use in Europe

Alcohol's detrimental health effects do not affect everyone equally but accumulate in people with low socioeconomic status (SES). Using data from the 2021 Standard European Alcohol Survey, a team of researchers explored gender- and SES-specific consumption patterns, and COVID-19 related changes in consumption across Europe.

Cross-sectional population-based survey data from 54,354 adults from 33 European countries plus Spain-Catalonia were analysed. Five alcohol indicators were of interest: prevalence of past-year alcohol use; and, among past-year alcohol users, prevalence of monthly/more frequent risky-single-occasion-drinking (monthly+ RSOD); prevalence of high-risk alcohol use (40+/60+ grams pure alcohol daily for women/men); mean daily grams of pure alcohol consumed; and self-reported consumption changes during COVID-19. Alcohol indicators were age-standardised and decomposed by gender and SES (education attainment).

Across jurisdictions, past-year alcohol use, monthly+ RSOD, and high-risk drinking were all commonly reported, with distinct gender-specific

socioeconomic profiles. While high-SES men and women were generally more likely to report past-year alcohol use, monthly+ RSOD and high-risk drinking were more prevalent among currently drinking low/mid-SES compared to high-SES men. No such SES differences in risky drinking were observed among women, however, female alcohol users with high SES reported higher mean daily drinking levels. High-SES women but not men were more likely to both increase and decrease their drinking during COVID-19 compared to their low/mid-SES counterparts.

The researchers conclude that high consumption levels and distinct socioeconomic profiles among men and women highlight the need for effective alcohol policies to reduce health inequalities in Europe.

Source: Kilian, C., Manthey, J., Moskalewicz, J., Braddick, F., Matrai, S., López-Pelayo, H., & Rehm, J. (2023). The socioeconomic profile of alcohol use in Europe: findings from 33 European countries. *International Journal of Alcohol and Drug Research*, 11(1), 13-23. doi.org/10.7895/ijadr.407

## Drinking in the home: What does it entail for younger and older Finns?

Studies about drinking in homes are scarce despite the growing importance of the phenomenon. Researchers examined how often different age groups in Finland drink—overall or to intoxication—in their own homes without company beyond the family and in their own or other people's homes with other company, compared to other settings, and on what days and hours of the week this occurs. Data for the study was from a general population survey carried out in 2016 with event-level data (n = 7124 occasions by 1,955 respondents). Key measurements included location, drinking company, amount of alcohol drunk and time of the week.

The picture of home drinking looks very different for different age groups and for the risks of different types of harm. Occasions in which alcohol was consumed at home without visitors accounted for the majority of all drinking occasions and intoxication occasions among middle-aged and older people. Among people aged 60–79 years 74% of all occasions and 73% of all intoxication occasions occurred at home without visitors. This compares with only 25% and 5% of 15- to 29-year-olds, respectively. The share of 'with company' occasions in somebody's home varied less by age.

Occasions with pre/post drinking in homes and drinking occasions lasting until late at night were seen most often among 15- to 29-year-olds. Among the young, home drinking occasions were more often social occasions and were often combined with going to licensed premises, especially for intoxication occasions.

The researchers conclude that important aspects of home drinking vary greatly by age group and depending on what risk or type of consequence is considered. For older people and for chronic harm, the key aspect is drinking at home without company beyond the family. The more important aspect for younger people and acute harm is pre- and post-drinking in homes before or after going to bars or nightclubs, which results in long evenings with large amounts of alcohol consumed.

The authors comment that home drinking should be an important concern for policy in order to reduce chronic harm among middle-aged and older people and acute harm among younger people.

Source: Mäkelä, P, Härkönen, J, Lintonen, T. Drinking in the home: What does it entail for younger and older Finns? *Drug Alcohol Rev.* 2023; 42( 5): 1004– 1012. doi.org/10.1111/dar.13612

## Impact on sales of adding a smaller serving size of beer and cider in licensed premises

Smaller serving sizes of alcoholic drinks could reduce alcohol consumption across populations thereby lowering the risk of many diseases. The effect of modifying the available range of serving sizes of beer and cider in a real-world setting has yet to be studied. A study assessed the impact on beer and cider sales of adding a serving size of draught beer and cider (2/3 pint) that was between the current smallest (1/2 pint) and largest (1 pint) standard serving sizes.

Twenty-two licensed premises in England consented to taking part in the study. The study used an ABA reversal design, set over three 4-weekly periods, with A representing the non-intervention periods, during which standard serving sizes were served and B the intervention period when a 2/3 pint serving size of draught beer and cider was added to the existing range, along with smaller 1/2 pint and larger 1 pint serving

sizes. The primary outcome was the daily volume of beer and cider sold, extracted from sales data.

Fourteen premises started the study and twelve were included in the primary analysis. After adjusting for pre-specified covariates, the intervention did not have a significant effect on the volume of beer and cider sold per day (3.14 ml; 95%CI -2.29 to 8.58).

In licensed premises, there was no evidence that adding a smaller serving size for draught beer and cider (2/3 pint) when the smallest (1/2 pint) and largest (1 pint) sizes were still available, affected the volume of beer and cider sold. Studies are warranted to assess the impact of removing the largest serving size, the researchers suggest.

Source: Mantzari, E., Ventsel, M., Pechey, E. et al. Impact on sales of adding a smaller serving size of beer and cider in licensed premises: an A-B-A reversal design. *BMC Public Health* 23, 1239 (2023). [doi.org/10.1186/s12889-023-16163-z](https://doi.org/10.1186/s12889-023-16163-z)

## Increase in educational inequalities in alcohol-related mortality in Spain during a period of economic growth

According to researchers in Madrid, Spain, alcohol-related mortality risk is almost always greater in lower than higher socio-economic positions (SEPs). There is little information on the evolution of this SEP gradient and its relationship with the economic cycle. Some results suggest that during economic expansions, there is a hypersensitivity of low-SEP people to harmful drinking. The main objective of their research was to measure the evolution of educational inequality in alcohol-related and non-alcohol related mortality by sex and age group in Spain during 2012–19.

This study included all residents in Spain aged 25 years and over from 2012 to 2019. Age-standardized mortality rates (ASMRs) were calculated from strongly/moderately alcohol-related causes (directly alcohol-attributable, unspecified liver cirrhosis, liver and upper aerodigestive tract cancers and moderately alcohol-related), weakly alcohol-related causes and other causes by educational level. Age-adjusted relative index of inequality (RII) and slope index of inequality (SII) were obtained to measure relative and absolute educational inequality in mortality, respectively and age-adjusted annual percentage

change (APC) was also used to measure linear trends in mortality by educational level.

Between 2012–15 and 2016–19, economic growth accelerated, the relative index of inequality (RII) in mortality from strongly/moderately alcohol-related causes increased from 2.0 to 2.2 among men and from 1.1 to 1.3 among women, and the slope index of inequality (SII) in deaths/100000 person-years from 181.4 to 190.9 among men and from 18.9 to 46.5 among women. It also increased relative and absolute inequality in mortality from weakly alcohol-related and other causes of death in both men and women. These increases in inequality were due primarily to a flattening or even reversal of the downward mortality trend among low- and medium-educated people.

During the economic expansion of 2012–19 in Spain, changes in mortality risk from strongly/moderately alcohol-related causes were especially unfavourable among low- and medium-educated people, the researchers say.

Source: Donat, M, Regidor, E, Barrio, G, Ambrosio, E, Sordo, L, Guerras, JM, et al. Increase in educational inequalities in alcohol-related mortality in Spain during a period of economic growth. *Addiction*. 2023. [doi.org/10.1111/add.16264](https://doi.org/10.1111/add.16264)

## New longitudinal study examines how early childhood adversity can increase risk of adolescent substance use

Childhood adversity is strongly associated with adolescent substance use, but few epidemiologic studies have investigated early childhood adversity (ECA) before age 5. A study investigated pathways by which early childhood adversity is associated with adolescent alcohol and cannabis use and high school completion through childhood behavioural and academic mediators and their reciprocal effects.

Researchers used prospective data from the National Longitudinal Survey of Youth 1979-Child/Young Adult Cohort, an intergenerational study of mothers and their children. The analysis focused on children born 1984–1999 and followed through 2016.

The research team analysed early childhood adversity before age 5 using a cumulative score of four indicators — maternal heavy drinking/drug use, low emotional support, low cognitive stimulation, and household poverty.

Early childhood adversity was indirectly associated with adolescent cannabis frequency through mediators of externalizing/internalizing problems,

low academics, and early cannabis onset before age 14. Early childhood adversity was also indirectly associated with alcohol frequency via the same mediators, but not early alcohol onset. Greater behavioural problems elevated substance use risk; whereas, low academics reduced risk. Reciprocal effects were evident between childhood behavioural problems and cannabis frequency to high school completion.

The study authors conclude that adversity from birth to age 4 is associated with childhood behavioural problems and lower academics, which increased adolescent alcohol and cannabis use and lowered high school completion. Early childhood interventions with parents and preschools/day care may reduce early onset and adolescent substance use.

Source: Camillia K. Lui, Jane Witbrodt, Libo Li, Christina C. Tam, Edwina Williams, Zihe Guo, Nina Mulia, Associations between early childhood adversity and behavioral, substance use, and academic outcomes in childhood through adolescence in a U.S. longitudinal cohort, *Drug and Alcohol Dependence*, Volume 244, 2023, 109795, ISSN 0376-8716, doi.org/10.1016/j.drugalcdep.2023.109795

## Estimating the impact of the minimum alcohol price on consumers' alcohol expenditure in the Northern Territory, Australia

From October 2018, the Northern Territory (NT) government introduced a minimum unit price (MUP) for alcohol of \$1.30 per standard drink. A study assessed industry claims that the MUP penalised all drinkers by examining the alcohol expenditure of drinkers not targeted by the policy.

766 participants completed a survey in 2019, post-MUP. They reported their drinking patterns and their preferred liquor brand. Estimated annual alcohol expenditure for each participant was calculated by collating the cheapest advertised price per standard drink of their preferred brand pre-and-post-MUP. Participants were grouped as consuming within the Australian drinking guidelines ("moderate") or over them ("heavy").

Based on post-MUP drinking patterns, moderate consumers had an average annual alcohol

expenditure of AU\$327.66 (CIs=325.61, 329.71) pre-MUP, which increased by AU\$3.07 (0.94%) post-MUP. Heavy consumers had an estimated average annual alcohol expenditure of AU\$2898.82 (CIs=2877.06, 2920.58) pre-MUP, which increased by AU\$37.12 (1.28%).

The MUP policy was associated with a small increase of AU\$3.07 in alcohol annual expenditure for moderate consumers. The authors say that their research provides evidence that counters the alcohol industry's messaging, enabling an evidence-based discussion.

Source: Taylor N, Miller P, Coomber K, Livingston M, Jiang H, Buykx P, Scott D, Baldwin R, Chikritzhs T. Estimating the impact of the minimum alcohol price on consumers' alcohol expenditure in the Northern Territory, Australia. *Aust N Z J Public Health*. 2023 Jun;47(3):100053. doi.org/10.1016/j.anzjph.2023.100053

## Racial and ethnic disparities in monthly trends in alcohol-induced mortality among US adults

In the US, historically, American Indians/Alaska Natives (AIANs), Blacks, and Hispanics have experienced higher alcohol-induced mortality rates. Given a disproportionate surge in unemployment rate and financial strain among racial and ethnic minorities and limited access to alcohol use disorder treatment during the COVID-19 pandemic, it is essential to examine monthly trends in alcohol-induced mortality in the United States during the pandemic.

The authors of a study published in the American Journal of Drug and Alcohol Abuse estimated changes in monthly alcohol-induced mortality among US adults by age, sex, and race/ethnicity. Using monthly deaths from 2018–2021 national mortality files and census-based monthly population estimates, age-specific monthly alcohol-induced death rates were calculated and to derive monthly percent increases in mortality rates were derived.

Alcohol-induced deaths among adults aged  $\geq 25$  years increased by 25.7% between 2019 (38,868 deaths) and 2020 (48,872 deaths). During

2018–2021, the estimated monthly percent change was higher for females (1.1% per month) than males (1.0%), and highest for AIANs (1.4%), followed by Blacks (1.2%), Hispanics (1.0%), non-Hispanic Whites (1.0%), and Asians (0.8%). In particular, between February 2020 and January 2021, alcohol-induced mortality increased by 43% for males, 53% for females, 107% for AIANs, the largest increase, followed by Blacks (58%), Hispanics (56%), Asians (44%), and non-Hispanic Whites (39%).

The study authors conclude that during the peak months of the pandemic, the rising trends in alcohol-induced mortality differed substantially by race and ethnicity. These findings indicate that behavioural and policy interventions and future investigation on underlying mechanisms should be considered to reduce alcohol-induced mortality among Blacks and Alaska Natives.

Source: Hyunjung Lee & Gopal K. Singh (2023) Racial and ethnic disparities in monthly trends in alcohol-induced mortality among US adults from January 2018 through December 2021, *The American Journal of Drug and Alcohol Abuse*, doi.org/10.1080/00952990.2023.2208728

## The involvement of age, gender, and personality variables in alcohol consumption during the start of the COVID-19 pandemic in Romanian university students

An open access paper published in the journal Behavioral Science explored the age, gender, and personality variables involved in alcohol consumption at the start of the COVID-19 pandemic in Romania among 210 bachelor's and master's students aged between 19 and 25 years.

The results of the Freiburg Personality Inventory-Revised and the Alcohol Use Disorders Identification Test were examined. The prevalence of problematic alcohol consumption was relatively low (10.5%). The risk of males being part of the problematic alcohol consumption cluster was 5.223 times higher than that of females. Increasing age was associated with a decrease in the risk of belonging to the problematic cluster by a factor of 0.733. Increasing scores on the Frankness and Somatic Complaints personality scales were associated with a decreased risk of belonging to the problematic cluster of alcohol consumption,

with factors of 0.738 (95% CI, 0.643 to 0.848), and 0.901 (95% CI, 0.813 to 0.999), respectively.

The researchers argue that more action to prevent alcohol consumption is needed in men, especially in those at the beginning of their university studies. It is necessary to intervene to decrease the interest in making a good impression (low scores on the Frankness Scale) so as to increase healthy autonomy using critical thinking and find a balance between the internal and external loci of control. Students from faculties with profiles that deal with health and its promotion are less vulnerable to problematic alcohol consumption, even if they have a withdrawn, pessimistic personality (low scores on Somatic Complaints).

Source: Rada C, Lungu M. The Involvement of Age, Gender, and Personality Variables in Alcohol Consumption during the Start of the COVID-19 Pandemic in Romanian University Students. *Behav Sci (Basel)*. 2023 Jun 20;13(6):519. doi.org/10.3390/bs13060519.

## The effectiveness of workplace interventions for the prevention of alcohol use: A meta-analysis

Previous research has pointed to the potential of workplace interventions addressing alcohol consumption. However, there is still no systematic overview of the effects of these interventions. A research team from the University of Hildesheim, Hildesheim, Germany aimed to quantify the effectiveness of workplace interventions addressing alcohol use by conducting a meta-analysis.

A systematic literature search for randomized controlled trials of workplace alcohol interventions published between 1995 and 2020 was conducted in five databases. Studies were included if they were performed in the workplace and reported universal or selective interventions aiming for alcohol use reduction. Primary outcomes were any measures of alcohol use.

Twenty studies with 4,484 participants were integrated into the meta-analysis. The team found a significant mean effect size of  $d = -0.16$  (95% CI =  $[-0.2715; -0.0511]$ ), indicating a reduction in alcohol use for intervention groups.

The researchers state that alcohol-related prevention programmes conducted in the workplace have a statistically significant and favourable effect on alcohol consumption. Although the overall mean effect is considered to be small, it underlines the effectiveness of workplace interventions targeting a reduction in alcohol use.

Source: Fellbaum, L, Mojzisch, A, Bielefeld, L, Benit, N, Soellner, R. The effectiveness of workplace interventions for the prevention of alcohol use: A meta-analysis. *Addiction*. 2023. doi.org/10.1111/add.16276

## Social disparities in alcohol's harm to others in 32 European countries

Alcohol use can cause harm not only to the person who consumes it but also to others. Prior research has found that these alcohol-attributable harms to others differ across socioeconomic groups, though several findings have been contradictory. Research published in the *International Journal of Drug Policy* examined the role of individual-level and population-level income inequalities in alcohol's harm to others among women and men. Cross-sectional survey data from 2021, covering 39,629 respondents from 32 European countries was analysed. Harms from others' drinking were defined as experiences of physical harm, involvement in a serious argument, or involvement in a traffic accident, due to another person's drinking, within the past year. The association of individual-level income and country-specific income inequality with harms from a known person's or a stranger's drinking, was assessed adjusting for the respondent's age, daily drinking levels, and at least monthly risky single-occasion drinking.

At the individual level, people with lower incomes had 21% to 47% increased odds of reporting harms from a known person's drinking (women and

men) or stranger's drinking (men only) than their same-gender counterparts in the highest income quintile. At the national level, countries with higher income inequality showed increased risks of harms from a known person's drinking among women (OR = 1.09, 95% confidence interval [CI]: 1.05 – 1.14), while among men the risk of harm from strangers' drinking decreased with higher income inequality (OR = 0.86, 95% CI: 0.81 – 0.92). These associations with income inequality were observed among respondents from all but the lowest income groups.

Alcohol can cause harm to others, with women and people with low incomes being disproportionately exposed to these harms, the researchers found. They suggest that alcohol control policies targeting high consumption levels, especially among men, as well as upstream policies to reduce inequalities, are needed to lower the health burden of alcohol beyond those who consume it.

Source: Kilian C, Manthey J, Braddick F, López-Pelayo H, Rehm J. Social disparities in alcohol's harm to others: evidence from 32 European countries. *Int J Drug Policy*. 2023 Jun 2;118:104079. doi.org/10.1016/j.drugpo.2023.104079.

## Adolescent binge drinking in the West of Ireland: associated risk and protective factors

A study examined potential risk and protective factors for binge drinking among 15–16-year-old adolescents in the West of Ireland.

The research was based on a cross-sectional secondary analysis of 4,473 participants from the Planet Youth 2020 Survey. The outcome was ever binge drinking, defined as ever consumption of five or more drinks in a two-hour period or less. Independent variables were selected a priori following review of peer-reviewed literature and were grouped as individual, parents and family, peer group, school, leisure time and local community factors. Multivariable logistic regression was used to examine independent associations between potential risk and protective factors and ever binge drinking.

The prevalence of ever binge drinking was 34.1%. Self-rated 'bad/very bad' mental health (adjusted Odds Ratio (aOR) 1.61, 95% CI 1.26–2.06), current cigarette use (aOR 4.06, 95% CI 3.01–5.47) and current cannabis use (aOR 2.79, 95% CI 1.80–4.31) increased odds of ever binge drinking.

Parental supervision (aOR 0.80, 95% CI 0.73–0.88) and negative parental reaction to adolescent drunkenness (aOR 0.51, 95% CI 0.42–0.61) reduced odds of ever binge drinking. Getting alcohol from parents increased odds of ever binge drinking (aOR 1.79, 95% CI 1.42–2.25).

Adolescents with friends who drink alcohol had almost five times higher odds of ever binge drinking (aOR 4.59, 95% CI 2.65–7.94). Participating in team/club sports also increased odds of ever binge drinking (aOR 1.30, 95% CI 1.07–1.57 for 1–4 times/week, aOR 1.52, 95% CI 1.07–2.16 for  $\geq 5$  times/week).

This study identifies individual and social environment factors associated with adolescent binge drinking in the West of Ireland. This can inform intersectoral action to protect adolescents from alcohol-related harm.

Source: Kelly, C., Major, E., Durcan, M. et al. Adolescent binge drinking in the West of Ireland: associated risk and protective factors. *BMC Public Health* 23, 1064 (2023). [doi.org/10.1186/s12889-023-15577-z](https://doi.org/10.1186/s12889-023-15577-z)

## Social research by publication date

- Drinking in the home: What does it entail for younger and older Finns? 07/02/23
- Associations between early childhood adversity and behavioral, substance use, and academic outcomes in childhood through adolescence in a U.S. longitudinal cohort. 01/03/23
- Estimating the impact of the minimum alcohol price on consumers' alcohol expenditure in the Northern Territory, Australia  
Available online 16/05/2023, Version of Record 13 June 2023.
- Increase in educational inequalities in alcohol-related mortality in Spain during a period of economic growth. 19/05/23
- Social disparities in alcohol's harm to others: evidence from 32 European countries.  
available online 02/06/23
- Racial and ethnic disparities in monthly trends in alcohol-induced mortality among US adults from January 2018 through December 2021  
03/06/23
- Adolescent binge drinking in the West of Ireland: associated risk and protective factors  
05/06/23
- The Involvement of Age, Gender, and Personality Variables in Alcohol Consumption during the Start of the COVID-19 Pandemic in Romanian University Students. 20/06/23
- Impact on sales of adding a smaller serving size of beer and cider in licensed premises: an A-B-A reversal design. 23/06/23
- The socioeconomic profile of alcohol use in Europe: findings from 33 European countries.  
25/06/23
- The effectiveness of workplace interventions for the prevention of alcohol use: A meta-analysis.  
02/07/23
- British Medical Association to campaign for drink-drive limit to be lowered. 05/07/23

## British Medical Association to campaign for drink-drive limit to be lowered

The British Medical Association (BMA) is to campaign to lower the legal blood alcohol limit for drink driving in the UK, members have decided.

At the organisation’s annual representative meeting in Liverpool, a motion was brought by the BMA’s North-West Regional Council with a call to campaign to bring down the limit to the average of European nations. The move was passed by members, attending both in person and remotely. Currently, the legal limit for driving after consuming alcohol in England, Wales and Northern Ireland is

80 milligrams of alcohol per 100 millilitres of blood, or 35 micrograms of alcohol per 100 millilitres of breath. The limit is among the highest in Europe.

As part of the campaign, the BMA will also aim to educate the public on the risks of drug-driving and improve the provision of drug and alcohol services in the community.

Source: Mahase E. Doctors call for drink driving limit to be lowered to match other European countries. *BMJ*. 2023 Jul 5;382:1552. doi.org/10.1136/bmj.p1552.

## UK’s rising liver cancer death rate blamed on alcohol and obesity

The British Liver Trust has called on the UK government to do more to restrict unhealthy lifestyle choices, with the aim of reducing liver cancer deaths. According to the Trust, liver cancer is now the fastest rising cause of cancer death in the UK and liver cancer mortality rates have more than tripled since the 1970s.

The charity is arguing that urgent action is required to reduce the “carcinogenic effects” of cheap alcohol and unhealthy food after a 40% increase in deaths from liver cancer in a decade. “The key drivers for the increase in cases and deaths are alcohol and obesity,” said Pamela Healy, chief executive of the British Liver Trust. “We urgently need government action on both issues. Government interventions can create a healthier environment for everyone.”

The intervention comes after the government delayed the implementation of rules banning supermarket multi-buy deals on foods high in fat, sugar or salt. Ministers have also faced calls from the Association of Directors of Public Health for minimum unit pricing on alcohol.

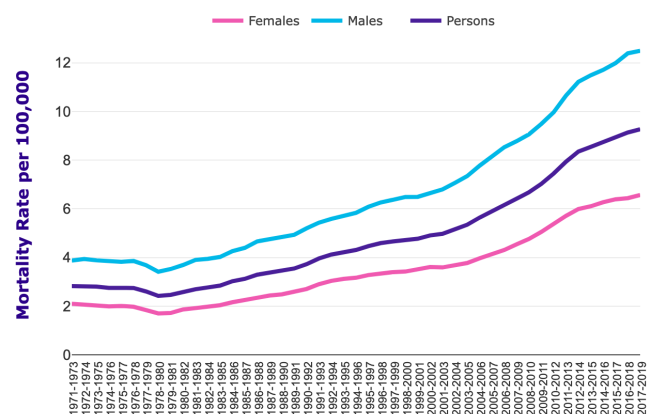
The British Liver Trust has submitted evidence on the rising rates of liver cancer to an inquiry by the parliamentary health and social care committee into future cancer care, which is examining innovations in diagnosis and treatment. The submission states that in addition to the need for earlier diagnosis and access to the most effective treatments, there must be a greater focus on prevention. It says the biggest risk factor for developing liver cancer is liver disease, which can be reversible through lifestyle changes including reduced alcohol consumption and weight loss.

The submission calls for a comprehensive alcohol strategy that addresses the affordability, promotion and availability of alcohol to reduce its harm and tackle health inequalities in the long term and improved regulation of unhealthy food and drinks high in fat, salt and sugar to reduce obesity related

The British Liver Trust says improved surveillance of high risk groups with liver disease is vital to ensure earlier diagnosis and improve survival rates. It also wants to see more investment in research focusing on liver cancer. The Department of Health and Social Care says it is committed to the ambition of diagnosing 75% of cancers at stage 1 and stage 2 by 2028. It says its interventions include community health liver checks for those with a high risk of cirrhosis, with the programme targeting deprived communities.

[committees.parliament.uk/writtenevidence/120716/pdf/](https://committees.parliament.uk/writtenevidence/120716/pdf/)

Liver Cancer (C22), European Age-Standardised Mortality Rates per 100,000 Persons Population, UK, 1971-2019



## Evaluating the impact of minimum unit pricing for alcohol in Scotland

On 27th June, Public Health Scotland (PHS) published the final report on the independent evaluation of the impact of minimum unit pricing (MUP) for alcohol in Scotland.

The report brings together the findings of 40 publications, some commissioned by PHS, some not, examining the impact of MUP.

Evidence shows that MUP has had a positive impact on health outcomes, including addressing alcohol-related health inequalities. It has reduced deaths directly caused by alcohol consumption by an estimated 13.4% and hospital admissions by 4.1%, with the largest reductions seen in men and those living in the 40% most deprived areas.

MUP led to a 3% reduction in alcohol consumption at a population level. The reduction was particularly driven by sales of cider and spirits through the off-trade (supermarkets and shops) products that increased the most in price. The greatest reductions were amongst those households purchasing the most alcohol, with little impact on households purchasing at lower levels.

The report concludes that the evidence supports that MUP has had a positive impact on health outcomes, namely a reduction in alcohol-attributable deaths and hospital admissions, particularly in men and those living in the most deprived areas, and therefore contributes to

addressing alcohol-related health inequalities. There was no clear evidence of substantial negative impacts on the alcoholic drinks industry, or of social harms at the population level.

For those people with alcohol dependence there was limited evidence of any reduction in consumption and there is some evidence of consequences for those with established alcohol dependence on low incomes, that led them to prioritise spending on alcohol over food. At a population level there is no clear evidence of substantial negative impacts on social harms such as alcohol-related crime or illicit drug use.

Dr Nick Phin, Director of Public Health Science, Public Health Scotland said: Public Health Scotland is confident that MUP is an effective mechanism to reduce alcohol-related harm in Scotland and we support the continuation of MUP beyond April 2024.

This report is likely to make a significant contribution to the report which the Government will lay before Parliament by May 2024 when a decision will be made on whether to retain the policy or not.

[publichealthscotland.scot/publications/evaluating-the-impact-of-minimum-unit-pricing-for-alcohol-in-scotland-a-synthesis-of-the-evidence/](https://publichealthscotland.scot/publications/evaluating-the-impact-of-minimum-unit-pricing-for-alcohol-in-scotland-a-synthesis-of-the-evidence/)

## Call for submissions on review of carbohydrate and sugar claims on alcoholic beverages in New Zealand

Food Standards Australia New Zealand (FSANZ) is calling for comment on a proposal to clarify the requirements for making nutrition content claims about carbohydrate and sugar on alcoholic beverages.

Standard 1.2.7 in the Australia New Zealand Food Standards Code (the Code) currently permits voluntary claims about carbohydrate content to be made on alcoholic beverages. Sugar is a component of carbohydrate, however the Code lacks clarity around sugar content claims.

FSANZ is proposing to amend the standard to clarify the permitted extent of carbohydrate and sugar claims on food containing more than 1.15% alcohol by volume. The proposed amendment is

intended to support consumers to make informed choices and provide clarity and certainty for enforcement agencies and industry.

FSANZ's assessment has considered the best available evidence, stakeholder input, relevant Ministerial Policy Guidelines and an analysis of the costs and benefits of the proposed changes.

The call for submissions provides a summary of FSANZ's assessment and includes draft amendments to the Code. Interested parties are invited to comment on the proposed amendments. Submissions close at 6pm (Canberra time) 4 September 2023.

[foodstandards.gov.au/code/proposals/Pages/P1049.aspx](https://foodstandards.gov.au/code/proposals/Pages/P1049.aspx)

## New government in Finland proposes major overhaul of alcohol laws to increase market competition

In Finland, the new coalition government has approved its coalition agreement, which entails significant changes to the country's alcohol laws, aiming to increase competition and liberalize markets. These proposed changes signal a departure from the long-standing tradition of strict alcohol regulation in Finland, indicating a shift towards a less stringent approach. However, the government faces opposition and criticism from health experts and proponents of the current retail monopoly system, who warn that such measures could negatively affect public health.

The new government has outlined a number of objectives for alcohol and substances:

- The maximum alcohol content for beverages sold in grocery stores will rise from 5.5% to 8%. However, this increase will apply solely to drinks produced through fermentation.
- A study will be conducted by the midway review on the possibility of liberalizing the sale of wines with a 15% strength. This suggests a potential opening up of the retail sector for stronger wines, which currently can only be

purchased from Alko, the state-run alcohol retail monopoly.

- Further loosening of restrictions is also proposed for local small-scale and artisanal breweries, distilleries, and vineyards. These establishments will have the opportunity to sell their products directly to consumers from their manufacturing sites, granted they possess a retail sales license.
- In terms of the purchase of alcohol from abroad, the government aims to clear the existing ambiguity around the legality of Finns purchasing alcohol from companies operating in other EU countries through distance selling procedures.

In addition to the proposed alcohol reforms, the new government is set to revise alcohol taxation. It plans to decrease beer taxes, projected to reduce state revenue by 25 million euros. However, it aims to counterbalance this deficit by increasing taxes on spirits and wine, projected to increase state revenue by 40 million euros.

[nordicalcohol.org/post/finnish-government-coalition-negotiations-resistance-to-allowing-wine-sales-in-grocery-stores](https://nordicalcohol.org/post/finnish-government-coalition-negotiations-resistance-to-allowing-wine-sales-in-grocery-stores)

## Alcohol Awareness Week in the UK – Alcohol and Cost

A survey commissioned by Alcohol Change UK, shows the average drinker in the UK spends around £62,899 on alcohol over the course of a lifetime. The survey was carried out to mark the start of Alcohol Awareness Week, led by Alcohol Change UK, which took place from 3-9 July. The theme for 2023 was 'alcohol and cost'. In support of this year's Alcohol Awareness Week, Alcohol Change UK is encouraging people to think about the cost of alcohol in the form of health problems, financial worries, relationship breakdown and family difficulties. And to recognise and talk about the way your own or someone else's drinking might be affecting you and those around you.

The survey found that 19% of drinkers considered alcohol to be an "essential" item in their shopping basket and this rises to 39% of drinkers considered to be at increasing risk of alcohol harm, and 65% of drinkers at high risk.

9% of drinkers had prioritised buying alcohol over essential items (19% for those drinking at

increasing risk, and 25% for those at high risk of alcohol harm). 26% of drinkers said they have deliberately bought less alcohol.

Among those who drink, 15% said that in the last six months they have been worried about how much they are drinking and the same proportion had been worried, in the last six months, about the amount of alcohol someone in their household has been drinking.

Some of the reasons cited for causing some people to drink more than previously in the past six months were: having more opportunities to socialise (32%), work and home pressures (28%), relationship problems (16%), and trying to cope with financial worries (16%).

Those that are now drinking less, in the past six months, said that they did so for physical and mental health reasons (44%), and due to the cost-of-living (34%).

[alcoholchange.org.uk/blog/2023/press-release-the-average-drinker-spends-an-estimated-62-899-on-alcohol-over-the-course-of-a-lifetime](https://alcoholchange.org.uk/blog/2023/press-release-the-average-drinker-spends-an-estimated-62-899-on-alcohol-over-the-course-of-a-lifetime)

## Gen-Z 'mindful drinking' indicates continuation of no and low alcohol rise

According to a recent Euromonitor International analysis, Gen Zers are causing a shake up in the alcoholic and non-alcoholic universes, "ushering in a new era of mindful drinking, sober curiosity and 'dry' venues and events". The latest intel offers some insights into what they are drinking, where and why.

The company's head of alcoholic drinks, Spiros Malandrakis, said that Gen Z – the generation born between the mid-1990s and early 2010s – has displayed a noticeable trend of reduced alcohol consumption compared to previous generations.

"All major non-alcoholic segments were among the top performers in Euromonitor International's latest alcoholic drinks system update," explained Malandrakis. "From non-alcoholic beer, already present and embedded in drinking culture for decades yet still witnessing an enviable 6% total volume growth for 2022, to the emerging non-alcoholic wine segment posting 9% total volume growth and from the double digit momentum of the relative newcomer non-alcoholic ready to drink (RTDs), to non-alcoholic spirits spearheading innovation and a pivot to functionality with a 10% total volume growth, this is all proving to be much more than just a passing fad," he adds.

The report also found that Gen Zers prioritise physical and mental wellbeing, often engaging in regular exercise and prioritising nutritious diets. They place significant value on authenticity and

experiences, are eager to engage in meaningful interactions, explore their passions and make a positive impact on society. Gen Zers often opt for socialising in environments that foster creativity, such as art exhibits, poetry slams or music festivals. The cohort engages in outdoor activities, volunteer work or participates in clubs and organisations that cater to their diverse interests.

Gen Z is also leading the way when it comes to "mindful drinking and sober curiosity, moderation initiatives, dry venues and events, no/lo focused retailers and a cornucopia of launches and innovation that is blurring the definitional lines between the alcoholic and non-alcoholic universes", said Malandrakis. "For younger cohorts who would historically be at the forefront of high energy occasions and high-volume alcohol consumption, the theme of moderation is also a key part of the ubiquitous 'less but better' premium mantra."

He added "New formulations are targeting a plethora of consumption occasions; functionality cues are increasingly replacing simplistic dealcoholising approaches and botanical alchemy and molecular experimentation with new ingredients is making the no/lo landscape one of the most innovative and exciting in the alcohol ecosystem. And it is here to stay."

[euromonitor.com/press/press-releases/july-2023/gen-z-shunning-alcohol-for-dry-parties-as-they-prioritise-exercise-and-wellbeing-euromonitor-international](https://euromonitor.com/press/press-releases/july-2023/gen-z-shunning-alcohol-for-dry-parties-as-they-prioritise-exercise-and-wellbeing-euromonitor-international)

## Alice Springs crime rate hits four-year low as advocates push for alcohol restriction extension

Following the implementation of Alcohol restrictions in the Northern Territory (NT) police say crime in Alice Springs has dropped to its lowest level in four years.

NT police statistics collated by the Central Australian Aboriginal Congress (CAAC) revealed a 37% decrease in domestic violence assaults from January to April. All other assaults dropped 35% while property offences were down 25% over the same time period. The People's Alcohol Action Coalition, a community-based group aimed at raising awareness over alcohol-related harms and headed by the Alice Springs-based People's Alcohol Action Coalition spokesperson John Boffa said the town had seen a drop in assaults and property offences since alcohol restrictions were

introduced, demonstrating that the measures were helping to reduce harm in the community.

Earlier this year, the NT government faced pressure over rising crime and antisocial behaviour in Alice Springs after Intervention-era bans on alcohol in remote Aboriginal communities came to an end, making liquor legal in some communities for the first time in 15 years. Alcohol bans were reintroduced in central Australia in January, with further restrictions imposed in February. Aboriginal people living in remote communities and town camps in the NT are not able to buy takeaway alcohol, although communities will be able to lift the bans if 60% of residents vote in favour of an alcohol management plan.

[abc.net.au/news/2023-06-28/nt-alice-springs-crime-rates-lowest-since-2019/102531448](https://abc.net.au/news/2023-06-28/nt-alice-springs-crime-rates-lowest-since-2019/102531448)

## Nordic Nutrition guidelines

The latest edition of the Nordic Nutrition Recommendations (NRR2023) was unveiled by Karen Ellemann, Secretary General of the Nordic Council of Ministers on June 20th. The NRR2023 is the result of five years of work of several hundred researchers and experts, in the Nordic cooperation’s biggest and most globally spread project. This sixth edition of the NNR guidelines aims to provide a path towards healthier bodies and a more sustainable world.

Ellemann, in her preface to the NNR2023, articulates the ambition and heart behind this review saying, “This new edition is our bravest step yet. It will present the best available data for how to eat for the health of our bodies and for our planet.” Indeed, this edition integrates environmental aspects into dietary recommendations, reflecting global commitments and the Nordic Vision for a sustainable region by 2030.

The NNR 2023 takes a particularly strong stance on alcohol. The guidelines state that there is no safe lower limit for alcohol consumption. They advise children, adolescents, and pregnant women to abstain from alcohol.

These recommendations are backed up by a wealth of scientific data on the health impacts of alcohol. The guidelines also highlight alcohol’s contribution to adverse environmental impacts, as manufacturing, transportation, and post-use of alcoholic beverages utilize energy and fuel, contributing to our dietary climate impact.

Yet, for all the research supporting these guidelines, the NNR 2023 acknowledges that there are still gaps in our knowledge. Data for evaluating the quantitative environmental impact of alcoholic beverages is still lacking, as are effective methods for investigating the amount and pattern of alcohol intake.

The core message is that alcohol is not an essential nutrient and its energy contribution negatively affects diet quality. The NNR 2023 recommends avoiding alcohol intake whenever possible. And if alcohol is consumed, the intake should be very low.

[norden.org/en/publication/nordic-nutrition-recommendations-2023](https://norden.org/en/publication/nordic-nutrition-recommendations-2023)

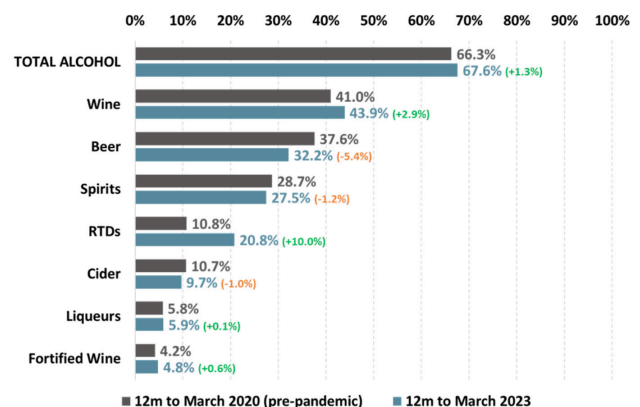
## Alcohol consumption patterns in Australia

New data from Roy Morgan’s Alcohol Consumption Report shows that the increase in alcohol consumption during the pandemic years of 2020-2022 has proven short-lived with lower consumption of wine, beer and spirits compared to a year ago – but consumption of RTDs (Ready-to-drink) has continued to increase.

In the year to March 2023 a total of 13,709,000 Australians (67.6%) aged 18+ consumed alcohol in an average four-week period compared to 13,073,000 (66.3%) in the year to March 2020 – an increase of well over 600,000 Australians. Although the ‘big three’ alcohol types of wine, beer and spirits are all down on a year ago the consumption of wine is still well above pre-pandemic levels. Wine remains the most popular alcoholic drink with 43.9% of Australian adults drinking wine in an average four weeks. By age, those most likely to be drinking wine are aged 50-64 (49.9%) and 65-79 (49.6%). Consumption of RTDs has continued to increase and is now at a record high, with the number of Australians consuming RTDs increasing from 2,138,000 (10.8%) pre-pandemic to 4,208,000 (20.8%).

Wine is the most commonly consumed beverage increasing from 8,096,000 (41.0%) pre-pandemic to 8,898,000 (43.9%) in the 12 months to March 2023. Spirits consumption has decreased post pandemic from 6,759,000 (33.8%) of Australians down to 5,573,000 (27.5%). Although beer did enjoy an increase in consumption during 2021, now only 32.2% of Australian adults drink beer in an average four weeks, down significantly by 5.4% points from pre-pandemic

Proportion of Australians aged 18+ who consume alcohol in an average four-week period



[roymorgan.com/findings/9153-alcohol-consumption-march-2023](https://roymorgan.com/findings/9153-alcohol-consumption-march-2023)

## Europe's Spirits Producers successfully achieve energy on-pack target

Europe's spirits producers have achieved a significant milestone by successfully delivering on their commitment to provide energy information on labels for spirits sold in the EU. A progress report published in June reveals that around 66% of total volumes of spirits put on the EU market are now released in SKUs/bottles featuring energy-information on-pack. This share is expected to grow further over time. The sector has also made rapid progress in developing and rolling digital consumer information solutions. These accomplishments are part of a voluntary agreement, known as the Memorandum of Understanding (MoU) on Consumer Information, which was facilitated by the European Commission in 2019. The MoU offers clear guidance to producers on how to make nutrition information and ingredient listings available to consumers for spirit drinks (which are not mandatory under current EU regulation).

Working in close cooperation with the wine sector, spirits producers have managed to create bespoke e-label solutions that enable consumers across

Europe to access product-specific information easily in their own language through QR code technology. As a result, the number of QR codes printed on back labels is substantially increasing.

SpiritsEUROPE strongly believes in the benefits of e-labels from reducing packaging waste, providing detailed and tailored information to consumers, lowering production costs, and fostering innovation. The U-label Platform has proven to be an easy-to-use solution, allowing consistent and best practice information sharing with our customers across the EU. They expect rapid progress in this area, are urging the European Commission to take a coordinated approach to digital labelling throughout the EU and include clear rules on digital labelling in the upcoming revision of the Regulation on Food Information to Consumers.

[spirits.eu/upload/files/CP.MI-086-2023%20-%20Memorandum%20of%20Understanding%20-%203rd%20%20Implementation%20Report-%20FINAL%281%29.pdf](https://spirits.eu/upload/files/CP.MI-086-2023%20-%20Memorandum%20of%20Understanding%20-%203rd%20%20Implementation%20Report-%20FINAL%281%29.pdf)

## Only one in five know alcohol guidelines

Just 18% of UK adults know the government's low-risk drinking guidelines, according to research by the charity Drinkaware. While 87% had heard of the guidelines, only 18% knew that they were 14 units a week for men and women. The results are based on a survey of more than 6,300 people for this year's Alcohol Awareness Week.

People aged over 55 were the most knowledgeable about the guidelines, with 22% knowing about the 14-unit recommended limit. Younger people were less aware with just 11% of those in the 18-34 age bracket knowing the guideline limit, along with 20% of 35 to 54-year-olds. More women (22%) were aware of the limits than men (15%) while the most aware nation was Scotland at 22%, compared to a UK-wide average of 18%.

Drinkaware CEO Karen Tyrell commented, 'It is worrying that the vast majority of people still don't know what the low-risk drinking guidelines are, despite them being around since 2016... Alcohol Awareness Week is a chance to help people understand them and how they can be used to reduce the risk of serious health problems. If anyone is worried about their drinking or wants to drink less, Alcohol Awareness Week is a good time to talk to your friends and family. We all need to be able to talk more openly about alcohol so we can tackle the harm it does.'

[drinkaware.co.uk/news/80-of-adults-in-the-uk-don-t-know-the-low-risk-drinking-guidelines](https://drinkaware.co.uk/news/80-of-adults-in-the-uk-don-t-know-the-low-risk-drinking-guidelines)

## Brewers reduce alcohol in beverages responding to UK Alcohol Duty changes

From August, the UK Alcohol Duty system will change so that all alcoholic drinks are taxed based on their alcohol content. The change aims to make the system fairer and more responsive to new products entering the market. However, from August, beers of 3.4% or under will pay a lower rate of £9.27 per litre of alcohol in the product, as opposed to £21.01 for beers between 3.5-8.5%.

In anticipation, popular brewers have reduced alcohol content of some products, saving the producer between 2p and 3p per bottle or can, and keeping prices to the consumer the same. Brands that have already reduced alcohol content include Spitfire, Green King's Old Speckled Hen, Foster's and Bishops Finger. Carlsberg Marston's Brewing Company (CMBC) is reducing also the abv of its flagship Danish Pilsner from 3.8% to 3.4%.

## Iran's relationship with alcohol is reaching a tipping point

An article in the Financial Times by Tehran correspondent, Najmeh Bozorgmehr highlights how an artist's death has raised questions about the dangers of the black market for liquor in Iran. Khosrow Hassanzadeh died in June as the result of alcohol poisoning from drinking aragh, a popular Iranian moonshine.

Bozorgmehr states that "Many Iranians are angry at the Islamic republic's ideologically motivated alcohol ban, which has existed since 1979 and ensures the continued flow of a dangerous black market supply of drinks. What has long been seen as pragmatism towards drinking — or at least turning a blind eye — is increasingly becoming unwieldy. Strong public demand benefits the illegal multibillion-dollar business of importing alcoholic beverages and facilitating their production inside Iran, but a lack of regulation leaves ample room for things to go wrong. There is also widespread speculation that regime

loyalists who back the Islamic decree might be sabotaging these bottles of illegal liquor, to discourage consumption of alcohol. Local media has reported a sudden rise in deaths and loss of sight resulting from alcohol poisoning in recent weeks. Iran's police chief, Ahmad-Reza Radan, has rejected the possibility of an organised sabotage attempt by Islamists".

Bozorgmehr explains that "Unlike the Taliban in Afghanistan, Iranian authorities cannot enforce the anti-alcohol law too strictly, as doing so would mean punishing millions of people every day. But nor does the government have the self-confidence to embark on reforms that would mirror laws in Turkey, where drinking is permitted. Iran's political establishment fears that such a move would threaten its ideological identity and incur the wrath of loyalists".

[ft.com/content/66375aeb-6bfc-48de-a94b-2d92951d8f1e](https://www.ft.com/content/66375aeb-6bfc-48de-a94b-2d92951d8f1e)

## Could an ancient, climate-friendly crop be the future of beer?

The Guardian Newspaper tells the story of Pierre Thiam and Garrett Oliver and their mission to introduce brewmasters to fonio, a grain believed to be Africa's oldest cultivated cereal. They believe that the tiny golden ancient grain has the potential to solve pressing modern environmental and economic challenges. Fonio can thrive with just 600mm annual rainfall, and none of the irrigation, pesticides or fertilizers needed by other grains. Brewing with fonio follows the same process as making beer from other grains, such as rice, wheat or barley.

Pierre Thiam, a Senegalese-born chef believes using fonio could help alleviate big issues in west Africa and worldwide like poverty, food shortages, the climate crisis and drought. He is starting an international trend of brewing beer with fonio, to help the environment and give small west African farmers economic security and sustainable income. "Brewers are interested in this because they have the opportunity to be part of the solution by integrating fonio, a climate-friendly crop, into their product," said Thiam.

Garrett Oliver, the brewmaster of Brooklyn Brewery, and editor of The Oxford Companion to Beer is encouraging brewers to adopt the grain "Fonio creates beautiful flavors in beer. I'm sure people

have been brewing with fonio for thousands of years," said Oliver. He lists beers such as a traditional beer in South Africa called umqombothi that is brewed from sorghum, a grain in the millet family. In Burkina Faso and Togo, people brew a fonio beer called tchapalo, and, the most popular beer at La Maison Kalao, a pan-African brewery near Dakar, is a blonde fonio brew.

"It's creamier, there are floral and fruity notes that remind me of lychee or gewürztraminer and there is a slight bitterness reminiscent of the amino acid bitterness that forms the backbone of sake," Oliver said. "It's just a part of the grain that gives the beer a really crisp edge."

The article describes how "Thiam's line of fonio products, Yolélé, started selling at Whole Foods in 2017. Their next release in Europe and the US is a beer called Fonio Rising due in the autumn, and they're talking to a large European brewery about a collaboration. The biggest launch to date though, has been the Brewgooder Fonio Session IPA, made with 10% fonio from Senegal and Togo that launched this spring. The fonio IPA, has notes of lychee, grapefruit and florals, which, thanks to the grain, will fund clean water projects in Africa, while putting a spotlight on brewing with fonio".

[theguardian.com/environment/2023/jul/06/fonio-beer-climate-friendly-grain](https://www.theguardian.com/environment/2023/jul/06/fonio-beer-climate-friendly-grain)

**AIM – Alcohol in Moderation was founded in 1991 as an independent not for profit organisation whose role is to communicate “The Responsible Drinking Message” and to summarise and log relevant research, legislation, policy and campaigns regarding alcohol, health, social and policy issues.**

### **AIM Mission Statement**

- To work internationally to disseminate accurate social, scientific and medical research concerning responsible and moderate drinking
- To strive to ensure that alcohol is consumed responsibly and in moderation
- To encourage informed and balanced debate on alcohol, health and social issues
- To communicate and publicise relevant medical and scientific research in a clear and concise format, contributed to by AIM’s Council of 20 Professors and Specialists
- To publish information via [www.alcoholinmoderation.com](http://www.alcoholinmoderation.com) on moderate drinking and health, social and policy issues – comprehensively indexed and fully searchable without charge
- To educate consumers on responsible drinking and related health issues via [www.drinkingandyou.com](http://www.drinkingandyou.com) and publications, based on national government guidelines enabling consumers to make informed choices regarding drinking
- To inform and educate those working in the beverage alcohol industry regarding the responsible production, marketing, sale and promotion of alcohol
- To distribute AIM Digest Online without charge to policy makers, legislators and researchers involved in alcohol issues
- To direct enquiries towards full, peer reviewed or referenced sources of information and statistics where possible
- To work with organisations, companies and associations to create programmes, materials or policies that communicate responsible alcohol consumption messages or work to reduce alcohol related harm.

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