

Contents

News from around the world

Medical news

Alcohol Consumption, High-Density Lipoprotein Particles and Subspecies, and risk of cardiovascular disease: Findings from the PREVEND prospective study

To drink (moderately) or not to drink by Erik Skovenborg

Genetic predisposition, modifiable lifestyles, and their joint effects on human lifespan

Adolescent alcohol use is associated with differences in the diversity and composition of the oral microbiome

Healthy lifestyle and cancer survival: A multinational cohort study

Association of combined healthy lifestyle with risk of adverse outcomes in patients with prediabetes

Haemorrhagic strokes attributable to chronic alcohol consumption and heavy episodic drinking in France

Association between alcohol consumption and peripheral artery disease

Role of diet in the risks of esophageal adenocarcinoma and squamous cell carcinoma

Alcohol consumption may be a risk factor for cerebrovascular stenosis in acute ischemic stroke and transient ischemic attack

Genetic risk, health-associated lifestyle, and risk of early-onset total cancer and breast cancer

Alcohol-induced blackouts may be linked to how a person drinks, not just how much

Long-term effects of alcohol consumption on anxiety in adults

Joint association of biological aging and lifestyle with risks of cancer incidence and mortality

Adherence to the Mediterranean diet and 20-year incidence of hypertension

Association of a Mediterranean lifestyle with all-cause and cause-specific mortality

Mediterranean diet and a health behaviour index in relation to cardiovascular biomarkers

Long-term impact of Mediterranean diet on cardiovascular disease prevention

The relationship between alcohol consumption and amygdala volume in a community-based sample

Dose–response effect of prenatal alcohol exposure on perinatal outcomes

Impact of smoking and alcohol consumption on early-onset gastric cancer development in young Koreans

Serotonergic dysfunction may mediate the relationship between alcohol consumption and Alzheimer's disease

2	Is low-level alcohol consumption really health-protective? A critical review of approaches to promote causal inference and recent applications	
	Mediterranean diet and colorectal adenomas	
	Dose-response analysis between alcohol consumption and psoriasis	27
3	Medical research listed by publication date	
10	Social and policy news	
	How is alcohol consumption and heavy episodic drinking spread across different types of drinking occasion in Great Britain	28
16	Binge drinking among sports gamblers	
17	A thematic analysis of alcohol and alcohol-related harm across health and social policy in Aotearoa New Zealand	29
	Study finds alcohol ED presentations increasing among older New Zealanders	
18	The association between single and dual use of cannabis and alcohol and driving under the influence and riding with an impaired driver	30
	Where do high-risk drinking occasions occur more often?	
19	The intergenerational continuity of alcohol use in a population sample	31
	Interrupted time series analysis of bar/tavern closing hours and violent crime	
20	Digital alcohol marketing and gender	32
	The association between environmental temperature and alcohol consumption	
	Social research listed by publication date	33
21	Drinkaware Barometer in Ireland	
	Alcohol: availability, affordability, related harm, and policy in Ireland	34
22	Italy - The annual National Alcohol Observatory report	
	Drinking habits survey in Finland	35
	IAS report - Alcohol and Economic Crises	
	Scotland minimum price increase agreed	
23	Alcohol-specific deaths in the UK: registered in 2022	36
	Overview of Motor Vehicle Traffic Crashes in the US for 2022-23	
	Plan for server training in Ohio	
24	Healthier party culture initiative in Denmark	37
	Taking action on Fetal Alcohol Spectrum Disorder in New Zealand	
	HBSC international report on adolescent substance use in Europe, central Asia and Canada	38
25	Ad Council and NHTSA in the US highlight the dangers of buzzed driving	39
	No progress in tackling alcohol harms midway through National Alcohol Strategy in Australia	
	Global wine consumption update	40
26	Pernod Ricard launches a new digital campaign Drink more water	

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E: info@alcoholinmoderation.com

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Henk Hendriks - Co-director
 E: henk@alcoholinmoderation.com

Creina Stockley - Co-director
 E: creina@alcoholinmoderation.com

Alison Rees - Editor
 E: alison@alcoholinmoderation.com

Zoe Westwood – Finance and subscriptions
 E: zoe@alcoholinmoderation.com

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France

In France, Gérald Darmanin, Minister of the Interior, has said that the specific offense of driving under the dual influence of alcohol and narcotics “remains under-recognized” and he has asked regional police in France to strengthen double screening for alcohol and drugs during road checks in order to combat “multiple consumption” while driving.

In 2022, “1,004 people” were killed in road accidents in which “at least one driver” involved had consumed alcohol or drugs. 28% of drivers involved in a fatal accident presented a double positivity to alcohol and drugs tests. When the police doubled the number of alcohol and drug screenings in 2022, the number of drivers found to be driving under the influence were up compared to 2021; for alcohol up 14%, for drug use up 12% and for the two causes combined up 18%.

US

New York towns and villages that have post-Prohibition bans on alcohol sales would be forced to lift such restrictions under a bill moving through the Legislature.

The bill, which is up for a state Senate vote after advancing out of a committee, would strike down a 1934 law passed right after Prohibition that allowed towns and cities to opt to stay dry. The bill's sponsor argues that lifting restrictions will spur business growth and save those who live in such places from having to buy their alcohol elsewhere, “allowing them to enjoy a glass of wine with dinner at local restaurants”.

Latvia

The government in Latvia plans to limit the hours during which alcoholic beverages can be purchased in retail. Currently, alcoholic beverages can be purchased from 8am to 10pm but the proposed changes would see these sales restricted to 10am to 8pm Monday to Saturday, and 10am to 6pm on Sunday. This was decided by the Saeima's Social and Labor Affairs Commission during the second reading of amendments to the Alcohol Beverage Circulation Law on April 9.

In March the commission decided to increase the age at which it is possible to purchase alcoholic beverages to 20 years (up from 18). Amendments to Latvia's Alcohol Beverage Circulation Law also aim to limit advertising and marketing of alcoholic beverages, availability of alcohol, and provide additional information to consumers about its composition and harm.

Korea

Restaurants will be allowed to serve liquor by the glass from April in Korea after a significant shift in alcohol sales regulations.

The Ministry of Economy and Finance pre-announced legislation regarding revisions to the enforcement decree of liquor licenses in March. Under the proposed legislation, the sale of liquor servings by the glass will be allowed. The revision allows for selling liquor such as soju, a Korean distilled alcoholic drink, in units smaller than bottles.

Alcohol Consumption, High-Density Lipoprotein Particles and Subspecies, and Risk of Cardiovascular Disease: Findings from the PREVEND Prospective Study

Authors

Kunutsor SK; Bhattacharjee A; Connelly MA; Bakker SJL; Dullaart RPF

Citation

Int J Mol Sci (2024), 25, 2290. doi.org/10.3390/ijms25042290

Author's Abstract

Background The associations of HDL particle (HDL-P) and subspecies concentrations with alcohol consumption are unclear.

Objective(s) We aimed to evaluate the interplay between alcohol consumption, HDL parameters and cardiovascular disease (CVD) risk.

Methods In the PREVEND study of 5151 participants (mean age, 53 years; 47.5% males), self-reported alcohol consumption and HDL-P and subspecies (small, medium, and large) by nuclear magnetic resonance spectroscopy were assessed. Hazard ratios (HRs) with 95% CIs for first CVD events were estimated. In multivariable linear regression analyses, increasing alcohol consumption increased HDL-C, HDL-P, large and medium HDL, HDL size, and HDL subspecies (H3P, H4P, H6 and H7) in a dose-dependent manner. During a median follow-up of 8.3 years, 323 first CVD events were recorded.

Results Compared with abstainers, the multivariable adjusted HRs (95% CIs) of CVD for occasional to light, moderate, and heavy alcohol consumers were 0.72 (0.55–0.94), 0.74 (0.54–1.02), and 0.65 (0.38–1.09), respectively. These associations remained consistent on additional adjustment for each HDL parameter. For CVD, only HDL-C was associated with a statistically significant decreased risk of CVD in a fully adjusted analysis (HR 0.84, 95% CI 0.72–0.97 per 1 SD increment). For coronary heart disease, HDL-C, HDL-P, medium HDL, HDL size, and H4P showed inverse associations, whereas HDL-C and HDL size modestly increased stroke risk. Except for H6P, alcohol consumption did not modify the associations between HDL parameters and CVD risk. The addition of HDL-C, HDL size, or H4P to a CVD risk prediction model containing established risk factors improved risk discrimination.

Conclusions Increasing alcohol consumption is associated with increased HDL-C, HDL-P, large and medium HDL, HDL size, and some HDL subspecies. Associations of alcohol consumption with CVD are largely independent of HDL parameters. The associations of HDL parameters with incident CVD are generally not attenuated or modified by alcohol consumption.

Forum Summary

A protective effect of moderate alcohol consumption for CVD has been reported by numerous studies over decades. This was a key finding of this study too. Further, it is also recognised that alcohol consumption increases high density lipoprotein cholesterol (HDL-C), and this was confirmed by this study too. HDL-C has been considered for years the “good” cholesterol, as suggested by the inverse correlation between its plasma levels and cardiovascular (CVD) risk, as shown by the epidemiology. However, the relationship between HDL and atherosclerosis has been found to be much more complex. This study failed to find an association between alcohol consumption and HDL parameters, suggesting that the clinical relevance of HDL is more related to reverse cholesterol transport in which an inverse relationship has been detected with the prevalence of atherosclerosis, inflammation, and the promotion of plaque stability, as well as the incidence of CV events such as acute myocardial infarction. The ability of HDL to promote reverse cholesterol transport therefore appears to be more related to its size and composition in terms of proteins and lipids, than to HDL-C plasma levels, where identifying efficacy should move to HDL function measurement, that is, reverse cholesterol transport, instead of plasma levels.

Forum Comments

Background

Cardiovascular disease (CVD) remains a leading cause of morbidity and mortality worldwide, imposing a significant burden on economies and health systems. Established risk factors for CVD include hypertension, diabetes, smoking, obesity and dyslipidaemia. The role of yet another risk factor on CVD risk, namely alcohol consumption, is more complex (Ding et al., 2021; Yoon et al., 2020). Extensive epidemiological research indicates that a J-shaped association exists between alcohol consumption and CVD risk. In other words, moderate alcohol consumption is associated with a reduced risk of CVD mortality whereas high alcohol consumption is not. Better understanding and documenting the mechanisms that underly this association would further substantiate the causal relation between moderate alcohol consumption and CVD.

CVD develops over several decades, in part by unbalances in an individual's lipoproteins. Lipoproteins are the transporters of hydrophobic lipids, namely triglycerides and cholesterol, within the body. Lipoproteins are essential contributing factors of CVD. Whereas the lipoprotein low-density lipoprotein (LDL) provides cells of the vascular wall with cholesterol for growth, the lipoprotein high-density lipoprotein (HDL) disposes of the surplus of cholesterol in these cells or disposes of cholesterol erroneously deposited in other cells like macrophages. Enhanced cholesterol uptake by macrophages, leads into foam cell formation and ultimately results in plaque formation and inflammation (Bhargava et al. 2022, Das and Ingole, 2023).

One of those lipoproteins, HDL is the lipoprotein under consideration in the Dutch prospective cohort Prevention of Renal and Vascular End-stage Disease (PREVEND) study, reported on by Kunutsor et al. (Kunutsor et al., 2024). HDL was discovered approximately 70 years ago, and approximately 60 years ago, the Framingham Heart Study reported the inverse relationship between plasma levels of these lipoproteins and atherosclerosis (Wilson et al., 1980).

So, HDL, generally considered a protective factor for CVD (Huang et al., 2017; Pullinger et al., 2021), removes excess cholesterol from cells, especially macrophages in the artery wall, through a process called reverse cholesterol transport (Lee et al., 2021). Reverse cholesterol transport is considered important in the protection against the process of atherogenesis. In addition, HDL has an anti-inflammatory capacity and protects against inflammatory processes in the vascular wall, which is also important in the prevention of cardiovascular events (Jia et al., 2021).

Critique

The International Journal of Molecular Sciences, an advanced forum for biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry, published a paper on a longitudinal epidemiological study analysing HDL subspecies by NMR spectroscopy. Support for assessment of precise HDL subspecies came from an earlier assessment of HDL and incident vascular events that showed that two of seven HDL size-based subspecies modestly improved risk prediction for myocardial infarction and composite vascular end points (Deets et al. 2023).

The authors conclude that alcohol consumption affects various HDL characteristics and is associated with a lower risk for CVD, but the lower risk association is independent of specific HDL parameters. Similarly, the beneficial association between some HDL parameters and CVD outcome is unaffected by alcohol consumption.

This conclusion may seem somewhat confusing. HDL which is increased in moderate alcohol consumers, and which has been reported to protect against CVD, seems not to be affecting the alcohol-CVD association.

Let us consider the alcohol-HDL-CVD relationship further. Plasma levels of HDL-cholesterol (HDL-C) are strongly associated with CVD. This observation is strong, graded and coherent across the populations studied (Boekholdt et al., 2013). In recent years, Mendelian randomization experiments and drug interventions increasing plasma levels of HDL-C have casted doubt on the causal link (Voight et al., 2012). Furthermore, drugs that increase plasma levels HDL-C have failed to show improved cardiovascular outcomes (Probstfield et al., 2018). One possible explanation for this discrepancy is that cholesterol mass within HDL is an indicator but not a cause of its beneficial effects.

Numerous nutrition intervention studies (Sierksma et al., 2002, Wilkens et al., 2022) and large scale longitudinal epidemiological studies (Rimm et al., 1999) (Trius-Soler et al., 2024) have shown that moderate alcohol consumption results in, and is associated with, increased HDL-C concentrations. Moderate alcohol consumption not only increases HDL-C but also protein and enzyme activities that may or may not accompany this increase in HDL-C. It has been shown, initially in nutrition intervention trials, that not only the composition of the HDL particles changes during alcohol consumption, but also the functionality of the particle (Carmont et al. 2011). One important, previously mentioned, a function of the HDL particle is the removal of excess cholesterol from macrophages in the vascular wall, which has been shown stimulated in interventions with moderate alcohol consumption (Beulens et al., 2004; Sierksma et al., 2002, 2004).

Also, epidemiological research has shown that not the quantity of HDL-C but the functioning of the reverse cholesterol transport may be the real protection that HDL has to offer in CVD (Rohatgi

et al., 2014, Adorni et al. 2021, Badita et al. 2023). Other epidemiological studies have estimated the importance of HDL increases in CVD protection from moderate alcohol consumption and showed that up to 50% of the protective effect is attributable to the alcohol-induced HDL increase (Mukamal et al., 2005).

However, measuring HDL-C is easier than analysing HDL function. In clinical practice, the standard measure of HDL is the cholesterol content in HDL particles after precipitation of apolipoprotein-B containing lipoproteins; apoB-containing lipoproteins within the arterial wall is the key initiating event in the pathobiology of atherosclerosis leading to CVD. More refined techniques to determine HDL-C in serum include amongst others ultracentrifugation, electrophoresis, and nuclear magnetic resonance (NMR). NMR is used to obtain a better characterization of these particles aiming to better predict CVD risk. Moreover, using nuclear magnetic resonance (NMR) spectroscopy is relatively easy. It has previously been shown that HDL particles and subspecies characterized by this technique vary in their associations with incident CVD (Potočnjak et al., 2017) and type 2 diabetes (Deets et al., 2023; Sokooti et al., 2021). Indeed, an earlier PREVEND Study publication assessing the association of HDL particle subspecies with incident Diabetes Type 2 (T2D) in the general population, showed in an initial crude model, that higher levels of HDL-C, HDL-P, large, medium HDL particles, and HDL size were associated with a lower risk of T2D. It was further found that greater HDL size and lower levels of H4P (medium HDL size) were associated with a lower risk, whereas higher levels of H2P (small HDL size) were associated with a higher risk of developing T2D (Sokooti et al. 2021). It had been previously established that HDL-C is also inversely associated with risk of developing T2D (Wilson et al., 2007, Abbasi et al., 2013), and that, moderate alcohol consumption is also inversely associated with risk of developing T2D (Joosten et al. 2011, Ma et al. 2022).

One difficulty with the techniques that exist to measure HDL, HDL-C and HDL functionality is that they lack mutual validation. So, in the case of the PREVEND study by Kunutsor et al. (2024), the authors may not have found clear associations between alcohol consumption and HDL particles affecting CVD incidence, because

HDL functionality was not directly nor indirectly evaluated. This issue was mentioned by the authors in the last sentence of their discussion section.

Also, numerous associations were not significant. Although the authors claim that a strength of the study was the large sample size (8,592 subjects) and the prolonged follow-up period (1997 onwards of five follow-up screening rounds with 3-to-4-year intervals), whereas only 323 CVD events occurred evaluating some 43,000 person years. Further, lack of ethnic diversity and inadequate representation of women in some previous studies limit generalizability of those findings.

Therefore, this interesting study shows that HDL changes with moderate alcohol consumption. The suggestion that there may not be a mediating role for the beneficial moderate alcohol-CVD relationship is not explained by the parameters analysed in this study but is most likely explained by other characteristics of the HDL particle, namely its function in reverse cholesterol transport.

Specific Comments from Forum Members

Forum member Skovenborg reminds us that “While an increasing TC/HDL-C ratio is a powerful predictor of CHD risk in men and women (Calling et al., 2019), randomized trials of HDL-C modifying drugs have not shown the anticipated benefit (Riaz et al., 2019), and results of Mendelian randomization analyses also challenge the concept that raising plasma HDL-C will translate into reductions in risk of MI (Voight et al., 2012). However, HDL is not simply a carrier of cholesterol taken from cells for redistribution and removal from the body; HDL is a complex constellation of many proteins and phospholipids organized into HDL subspecies with diverse physiochemical properties and metabolic actions. The main protein on HDL is apolipoprotein A1 that lends structural stability to the particle and stimulates efflux of cholesterol from cells to HDL, enlarging the particles. However, ongoing research has focused on apolipoprotein C3 as a potentially important protein that may modulate HDL function. ApoC3 is present on 6% to 15% of HDL, and several cohort studies found HDL that contains apoC3 associated with a higher risk of CHD: pooled relative risk per standard deviation, 1.09 (95% CI 1.01-1.18), whereas HDL that lacks

apoC3 was associated with lower risk: relative risk 0.76 (0.70-0.83) (Jensen et al., 2018).

HDL containing apoC3 is associated with metabolic risk factors, such as diabetes mellitus, obesity, and blood glucose. In contrast, HDL lacking apoC3 is associated with favourable levels of these risk factors. Regarding lifestyle, HDL containing apoC3 levels were 0.9% lower (95% CI: -1.7, -0.1) per each 20 MET hours/week higher physical activity while HDL not containing apoC3 levels were 1.6% (0.8-2.3) higher per 15 g/day higher alcohol consumption (Koch et al., 2017). The MR approach, having thus far focused on HDL cholesterol or apoA1 levels, may not capture the functional properties of HDL that play a role in the disease pathology (Sacks and Jensen, 2018)."

Calling S., Johansson. S-E., Wolff, M., Sundquist, J., Sundquist, K. (2019), "The ratio of total cholesterol to high density lipoprotein cholesterol and myocardial infarction in Women's health in the Lund area (WHILA): a 17-year follow-up cohort study", *BMC Cardiovascular Disorders* Vol. 19 No. 1, 239, doi: 10.1186/s12872-019-1228-7.

Riaz, H., Khan, S.U., Rahman, H., Shah, N.P., Kaluski, E., Lincoff, A.M., Nissen, S.E. (2019), "Effects of high-density lipoprotein targeting treatments on cardiovascular outcomes: A systematic review and meta-analysis", *European Journal of Preventive Cardiology*, Vol. 26 No. 5, pp. 533-543, doi: 10.1177/2047487318816495.

Voight, B.F., Peloso, G.M., Orho-Melander, M., Frikke-Schmidt, R., Barbalic, M., Jensen, M.K. et al. (2012), "Plasma HDL cholesterol and risk of myocardial infarction: a mendelian randomisation study", *Lancet* Vol. 380 No. 9841, pp. 572-580, doi: 10.1016/S0140-6736(12)60312-2.

Jensen, M.K., Aroner, S.A., Mukamal, K.J., Furtado, J.D., Post, W.S., Tsai, M.Y., Tjønneland, A., Polak, J.F., Rimm, E.B., Overvad, K., McClelland, R.L., Sacks, F.M. (2018), "HDL subspecies defined by presence of apolipoprotein C-III and incident coronary heart disease in four cohorts", *Circulation* Vol. 137 No. 13, pp. 1364-1373, doi: 10.1161/CIRCULATIONAHA.117.031276.

Koch, M., Furtado, J.D., Jiang, G.Z., Gray, B.E., Cai, T., Sacks, F., Tjønneland, A., Overvad, K., Jensen, M.K. (2017), "Associations of anthropometry and lifestyle factors with HDL subspecies according to apolipoprotein C-III", *Journal of Lipid Research*, Vol. 58 No. 6, pp. 1196-1203, doi: 10.1194/jlr.P073288

Sacks, F., Jensen, M.K. (2018), "From High-Density Lipoprotein Cholesterol to Measurements of Function", *Arteriosclerosis, Thrombosis, and Vascular Biology*, Vol. 38 No. 3, pp. 487-499, doi: 10.1161/ATVBAHA.117.307025.

Forum member Harding found this study confusing. "Its conclusion that light to moderate alcohol consumption is protective for CHD and that this is accompanied by an increase in HDL-C is consistent with numerous studies over recent decades. This is obviously important because of its implications for causality. But then on further analysis of the sub-fractions ('parameters') of HDL, the study finds no association of any of them with alcohol consumption and CVD. I assume that it is this finding that justifies the sentence, in the Abstract and in the Conclusion, 'Furthermore, the associations of these HDL parameters with cardiovascular outcomes appear not be attenuated or modified to a considerable extent by alcohol consumption.'"

I did get the overall impression that the authors are seeking to place as little emphasis on alcohol's cardio-protective effect as possible. For example, in the introduction, the sentence, 'A number of studies have shown that moderate alcohol consumption is associated with a higher risk of adverse cardiovascular outcomes' is justified by reference to two studies, Bell et al. (2017) and Mostofsky et al. (2016). In the Bell et al. (2017) paper, I am unable to find any cardiovascular outcomes for which moderate drinkers are at higher risk. The Mostofsky et al. (2016) paper is mainly concerned with increased cardiovascular events in the 24 hours after any consumption of alcohol, but also finds protection from moderate drinking in the longer term. Both can't be right for moderate drinkers. So, the authors are struggling to justify their statement.

Further, the study found that moderate alcohol consumption was protective for coronary heart disease (CHD), with associations for HDL-C and most of its 'parameters' but was also associated with a higher risk for stroke. But the definition for stroke in section 4.3 is, 'Stroke encompassed subarachnoid haemorrhage, intracerebral haemorrhage, other specified and unspecified intracranial haemorrhages, occlusions and stenoses of precerebral or cerebral arteries, and carotid artery obstruction. So 'stroke' includes both ischemic and haemorrhagic stroke. It is well known that alcohol consumption (moderate or not) is a risk factor for haemorrhagic stroke, but moderate consumption is protective for ischemic stroke. The authors mention the relatively low incident rate of stroke. Even so, as this study did not distinguish between the two,

the overall conclusions relating to stroke and CVD (encompassing CHD and all strokes) can be safely ignored.

The authors go on to say in section 3.3 that both CHD and stroke are conditions both mediated by atherosclerosis. Given their definition of stroke, I am not sure they are. In section 3.2, they say that in previous work, the various parameters of HDL were associated with lower risk of ischemic stroke. In this section they say, 'Our key finding of a protective effect of occasional to light alcohol consumption on cardiovascular risk is consistent with previous studies [23,26,27]'. They don't express this key finding in the Abstract or Conclusion.

Forum members Harding and Ellison similarly have concerns with the heterogenous nature of the heavy drinkers' category. "Having such a small number of heavy drinkers in the top category of alcohol intake, it is unclear how these subjects were included in the overall analyses. The number of subjects in that category was much, much lower than in the three middle groups. There were large numbers of subjects in the middle groups of no alcohol and two groups of "moderate" drinkers from which reasonable estimates of effect of alcohol could be evaluated. The heavy drinking group was very different in numerous lifestyle and metabolic factors (e.g., smoking, waist circumference, CRP, risks of CHD by alcohol). Further, there were only 11 CHD events in this group. This was especially shown in Table 3 of associations of alcohol with CHD (the effects on CVD are ignored, as outlined below); in the unadjusted model, there was a level or gradual change in risk associated with increasing alcohol intake, while when certain adjustments were made for different varieties of HDL, there was an abrupt change (often a change in direction of effect) for the highest category of alcohol intake. Such changes suggest that subjects in the top group (> 30 g/day of alcohol) were very different in many characteristics and not representative of the effects just of increasing alcohol consumption. It is uncertain how (or if) this had strong effects on their results."

Forum member Ellison had three further comments on this paper. The first was noted by Forum member Harding and other Forum members that it is a confusing paper. "At one point the authors state that moderate drinking

reduces coronary heart disease (CHD) then that alcohol increases some cardiovascular conditions, and the paper seems to focus more on potentially harmful aspects of alcohol consumption. Second, the combining in their analyses on CHD with other cardiovascular diseases (CVD) doesn't really make sense, as they state that the risk of stroke is increased by alcohol, but the risk of CHD is decreased, so combining CHD risk with stroke risk would tend to block any favourable or adverse effects when combined. (Note also that they did not separate ischemic stroke, which is reduced by moderate alcohol, from haemorrhagic stroke, the risk of which is usually found to be increased by alcohol.)

Finally, reporting that certain varieties of HDL increase or decrease with alcohol consumption is interesting, but I am not sure how much this means for the potential prevention of CHD. Epidemiologic studies have consistently (almost always) shown that regular, moderate alcohol intake, especially with food, reduces the risk of CHD and total mortality significantly, and total HDL is one (but only one) of the mechanisms leading to this protective effect. If the authors want to describe alcohol's overall effect on disease, they need to also consider the dozens (or even hundreds) of other mechanisms related to the effects of alcohol intake before reaching conclusions that apparently suggest to them that alcohol does not affect CHD risk."

Concluding comments

The clinical relevance of HDL reverse cholesterol transport is indeed well highlighted by many studies, in which an inverse relationship has been detected between reverse cholesterol transport and the prevalence of atherosclerosis, inflammation, and the promotion of plaque stability, as well as the incidence of CV events such as acute myocardial infarction, occurring independently of plasma HDL-C level (Soria-Florido et al., 2020, Rohargi et al. 2014, 2021). The ability of HDL to promote reverse cholesterol transport therefore appears to be more related to its size and composition in terms of proteins and lipids, than to HDL-C plasma levels, where identifying efficacy should move to HDL function measurement, that is, reverse cholesterol transport, instead of plasma levels. This paper thus continues to support the clinical relevance

of HDL as a major player in the modulation of the complex and multifactorial atherosclerotic process underlying CVD. Further clinical studies are therefore encouraged to also provide data on cholesterol efflux capacity values at baseline, after alcohol consumption or treatments, or the effect of cholesterol efflux on outcomes. As suggested by Ballantyne and Nambi (2024), “of all the HDL therapeutics, those that could reliably promote cholesterol efflux and reverse cholesterol transport offer the most potential and promise to be the answer to the question that most cardiovascular clinicians have been asked at some point in time: “is there not a treatment that can clear out the plaque from the artery?... perhaps A reconceptualization is needed that focuses on developing better assays for characterizing HDL functions that can be used in conjunction with genomics, metabolomics, proteomics, and transcriptomics to identify new targets and the correct population in which to test therapies to improve cholesterol efflux and the functionality of HDL.”

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Comments on this critique by the International Scientific Forum on Alcohol Research were provided by the following members:

Henk Hendriks, PhD, Netherlands

Creina Stockley, PhD, MBA, Independent consultant and Adjunct Senior Lecturer in the School of Agriculture, Food and Wine at the University of Adelaide, Australia

Erik Skovenborg, MD, specialized in family medicine, member of the Scandinavian Medical Alcohol Board, Aarhus, Denmark

Richard Harding, PhD, Formerly Head of Consumer Choice, Food Standards and Special Projects Division, Food Standards Agency, UK

R. Curtis Ellison, MD, Section of Preventive Medicine/Epidemiology, Boston University School of Medicine, Boston, MA, USA

To drink (moderately) or not to drink by Erik Skovenborg

“Throughout the history of humanity, alcoholic beverages have been widely used for their pleasing taste and their mood-altering effects. However, the use of alcohol has evoked strong opposition, because of the potential for abuse and the adverse effects on safety and health”. Dr. Charles S. Lieber, a distinguished scientist and pioneer in the field of alcohol effects on the liver, outlined this classic dilemma in his editorial “To drink (moderately) or not to drink” (1). “It could be argued that these adverse effects (alcoholic liver disease) were caused by relatively large amounts of alcohol, and that there was no evidence that moderate intake was detrimental to health. This position was encouraged in recent years by the observation between moderate alcohol intake a decreased incidence of coronary heart disease, with the implication that, when used in moderation, alcohol might in fact be beneficial.”

The evidence base present in 1984 was reviewed by Michael M. Marmot (2). “Of six case-control studies reviewed from England and the USA, all show an inverse association between CHD and alcohol consumption which persists after control for other risk factors. Longitudinal studies, in Japanese-Americans, white American men and women, British civil servants, Puerto Ricans, Yugoslavs and Australians, all show moderate drinkers to have a lower CHD risk than abstainers. Abstainers are likely to differ from moderate drinkers in a number of ways. To date it has not proved possible to show that any of these differences account for the higher CHD risk of abstainers.”

“These data are consistent with a protective effect of moderate alcohol consumption—but give little clue as to what ‘moderate’ means,” Marmot observed. “From other data, we know that in France, a country with a low rate of CHD, the mean yearly alcohol consumption of people aged 15 and over is 22.3 litres. This corresponds to the startling figure of 49 g alcohol per adult per day, or approximately six drinks per day.” Dr Genevieve Knupfer (who made influential contributions to ideas and methods relating to drinking survey research) suggested this definition of light drinking: “By ‘light drinking’, we mean something like “usually two drinks a day” (between 4 and 6 times a week), occasionally as much as four drinks in one day, but not more often than three times a month, and never more (3).

Alcohol and all-cause mortality

The association between alcohol intake and risk of all-cause mortality should be of crucial importance to anyone considering whether to drink (moderately) or not to drink. A recent systematic review and meta-analysis of 107 cohort studies involving more than 4.8 million participants by Zhao et al. (4). In models adjusting for potential confounding effects of sampling variation, former drinker bias, and other prespecified study-level quality criteria, the meta-analysis of all 107 included studies found no significantly reduced risk of all-cause mortality among occasional (>0 to <1.3 g of ethanol per day; relative risk [RR], 0.96; 95%CI, 0.86-1.06; P = .41) or low-volume drinkers (1.3-24.0 g per day; RR, 0.93; P = .07) compared with lifetime nondrinkers. There was a significantly increased risk of all-cause mortality among female drinkers who drank 25 or more grams per day and among male drinkers who drank 45 or more grams per day.

The results from this amount of evidence should not worry the moderate drinker and fall in line with the conclusion reached by Lieber back in 1984 (1): “Obviously, the “threshold” for toxicity may depend on the congener content of the beverage, body size, and various other factors (such as drinking pattern and genetic disposition); consequently, considerable variation in individual responses to alcohol exist. At present, one’s past capacity to keep consumption within socially and medically acceptable bounds is probably the most useful guide in deciding, for a given person, whether to drink (moderately) or not to drink.”

The risk starts from the first drop

While Lieber found “no compelling reason for the moderate drinker to change a lifestyle and eliminate a pleasurable and possibly beneficial habit”, WHO begs to differ (5). “We cannot talk about a so-called safe level of alcohol use. It doesn’t matter how much you drink – the risk to the drinker’s health starts from the first drop of any alcoholic beverage. The only thing that we can say for sure is that the more you drink, the more harmful it is – or, in other words, the less you drink, the safer it is,” explains Dr Carina Ferreira-Borges, Regional Advisor for Alcohol and Illicit Drugs in the WHO Regional Office for Europe. “To identify a “safe” level of alcohol consumption,

valid scientific evidence would need to demonstrate that at and below a certain level, there is no risk of illness or injury associated with alcohol consumption. The new WHO statement clarifies: currently available evidence cannot indicate the existence of a threshold at which the carcinogenic effects of alcohol “switch on” and start to manifest in the human body.” According to the experience of Lieber (1) “Arguments for or against control of intake have evoked powerful emotional responses, which tend to cloud the scientific assessment of whether to drink or not to drink.” The call for a scientifically proven safe level with zero risk is neither possible for intake of alcohol nor for other human activities like riding a bicycle or flying to Mallorca.

WHO Technical Report Series 841

The fog that clouds WHO’s scientific assessment of moderate alcohol intake is neither new nor evidence based. Actually the evidence was sufficient for a WHO Technical Committee on cardiovascular disease which reported in 1994, to conclude that the consumption of 30 g of alcohol a day is associated with lower cardiovascular risk and that the validity of the U-shaped relationship of mortality to alcohol consumption could no longer be doubted (6). However, a few months later (November 1, 1994), the World Health Organization said in a report that even moderate alcohol consumption is harmful to a person’s health, contradicting some medical theories that suggest moderate drinking can stave-off cardiovascular diseases (7). Hans Emblad, director of WHO’s Program of Substance Abuse, said that there is no minimum threshold below which alcohol can be consumed without any risk, and assertions that moderate alcohol consumption can be good for health, are wrong. Scientific studies show that only very low consumption, of the order of one drink every other day, is liable to reduce the risk of cardiovascular diseases compared with total abstinence. “There is no indication that higher consumption has a similar effect, whereas above two drinks per day this risk certainly increases,” Emblad said. WHO agrees that low levels of drinking have a protective effect on a very limited part of the population, mainly males above 35 years of age and post-menopausal women.

Conceptual and methodological challenges

“Teetotalers may differ from moderate drinkers in ways other than alcohol”, Lieber observed in his editorial (1). The J-shaped/U-shaped alcohol-coronary heart disease association has been examined intensely for conceptual and methodological challenges that may bring the validity of the J-shaped curve into question. Among the methodological flaws suggested are bias in self-reported alcohol consumption with misclassification of alcohol intake; confounding bias; alcohol consumption being linked to certain socio-economic and lifestyle characteristics known to affect cardio-vascular events; the sick quitters’ fallacy leading to a reverse causality bias; residual confounding bias, and the question whether drinking pattern and/or type of alcohol may influence the J-shaped association (8). An important epidemiologic principle is that weak associations can often be explained by one or more confounding variables.

1. Misclassification of abstainers. The “Sick quitters” fallacy leading to a reverse causality bias was proposed as explanation for the U-shaped curve by Shaper et al. in 1988 (9). In a report of 23 years’ observation of the 12,000 male British doctors (10), overall mortality during the past decade of the study (1991-2001) was significantly higher in the 239 recent ex-drinkers (men who had been current drinkers in 1978) than in the neverdrinkers or current drinkers, while the mortality of long-term ex-drinkers (men who were exdrinkers in 1978 as well) was similar to that of never-drinkers. Thus the effect of “reverse causality,” that is, a tendency for some drinkers who have developed a life-threatening disease to become ex-drinkers because of the disease, seems to wear off within a decade.
2. Confounding by SES (Socio Economic Status). Socioeconomic position is relevant to behaviors, exposures and susceptibilities that may influence health, such as education, social support, financial resources or the knowledge, awareness and determination required to actively follow a healthy lifestyle or consult a physician if needed.
3. Confounding by lifestyle factors. Many lifestyle risk factors for CHD have been identified, e.g. smoking, obesity, physical inactivity and poor diet quality, and the lifestyle factors may act as confounding factors in studies of alcohol & CHD.

4. Aspects of drinking patterns. Many cohort studies examining the effects of alcohol lack information on drinking patterns with regard to frequency of drinking (regular moderate versus binge drinking), beverage type (wine, beer or spirits) and drinking with or without meals.

May drinking (moderately) play a role as positive lifestyle factor?

With no randomized, controlled trials in view for the foreseeable future, we are left with evidence from high quality observational studies like the study by Li et al. (11) using data from the Nurses' Health Study (1980-2014; n=78 865) and the Health Professionals Follow-up Study (1986-2014, n=44 354).

- 1) The issue of the "Sick quitters" fallacy was addressed by assessing alcohol consumption every 4 years during up to 34 years of follow-up.
- 2) Confounding by SES was addressed by the study of 2 homogeneous cohorts of educated participants (nurses and male health professionals) with favourable socioeconomic positions.
- 3) Confounding by lifestyle factors was addressed by assessing diet every 4 years; physical activity levels were investigated and updated every 2 years; body weight and smoking habits were self-reported and updated every 2 years.
- 4) Biennial questionnaires were used to collect information on potential confounders such as age, ethnicity, multivitamin use, regular aspirin use, postmenopausal hormone use (NHS only), and the presence or absence of a family history of diabetes mellitus, cancer, or myocardial infarction.

Li et al. defined 5 low-risk lifestyle factors as never smoking, body mass index of 18.5 to 24.9 kg/m², ≥30 min/d of moderate to vigorous physical activity, moderate alcohol intake (5-15 g/d for women, 5-30 g/d for men), and a high diet quality score (upper 40%), and estimated hazard ratios for the association of total lifestyle score (0-5 scale) with mortality. The authors estimated that the life expectancy at age 50 years was 29.0 years (95% CI, 28.3-29.8) for women and 25.5 years (95% CI, 24.7-26.2) for men who adopted zero low-risk lifestyle factors. In contrast, for those who

adopted all 5 low-risk factors, they projected a life expectancy at age 50 years of 43.1 years (95% CI, 41.3-44.9) for women and 37.6 years (95% CI, 35.8-39.4) for men. The projected life expectancy at age 50 years was on average 14.0 years (95% CI, 11.8-16.2) longer among female Americans with 5 low-risk factors compared with those with zero low-risk factors; for men, the difference was 12.2 years (95% CI, 10.1-14.2).

Is zero alcohol optimal?

"We strongly believe that less is better. If you reach the point of zero, from the health point of view that is optimal", Hans Emblad told at the WHO news conference in 1994, giving birth to the "No safe level of alcohol use" WHO mantra (7). Emblad said that moderate consumption of wine "may reduce" coronary disease for a very few, but said that it offers no health benefits to most people. "There are other ways of reducing the risk of cardiovascular disease," he said. "Avoid smoking, engage in physical activity, eat less fats. Those already taking these precautions are unlikely to reduce their risk still further with light drinking." To answer the question if less is always better and zero alcohol is optimal, let us return to the study by Li et al. (11).

As expected, increased exercise, not smoking or a reduced amount of smoking if a smoker, a healthy dietary pattern, moderate alcohol intake, and optimal body weight were all associated with longer life expectancy. In a sensitivity analysis using a low-risk score without moderate alcohol intake, the projected life expectancy at age 50 years was on average only 11.4 years (95% CI, 9.5-13.3) longer among female Americans with 4 low-risk factors compared with those with zero low-risk factors; for men, the difference was 10.0 years (95% CI, 9.2-10.9) Accordingly the life expectancy for nurses taking all the precautions recommended by Hans Emblad increased from 11.4 years to 14.0 years by drinking moderately, while the life expectancy for male health professionals with 4 low-risk lifestyle factors increased from 10.0 years to 12.2 years when moderate drinking was added as the 5th lifestyle factor. For the US nurses and health professionals zero alcohol was associated with a reduced life expectancy.

Evidence based health policy or White Hat Bias?

A significant volume of consistent evidence suggests that a healthy lifestyle may indeed include a regular, light to moderate consumption of alcohol. To praise the beneficial effects of non-smoking, regular exercise, a normal weight and a Mediterranean-style diet while at the same time dismiss similar beneficial effects of a moderate, regular alcohol intake observed in exactly the same type of studies is hardly an example of rational reasoning by dispassionate scientists but rather a result of “White Hat Bias” -defined as bias leading to distortion of research-based information in the service of what may be perceived as “righteous ends” (12).

The question of whether moderate alcohol consumption may be considered a healthy lifestyle behavior that is inversely associated with risk for myocardial infarction (MI) / coronary heart disease / coronary heart disease mortality / all-cause mortality in individuals on a par with normal weight, regular exercise, a healthy diet and no smoking has so far (from 1973 to 2024) been examined in 69 observational cohort studies. The studies are listed below according to publication year. There is little heterogeneity between the studies and the large majority of results found moderate alcohol intake associated with decreased all-cause mortality and longer expected survival time including the segment of study participants with the highest score of healthy lifestyle habits.

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Erik Skovenborg is a Danish physician with a special interest in the health benefits of moderate alcohol consumption. He is a member of the Social, Scientific and Medical Council of Alcohol in Moderation and co-founder of the Scandinavian Medical Alcohol Board (SMAB).

Genetic predisposition, modifiable lifestyles, and their joint effects on human lifespan

A longitudinal cohort study investigated the associations across genetic and lifestyle factors with lifespan. Using UK Biobank data, 353 742 adults of European ancestry, were recruited from 2006 to 2010 and were followed up until 2021. Participants were grouped into three genetically determined lifespan categories including long (20.1%), intermediate (60.1%), and short (19.8%), and into three lifestyle score categories including favourable (23.1%), intermediate (55.6%), and unfavourable (21.3%).

With a median follow-up of 12.86 years, 24,239 deaths were identified. The hazard ratio (HR) of death for individuals with a genetic predisposition to a short lifespan was 1.21 (95% CI 1.16 to 1.26) compared to those with a genetic predisposition to a long lifespan. The HR of death for individuals in the unfavourable lifestyle category was 1.78 (95% CI 1.71 to 1.85), compared with those in the favourable lifestyle category. Participants with a genetic predisposition to a short lifespan and an unfavourable lifestyle had 2.04 times (95% CI 1.87 to 2.22) higher rates of death compared

with those with a genetic predisposition to a long lifespan and a favourable lifestyle. No multiplicative interaction was detected between the polygenic risk score of lifespan and the weighted healthy lifestyle score. The optimal combination of healthy lifestyles, including never smoking, regular physical activity, adequate sleep duration, and a healthy diet, was derived to decrease risk of premature death (death before 75 years).

Genetic and lifestyle factors were independently associated with lifespan. Adherence to healthy lifestyles could largely attenuate the genetic risk of a shorter lifespan or premature death. The optimal combination of healthy lifestyles could convey better benefits for a longer lifespan, regardless of genetic background, the research concludes.

Source: [Bian Z, Wang L, Fan R, et al. Genetic predisposition, modifiable lifestyles, and their joint effects on human lifespan: evidence from multiple cohort studies. *BMJ Evidence-Based Medicine* Published Online First: 29 April 2024. Doi. org/10.1136/bmjebm-2023-112583](https://doi.org/10.1136/bmjebm-2023-112583)

Adolescent alcohol use is associated with differences in the diversity and composition of the oral microbiome

Adolescence is a sensitive stage of oral microbial development that often coincides with the initiation and escalation of alcohol use. Thus, adolescents may be particularly susceptible to alcohol-induced alterations in the oral microbiome, though minimal research has been done in this area. Understanding the connection between the oral microbiome and alcohol use during adolescence is important to understand fully the biological consequences of alcohol use to mitigate potential adverse outcomes.

Saliva samples were collected from adolescents aged 17-19 who used alcohol heavily ($n = 21$, 52.4% female) and those who did not use alcohol or any other substances ($n = 18$, 44.4% female). 16S rRNA sequencing was used to examine differences in microbial diversity and composition between the groups.

For alpha diversity, evenness was significantly lower in the drinking group than the control group as indicated by Pielou's evenness, Shannon, and Simpson indices. There were no statistically significant findings for beta diversity. Differential abundance analyses revealed higher abundances of *Rothia* and *Corynebacterium* in

the alcohol-using group. These genera are known for their high capacity to convert alcohol into acetaldehyde, a toxic metabolite reported to play a role in the neurobiological effects of alcohol. An unclassified *Clostridia* UCG-014, *Streptobacillus*, *Comamonas*, unclassified *Lachnospiraceae*, and *Parvimonas* were also identified as significantly different between groups when using only one of the normalization techniques.

This is the first study designed specifically to compare the oral microbiome of adolescents who use alcohol with that of control participants. The findings reveal distinct alcohol-related differences in microbial composition and taxon abundance, emphasizing the importance of understanding the impact on the oral microbiome of alcohol use during adolescence. Because the oral microbiome is malleable, this study provides foundational work for future prevention and intervention studies, the researchers say.

Source: Browning BD, Kirkland AE, Green R, Liu H, Glover JS, Ticer TD, Engevik MA, Alekseyenko AV, Ferguson PL, Tomko RL, Squeglia LM. Adolescent alcohol use is associated with differences in the diversity and composition of the oral microbiome. *Alcohol Clin Exp Res* (Hoboken). 2024 Apr 17. Doi. org/10.1111/acer.15331.

Healthy lifestyle and cancer survival: A multinational cohort study

Lifestyle factors after a cancer diagnosis could influence the survival of cancer survivors. In a study published in the *International Journal of Cancer*, researchers evaluated the associations of a combination of healthy lifestyle factors with overall cancer survival, leveraging data from four prospective cohorts of cancer survivors (National Health and Nutrition Examination Survey [NHANES], National Health Interview Survey [NHIS], UK Biobank [UKB] and Kailuan study) in three countries.

A healthy lifestyle score (HLS) was defined based on five common lifestyle factors (smoking, alcohol drinking, diet, physical activity and body mass index) that related to cancer survival. Researchers estimated the hazard ratios (HRs) for the associations of individual lifestyle factors and HLS with all-cause and cancer mortality among cancer survivors.

During the follow-up period of 37,095 cancer survivors, 8927 all-cause mortality events were accrued in four cohorts and 4449 cancer death events were documented in the UK and US

cohorts. Never smoking (adjusted HR = 0.77, 95% CI: 0.69-0.86), light alcohol consumption (adjusted HR = 0.86, 95% CI: 0.82-0.90), adequate physical activity (adjusted HR = 0.90, 95% CI: 0.85-0.94), a healthy diet (adjusted HR = 0.69, 95% CI: 0.61-0.78) and optimal BMI (adjusted HR = 0.89, 95% CI: 0.85-0.93) were significantly associated with a lower risk of all-cause mortality. In the joint analyses of HLS, the HR of all-cause and cancer mortality for cancer survivors with a favourable HLS (4 and 5 healthy lifestyle factors) were 0.55 (95% CI 0.42-0.64) and 0.57 (95% CI 0.44-0.72), respectively.

This multicohort study of cancer survivors from the United States, the United Kingdom and China found that greater adherence to a healthy lifestyle might be beneficial in improving cancer prognosis.

Source: Bian Z, Zhang R, Yuan S, Fan R, Wang L, Larsson SC, Theodoratou E, Zhu Y, Wu S, Ding Y, Li X. Healthy lifestyle and cancer survival: A multinational cohort study. *Int J Cancer*. 2024 May 15;154(10):1709-1718. doi.org/10.1002/ijc.34846.

Association of combined healthy lifestyle with risk of adverse outcomes in patients with prediabetes

Prediabetes and lifestyle factors have been associated with the risks of multiple adverse outcomes, but the effect of a healthy lifestyle on prediabetes-related complications remains unknown. Researchers investigated whether the risks of multiple adverse outcomes including incident type 2 diabetes mellitus (T2DM), cardiovascular disease (CVD), and chronic kidney disease (CKD) among individuals with prediabetes can be offset by a broad combination of healthy lifestyle factors.

This prospective study used data from the UK Biobank cohort. An overall lifestyle score ranging from 0 to 6 was created with 1 point for each of the 6 healthy lifestyle factors: no current smoking, moderate alcohol consumption, regular physical activity, healthy diet, no overweight or obese, and adequate sleep duration. T2DM, CVD, and CKD were ascertained during a median follow-up of 14 years.

202,993 participants without T2DM, CVD, and CKD were included at baseline (mean age 55.5 years [SD 8.1]; 54.7% were women). Among these participants, 6,745, 16,961, and 6,260 participants eventually developed T2DM, CVD, and CKD, respectively. Compared with the participants

with normoglycaemia, those with prediabetes showed a higher risk of these adverse outcomes. In addition, those prediabetic participants with a lifestyle score of 0-1 had a significantly higher risk of T2DM (hazard ratio [HR] 16.73, 95% CI 14.24, 19.65), CVD (HR 1.96, 95% CI 1.74, 2.21), and CKD (HR 1.92, 95% CI 1.58, 2.34) compared with those with no prediabetes and a score of 5-6. Moreover, among the participants with prediabetes, the HRs for T2DM, CVD, and CKD comparing a lifestyle score of 5-6 versus 0-1 decreased to 0.43 (95% CI 0.36, 0.51), 0.52 (95% CI 0.44, 0.62), and 0.60 (95% CI 0.46, 0.79), respectively.

Combined healthy lifestyle factors were associated with a significantly lower risk of multiple adverse outcomes, including T2DM, CVD, and CKD. This indicates that prioritising multifactorial approaches to behavioural lifestyle modification is crucial for preventing and postponing the development of complications related to prediabetes.

Source: Xu X, Li J, Yu Y, Tan X, Xu F, Wang B, Wang N, Lu Y. Association of combined healthy lifestyle with risk of adverse outcomes in patients with prediabetes. *Diabetes Metab Res Rev.* 2024 May;40(4):e3795. [Doi.org/10.1002/dmrr.3795](https://doi.org/10.1002/dmrr.3795).

Haemorrhagic strokes attributable to chronic alcohol consumption and heavy episodic drinking in France

Researchers in Bordeaux, France estimated the number of cases and deaths related to haemorrhagic stroke (HS) attributable to a chronic alcohol consumption and to heavy episodic drinking (HED) in France.

A population-attributable fraction (PAF) estimation approach was used. Relative risks for haemorrhagic stroke with alcohol consumption were extracted from the INTERSTROKE study. Levels of alcohol consumption in the French population were collected from the 2017 Health Barometer. Data on HS morbidity and mortality were extracted from the French National Health Data System (SNDS).

Researchers estimated that 7.2% (n = 2,100) and 6.6% (n = 1,900) of cases with haemorrhagic stroke were attributable to chronic alcohol consumption and HED, respectively. PAFs were higher in men than in women with 11.5% vs 2.6% for a chronic consumption and 10.7% vs 2.1%

for HED, respectively. It was estimated that 7.0% of haemorrhagic stroke deaths (n = 1,100) were attributable to chronic alcohol consumption and 5.1% attributable to HED (n = 800). Finally, 16.3% of patients with haemorrhagic stroke (n = 4,700) and 14.1% of haemorrhagic stroke deaths (n = 2,300) were attributable to overall chronic alcohol consumption or to monthly HED.

The researchers say that these results are a reminder of the importance of alcohol consumption in the occurrence of haemorrhagic stroke and the importance of implementing primary and secondary prevention measures, particularly among young people, where HED is most common.

Source: Dufour L, Grave C, Bonaldi C, Joly P, Andler R, Quatremere G, Nguyen-Thanh V, Olié V, Gabet A. Hemorrhagic Strokes Attributable to Chronic Alcohol Consumption and Heavy Episodic Drinking in France. *Neurology.* 2024 Apr 23;102(8):e209228. [Doi.org/10.1212/WNL.0000000000209228](https://doi.org/10.1212/WNL.0000000000209228).

Association between alcohol consumption and peripheral artery disease

The association between alcohol consumption and risk of peripheral artery disease (PAD) is inconclusive. Researchers examined the association between alcohol consumption and PAD risk in two de novo cohort studies and a meta-analysis of observational studies.

A systematic review was conducted to identify studies on alcohol consumption in relation to PAD risk. Researchers also used data from two cohorts of 70,116 Swedish and 405,406 British adults and performed a meta-analysis of results from previously published studies and current cohort studies. There was a U-shaped association between alcohol consumption and incident PAD risk in the Swedish and British cohorts. The meta-analysis of results of these two cohorts and previously published studies found that compared with non- or never-drinkers, the relative risk of PAD was 0.83 (95% confidence interval [CI] 0.77-

0.89), 0.81 (95% CI 0.74-0.90), and 0.94 (95% CI 0.83-1.07) for light, moderate, and high-to-heavy alcohol drinkers, respectively. The nonlinear meta-analysis revealed a possibly U-shaped association between alcohol consumption and PAD risk. The risk of PAD was observed to be the lowest for 2 drinks/week and to be pronounced for ≥ 10 drinks/week.

Alcohol intake ≤ 2 drinks/week was associated with a reduced risk of PAD and the risk of PAD became pronounced with intake ≥ 10 drinks/week, the study found.

Source: Yuan S, Wu J, Chen J, Sun Y, Burgess S, Li X, Åkesson A, Larsson SC. Association between alcohol consumption and peripheral artery disease: Two de novo prospective cohorts and a systematic review with meta-analysis. *Eur J Prev Cardiol.* 2024 Apr 16:zwae142. doi.org/10.1093/eurjpc/zwae142.

Role of diet in the risks of esophageal adenocarcinoma and squamous cell carcinoma

An updated umbrella review evaluated the evidence regarding the associations between dietary factors and the risks of esophageal squamous cell carcinoma (ESCC) and esophageal adenocarcinoma (EAC).

The PubMed, Embase, Cochrane Library, and Web of Science databases were searched to identify relevant studies. For each association, the number of cases, random effects pooled effect size, 95% confidence intervals (CIs), heterogeneity, 95% prediction interval (PrI), small-study effect, and excess significance bias were recalculated to determine the evidence level.

33 meta-analyses describing 58 dietary factors associated with ESCC and 29 meta-analyses describing 38 dietary factors associated with EAC were identified. There was convincing evidence regarding the association of 2 dietary factors (areca nut and high alcohol) with the risk of ESCC. There was highly suggestive evidence regarding the association of only 1 dietary factor (healthy pattern) with the risk of ESCC. There was suggestive evidence regarding the association of 11 dietary factors with the risk of ESCC, including fruit, citrus fruit, vegetables, pickled vegetables,

maté tea, moderate alcohol, hot beverages and foods, hot tea, salt, folate, and vitamin B6. There was convincing evidence regarding the association of one dietary factor (vitamin B6) with the risk of EAC. There was suggestive evidence regarding the association of 4 dietary factors with the risk of EAC, including processed meat, dietary fibre, carbohydrate, and vitamin B12. The convincing evidence regarding the associations between dietary factors and the risks of ESCC and EAC remained robust in sensitivity analyses.

The review highlights convincing evidence regarding the associations of areca nut and high alcohol with a higher risk of ESCC. Additionally, an association between vitamin B6 and a decreased risk of EAC was observed. Further research is needed to examine the dietary factors with weak evidence regarding their associations with ESCC and EAC.

Source: Zhang, Xiaorui & Zheng, Xite & Gao, Ran & Wang, Yijie & Wei, Tong & Zang, Zhaoping & Zhu, Lingyan & Li, Quanmei & Zhang, Yijun & Liu, Fen. (2024). Role of diet in the risks of esophageal adenocarcinoma and squamous cell carcinoma: an updated umbrella review. *European Journal of Nutrition.* 1-12. doi.org/10.1007/s00394-024-03393-z.

Alcohol consumption may be a risk factor for cerebrovascular stenosis in acute ischemic stroke and transient ischemic attack

Atherosclerosis are well established risk factors for ischemic stroke, however the association between alcohol consumption and atherosclerosis is controversial. A study explored the potential correlation between alcohol consumption and cerebral stenosis in patients with acute ischemic stroke and transient ischemic attack (TIA).

Nine hundred and eighty-eight patients with first acute ischemic stroke attack or TIA were recruited retrospectively. Alcohol consumption was classified into five consumption categories (non-drinkers, occasional drinkers, < 140 g per week [mild drinkers], 140-279 g per week [moderate drinkers], ≥ 280 g per week [heavy drinkers]). Computed tomography angiography (CTA) and digital subtraction angiography (DSA) were utilized to assess the carotid and cerebral artery in all patients. Five-step scale for degree of stenosis was applied: normal (0, 0 points), mild (< 50%, 1 point), moderate (50-69%, 2 points), severe (70-99%, 3 points), and occlusion (100%, 4 points).

The carotid and cerebral artery stenosis scores were positively correlated with moderate alcohol consumption (140-279 g per week, i.e. above most low risk guidelines). Compared with nondrinkers, 'moderate alcohol consumption' had significant increasing risk of moderate carotid and cerebral artery stenosis (OR = 4.28, 95% CI: 1.47-12.49) and severe stenosis (OR = 4.24, 95% CI: 1.55-11.64) and occlusion (OR = 3.87, 95% CI: 1.65-9.06. Compared with nondrinkers, heavy alcohol consumption patients had significant higher risk of carotid and cerebral artery occlusion (OR = 2.71, 95% CI: 1.36-5.41).

Higher alcohol consumption may associate with higher risk and more severity of carotid and cerebrovascular stenosis, the authors conclude.

Source: Liu, Y., Gu, S., Gou, M. et al. Alcohol consumption may be a risk factor for cerebrovascular stenosis in acute ischemic stroke and transient ischemic attack. *BMC Neurol* 24, 135 (2024). doi.org/10.1186/s12883-024-03627-x

Genetic risk, health-associated lifestyle, and risk of early-onset total cancer and breast cancer

Early-onset cancer (diagnosed under 50 years of age) is associated with aggressive disease characteristics and its rising incidence is a global concern. The association between healthy lifestyle and early-onset cancer and whether it varies by common genetic variants is unknown.

A study examined the associations between genetic risk, lifestyle, and risk of early-onset cancers. A prospective cohort of 66,308 white British participants who were under age 50 and free of cancer at baseline in the UK Biobank were analysed. Sex-specific composite total cancer polygenic risk scores (PRSs), a breast cancer-specific PRS, and sex-specific health-associated lifestyle scores (HLSs, which summarize smoking status, body mass index [males only], physical activity, alcohol consumption, and diet) were examined.

A total of 1,247 incident invasive early-onset cancer cases (female: 820, male: 427, breast: 386) were documented. In multivariable-adjusted analyses with 2-year latency, higher genetic risk (highest vs. lowest tertile of PRS) was associated

with significantly increased risks of early-onset total cancer in females (HR, 95% CI: 1.85, 1.50-2.29) and males (1.94, 1.45-2.59) as well as early-onset breast cancer in females (3.06, 2.20-4.25). An unfavourable lifestyle (highest vs. lowest category of HLS) was associated with higher risk of total cancer and breast cancer in females across genetic risk categories; the association with total cancer was stronger in the highest genetic risk category than the lowest: HRs in females and men were 1.85 (1.02, 3.36), 3.27 (0.78, 13.72) in the highest genetic risk category and 1.15 (0.44, 2.98), 1.16 (0.39, 3.40) in the lowest.

Both genetic and lifestyle factors were independently associated with early-onset total and breast cancer risk. Compared to those with low genetic risk, individuals with a high genetic risk may benefit more from adopting a healthy lifestyle in preventing early-onset cancer.

Source: Zhang Y, Lindström S, Kraft P, Liu Y. Genetic Risk, Health-Associated Lifestyle, and Risk of Early-onset Total Cancer and Breast Cancer. *medRxiv*. 2024 Apr 6:2024.04.04.24305361. doi.org/10.1101/2024.04.04.24305361.

Alcohol-induced blackouts may be linked to how a person drinks, not just how much

Certain drinking behaviours beyond just the quantity of alcohol consumed may predict the likelihood a person will experience an alcohol-induced blackout, a condition where someone is conscious and engaging with their surroundings but will be unable to remember some or any of what occurred. Alcohol-induced blackouts (AIBs) are common in college students and individuals with AIBs are more likely to experience acute and chronic alcohol-related consequences.

A study published in *Alcohol, Clinical and Experimental Research* analysed data from 79 college sophomores and juniors who typically drank four or more drinks on a weekend day and had experienced at least one alcohol-induced blackout during the past semester. The students wore wristwatch-like devices with transdermal alcohol concentration sensors, which measured intoxication levels through the skin on 12 weekend days. The students also completed daily diaries each morning to assess their memories of the prior day.

Over the 12-day period, the sensors detected a total of 486 days of alcohol use, and students together reported 147 alcohol-induced blackouts. Seventy percent of the students experienced at least one alcohol-induced blackout, with 80 percent of female students and 70 percent of male students reporting experiencing a blackout. The students who reported at least one blackout had, on average, 2.2 alcohol-induced blackouts during the 12 days.

The researchers found that the speed with which college students become intoxicated, how long their intoxication levels were increasing, and their peak intoxication were each associated with experiencing an alcohol-induced blackout. They say that considering how an individual drinks (assessed using TAC biomarkers), rather than quantity alone, is important for assessing risk and has implications for efforts to reduce risk.

Source: Veronica L. Richards et al, *Transdermal alcohol concentration features predict alcohol-induced blackouts in college students*, *Alcohol, Clinical and Experimental Research* (2024). doi.org/10.1111/acer.15290

Long-term effects of alcohol consumption on anxiety in adults

Despite the high prevalence and comorbidity of alcohol consumption and anxiety, it is unclear whether alcohol consumption influences long-term anxiety. A study aimed to review the literature on the long-term longitudinal effects of alcohol consumption on anxiety in adults.

EMBASE, PsychInfo, Medline, and Web of Science databases were systematically searched from inception to April 12th, 2024. Articles analysing the relationship between alcohol consumption and anxiety symptoms or anxiety disorder diagnosis at least three-months later in adults were eligible. From 884 records, eight studies of mixed quality met inclusion criteria. One study using a sample representative of the USA population found low volume consumption was associated with lower long-term anxiety. All other studies used a convenience sample or a specific medical population sample. The significance and

direction of the relationship between alcohol consumption and long-term anxiety in these studies varied, likely due to differences in alcohol consumption thresholds used and populations studied.

The researchers conclude that a paucity of research on the longitudinal effects of alcohol consumption on anxiety was found, highlighting a significant gap in the research literature. Furthermore, existing research, primarily focussed on clinical subpopulations, has yielded mixed results. Further research is needed to explore the longitudinal dose dependent impact of alcohol consumption on anxiety using samples representative of national populations.

Source: D'Aquino S, Kumar A, Riordan B, Callinan S. *Long-term effects of alcohol consumption on anxiety in adults: A systematic review*. *Addict Behav.* 2024 Apr 28;155:108047. doi.org/10.1016/j.addbeh.2024.108047.

Joint association of biological aging and lifestyle with risks of cancer incidence and mortality

Aging is a risk factor for cancer incidence and mortality. Biological aging can reflect the aging degree of the body better than chronological age and can be aggravated by unhealthy lifestyle factors. A team of researchers assessed the joint effect of biological aging and lifestyle with risks of cancer incidence and mortality.

Their study included a total of 281,889 participants aged 37 to 73 from the UK Biobank database. Biological age was derived from chronological age and 9 clinical blood indicators, and lifestyle score was constructed by body mass index, smoking status, alcohol consumption, physical activity, and diet. The independent and joint association of biological aging and lifestyle with risks of cancer incidence and mortality, respectively were analysed.

Over a median follow-up period of 12.3 years, older biological age was associated with increased risks of overall cancer, digestive system cancers, lung,

breast and renal cancers incidence and mortality (HRs: 1.12-2.25). In the joint analysis of biological aging and lifestyle with risks of cancer incidence and mortality, compared with unhealthy lifestyle and younger biological age, individuals with healthy lifestyle and older biological age had decreased risks of incidence (8% ~ 60%) and mortality (20% ~ 63%) for overall, esophageal, colorectal, pancreatic and lung cancers.

Biological aging may be an important risk factor for cancer morbidity and mortality. A healthier lifestyle is more likely to mitigate the adverse effects of biological aging on overall cancer and some site-specific cancers.

Source: Wang X, Peng Y, Liu F, Wang P, Si C, Gong J, Zhou H, Zhang M, Song F. Joint association of biological aging and lifestyle with risks of cancer incidence and mortality: A cohort study in the UK Biobank. *Prev Med.* 2024 May;182:107928. doi.org/10.1016/j.ypmed.2024.107928.

Adherence to the Mediterranean diet and 20-year incidence of hypertension

Dietary habits are a significant predictor of hypertension (HTN). A team of researchers evaluated the long-term association between adherence to the Mediterranean diet and hypertension incidence.

This was a prospective study among 1415 non-hypertensive adults (44% men, age: 41 ± 13 years) followed up for 20 years. Anthropometric, lifestyle, and clinical parameters were evaluated at baseline. Adherence to the Mediterranean diet was evaluated both at baseline and 10 years through the MedDietScore (range: 0-55, higher values indicate greater adherence).

At the 20-year follow-up, 314 new HTN cases were recorded. HTN incidence was 35.5%, 22.5%, and 8.7% in the lowest, middle, and upper tertile of baseline MedDietScore, respectively. For each 1-point increase in baseline MedDietScore, the 20-year hypertension risk decreased by 7% [relative risk (RR): 0.925, 95% confidence interval (CI): 0.906, 0.943], and this effect remained significant after adjustment for age, sex, and baseline

lifestyle and clinical confounders, i.e., body mass index, physical activity, smoking, systolic and diastolic blood pressure, family history of HTN, and presence of hypercholesterolemia and diabetes mellitus (RR: 0.973, 95%CI: 0.949, 0.997). In a similar multiadjusted model, compared to subjects who were consistently away from the Mediterranean diet (in the lowest MedDietScore tertile both at baseline and 10 years), only those who were consistently close (in the middle and upper MedDietScore tertiles both at baseline and 10 years) exhibited a 47% lower 20-year HTN risk. A high adherence to the Mediterranean diet, particularly when longitudinally sustained, is associated with lower incidence of hypertension, the study concludes.

Source: Georgoulis M, Damigou E, Derdelakou E, Kosti RI, Chrysohoou C, Barkas F, Kravvariti E, Tsioufis C, Pitsavos C, Liberopoulos E, Sfikakis PP, Panagiotakos DB. Adherence to the Mediterranean diet and 20-year incidence of hypertension: the ATTICA prospective epidemiological study (2002-2022). *Eur J Clin Nutr.* 2024 Apr 11. Doi.org/10.1038/s41430-024-01440-w.

Association of a Mediterranean lifestyle with all-cause and cause-specific mortality

A study examined the association between the Mediterranean lifestyle and all-cause, cancer, and cardiovascular disease (CVD) mortality in a British population.

Participants in the study were 110,799 individuals aged 40 to 75 years from the UK Biobank cohort, who were free of CVD or cancer between 2009 and 2012 who were followed-up to 2021. The Mediterranean lifestyle was assessed at baseline through the Mediterranean Lifestyle (MEDLIFE) index, derived from the lifestyle questionnaire and diet assessments and comprising three blocks: (1) "Mediterranean food consumption," (2) "Mediterranean dietary habits," and (3) "physical activity, rest, social habits, and conviviality." Death information was retrieved from death register records.

During a median 9.4-year follow-up, 4247 total deaths, 2401 cancer deaths, and 731 CVD deaths were identified. Compared with the first quartile of the MEDLIFE index, increasing quartiles had

HRs of 0.89 (95% CI, 0.81 to 0.97), 0.81 (95% CI, 0.74 to 0.89), and 0.71 (95% CI, 0.65 to 0.78). For cancer mortality, the quartiles had HRs of 0.90 (95% CI, 0.80 to 1.01), 0.83 (95% CI, 0.74 to 0.93), and 0.72 (95% CI, 0.64 to 0.82). All MEDLIFE index blocks were independently associated with lower risk of all-cause and cancer death, and block 3 was associated with lower CVD mortality.

Higher adherence to the Mediterranean lifestyle was associated with lower all-cause and cancer mortality in British middle-aged and older adults in a dose-response manner. Adopting a Mediterranean lifestyle adapted to the local characteristics of non-Mediterranean populations may be possible and part of a healthy lifestyle.

Source: Maroto-Rodriguez J, Delgado-Velandia M, Ortolá R, Perez-Cornago A, Kales SN, Rodríguez-Artalejo F, Sotos-Prieto M. Association of a Mediterranean Lifestyle With All-Cause and Cause-Specific Mortality: A Prospective Study from the UK Biobank. *Mayo Clin Proc.* 2024 Apr;99(4):551-563. doi.org/10.1016/j.mayocp.2023.05.031.

Mediterranean diet and a health behaviour index in relation to cardiovascular biomarkers

Although lifestyle factors have been repeatedly examined for their role on cardiovascular diseases, their composite effect has not been frequently explored. Academics from the University of Athens investigated the relation of dietary patterns (DPs) and a health behaviour index (HBI) with cardiovascular biomarkers.

A cross-sectional analysis with data from 3,461 US residents, participants in the Health and Retirement Study (HRS), was performed. Nutritional data were obtained with a food frequency questionnaire, while adherence to Mediterranean Diet (MD) was determined by the Mediterranean Diet Score. A posteriori dietary patterns were estimated using principal component analysis and the health behaviour index was constructed combining adherence to MD, smoking status, physical activity levels, alcohol consumption and body mass index. The relation between dietary patterns or health behaviour index and levels of C-reactive protein (CRP), glycosylated hemoglobin (HbA1C), cystatin

C (Cys C), total cholesterol (TC), high density lipoprotein (HDL) and TC:HDL in blood were examined.

The study found that "healthy" dietary patterns and the MD had a significant negative association with CRP and Cys C, while the "Western-type" dietary patterns had a significant positive association with TC:HDL ratio, CRP and Cys C. Moreover, the health behaviour index was positively associated with HDL and negatively associated with TC:HDL ratio, CRP and Cys C.

Adherence to MD and to a healthy dietary pattern was negatively associated with biomarkers of inflammation, while the health behaviour index was associated with a better cardiometabolic profile, assessed with blood biomarkers.

Source: Papassotiriou I, Riza E, Benetou V, Orfanos P. Mediterranean diet and a health behavior index in relation to cardiovascular biomarkers: Data from the Health and Retirement Study. *Nutr Metab Cardiovasc Dis.* 2024 Apr;34(4):925-934. Doi. org/10.1016/j.numecd.2024.01.004.

Long-term impact of Mediterranean diet on cardiovascular disease prevention

Numerous observational studies have explored the impact of the MedDiet on CVD prevention, addressing both primary and secondary prevention. However, a substantial portion of the primary evidence comes from specific Randomized Controlled Trials (RCTs), such as the Lyon Diet Heart Study, the Indo-Mediterranean Diet Heart Study, the PREDIMED Study, and the recent CORDIOPREV Study. To provide a comprehensive assessment of the long-term clinical effects, a team of academics conducted a meta-analysis, systematically synthesizing findings from RCTs to better understand the preventive impact of MedDiet on cardiovascular health.

A search was conducted to identify RCTs exploring the efficacy of MedDiet on CVD prevention from inception until January 2024, utilizing databases such as MEDLINE (via PubMed), Google Scholar, the Cochrane Library, ClinicalTrials.gov, and the ScienceDirect portal. The analysis incorporated four RCTs involving a total of 10,054 participants, with an average age of 57 years and a mean follow-up duration ranging from 2 to 7 years.

In pooled analysis, the composite endpoint of major adverse cardiovascular events (MACE) demonstrated a statistically significant reduction in incidence in participants on MedDiet versus control diet with an OR of 0.52 (95 % CI: 0.32 to

0.84). Additionally, there was a notable decrease in the incidence of cardiovascular events, both myocardial infarction (MI) and stroke in the MedDiet group, with an OR of 0.62 (95 % CI: 0.41 to 0.92) and 0.63 (95 % CI: 0.48 to 0.87), respectively. No statistically significant change in the rate of revascularization was observed, however, with an OR of 0.74 (95 % CI: 0.30 to 1.27). Concerning mortality rates, MedDiet significantly reduced the risk of cardiovascular death with an OR of 0.54 (95 % CI: 0.31 to 0.94), while no significant change was noted in all-cause mortality, with an OR of 0.77 (95 % CI: 0.51 to 1.15).

MedDiet serves as an effective intervention for both primary and secondary prevention of CVD, demonstrating a substantial and long-term impact in reducing the incidence of MACE, MI, stroke, and cardiovascular-related mortality while showing no observed effect on all-cause mortality. Nevertheless, the authors state, it is essential to acknowledge the current limitations in available clinical trial evidence, emphasizing the need for additional trials to substantiate and strengthen these findings.

Source: Sebastian SA, Padda I, Johal G. Long-term impact of Mediterranean diet on cardiovascular disease prevention: A systematic review and meta-analysis of randomized controlled trials. *Curr Probl Cardiol.* 2024 May;49(5):102509. doi.org/10.1016/j.cpcardiol.2024.102509.

The relationship between alcohol consumption and amygdala volume in a community-based sample

Decreased amygdala volume associated with alcohol use disorder may be related to an increased risk of addiction and relapse. However, the relationship between amygdala volume and a broad range of alcohol consumption is largely unexplored. A cross-sectional analysis investigated the relationship between amygdala volume and self-reported alcohol consumption in participants of the Dallas Heart Study, a community-based study of Dallas County, Texas residents.

Brain imaging and survey data from 2023 participants were obtained, and multiple linear regressions were performed with the average amygdala volume as the dependent variable and drinking status, drinking risk, drinks per week, and binge drinking as independent variables. Drinking risk was categorized such that low-risk constituted ≤ 14 drinks per week in men and ≤ 7

drinks per week in women, while > 14 drinks per week in men and > 7 drinks per week in women constituted high-risk. Age, sex, intracranial volume, body mass index, education, and Quick Inventory of Depressive Symptomatology-Self Report score were included in all models as covariates. No statistically significant associations were observed between self-reported alcohol consumption and amygdala volume.

The study suggests non-significant relationships between self-reported alcohol consumption and amygdala volume when controlling for relevant demographic factors in a large, community-based sample.

Source: Pho, C., Yu, F.F., Palka, J.M. et al. The relationship between alcohol consumption and amygdala volume in a community-based sample. *Brain Imaging and Behavior* (2024). doi.org/10.1007/s11682-024-00879-6.

Dose–response effect of prenatal alcohol exposure on perinatal outcomes

A study by University of New Mexico researchers examined the effects of mild–moderate prenatal alcohol exposure (PAE) and episodic binge drinking on perinatal outcomes.

The data were obtained from three prospective cohorts with a combined sample of 281 participants: 125 with PAE and 156 without PAE. Alcohol-related measures included the Alcohol Use Disorders Identification Test, timeline follow-back questionnaires (covering the periconceptional period, mid-gestation, and late gestation), and biomarkers. Absolute alcohol per day (AAD) and per drinking day (AADD), number of binge episodes, and maximum number of drinks in a 24-h period were estimated. Perinatal outcomes included gestational age and anthropometric measures

Among women with PAE, average alcohol consumption across the periconceptional period and pregnancy was 0.37 oz \pm 0.74 AA/day (~5 drinks/week). After adjusting for tobacco co-exposure and sociodemographic characteristics, significant associations between all alcohol measures and gestational age at delivery were observed, including cumulative measures of Absolute alcohol per day (β = -0.58; 95% CI:

-0.98; -0.17) and absolute alcohol per drinking day (β = -0.58; 95% CI: -0.90; -0.26) during pregnancy and the periconceptional period. A significant association between the maximum number of drinks in a 24-h period and birth length percentile (β = -0.70; 95% CI: -1.36; -0.04) was observed in the final model. PAE was associated with lower birth weight percentile in univariate analyses only.

The results of this study, published in *Alcohol Clinical & Experimental Research*, demonstrate a negative association between mild–moderate PAE and episodic binge drinking with gestational age at delivery and birth length percentile after controlling for other factors. Robust negative effects of PAE, including in the periconceptional period before pregnancy recognition, on duration of gestation highlight the need for primary prevention efforts aimed at PAE in persons of reproductive age.

Source: Bakhireva, L.N., Ma, X., Wiesel, A., Wohrer, F.E., DiDomenico, J., Jacobson, S.W. et al. (2024) Dose–response effect of prenatal alcohol exposure on perinatal outcomes. *Alcohol: Clinical and Experimental Research*, 48, 703–714. doi.org/10.1111/acer.15284

Impact of smoking and alcohol consumption on early-onset gastric cancer development in young Koreans

Although smoking and alcohol consumption are known risk factors for gastric cancer (GC), studies assessing their effects on early-onset GC are limited. In a Korean nationwide, population-based, prospective cohort study, researchers assessed the effects of smoking and alcohol consumption on early-onset GC in patients aged <50 years.

Data was analysed from patients aged 20-39 years who underwent cancer and general health screening in the Korean National Health Screening Program between 2009 and 2012. The adjusted hazard ratios (aHR) and 95% confidence intervals (CI) for GC incidence until December 2020 were calculated.

6,793,699 individuals were enrolled in this cohort. The mean duration of follow-up was 9.4 years. During follow-up, 9,893 cases of GC were reported. Compared with the aHRs (95% CI) of never-smokers, those of former and current-

smokers were 1.121 (1.044-1.205) and 1.282 (1.212-1.355), respectively. Compared with the aHRs (95% CI) of non-consumers, those of low-moderate- and high-risk alcohol consumers were 1.095 (1.046-1.146) and 1.212 (1.113-1.321), respectively. GC risk was the highest in current-smokers and high-risk alcohol consumers (1.447 [1.297-1.615]). Interestingly, alcohol consumption and smoking additively increased the GC risk in men but not in women.

Smoking and alcohol consumption are significant risk factors for early-onset GC in young Koreans. Further studies are needed to investigate sex-based impact of alcohol consumption and smoking on GC incidence in young individuals.

Source: Kang SJ, Shin CM, Han K, Jung JH, Jin EH, Lim JH, Choi YJ, Yoon H, Park YS, Kim N, Lee DH. Impact of Smoking and Alcohol Consumption on Early-Onset Gastric Cancer Development in Young Koreans: A Population-Based Study. *J Gastric Cancer*. 2024 Apr;24(2):145-158. doi.org/10.5230/jgc.2024.24.e2

Serotonergic dysfunction may mediate the relationship between alcohol consumption and Alzheimer's disease

The impact of Alzheimer's disease (AD) and its related dementias is rapidly expanding, and its mitigation remains an urgent social and technical challenge. To date there are no effective treatments or interventions for AD, but recent studies suggest that alcohol consumption is correlated with the risk of developing dementia. In a review, data from preclinical, clinical, and epidemiological models was synthesized to evaluate the combined role of alcohol consumption and serotonergic dysfunction in AD, underscoring the need for further research on this topic.

The authors first discuss the limitations inherent to current data-collection methods, and how neuropsychiatric symptoms common among AD,

alcohol use disorder, and serotonergic dysfunction may mask their co-occurrence. Additionally, they describe how excess alcohol consumption may accelerate the development of AD via direct effects on serotonergic function, and explore the roles of neuroinflammation and proteostasis in mediating the relationship between serotonin, alcohol consumption, and AD. Lastly, the authors argue for a shift in current research to disentangle the pathogenic effects of alcohol on early-affected brainstem structures in AD.

Source: Pierson SR, Kolling LJ, James TD, Pushpavathi SG, Marcinkiewicz CA. Serotonergic dysfunction may mediate the relationship between alcohol consumption and Alzheimer's disease. *Pharmacol Res.* 2024 May;203:107171. [Doi.org/10.1016/j.phrs.2024.107171](https://doi.org/10.1016/j.phrs.2024.107171).

Is low-level alcohol consumption really health-protective? A critical review of approaches to promote causal inference and recent applications

Heavy and disordered alcohol consumption is a known risk factor for several health conditions and is associated with considerable disease burden. However, at low-to-moderate levels, evidence suggests that drinking is associated with reduced risk for certain health outcomes. Whether these findings represent genuine protective effects or mere methodological artifacts remains unclear, but has substantial consequences for policy and practice.

A critical review introduces methodological advances capable of enhancing causal inference from observational research, focusing on the

'G-methods' and Mendelian Randomization. The study authors also present and evaluate recent research applying these methods and compare findings to the existing evidence base. Future directions are proposed for improving our causal understanding of the relationships between alcohol and long-term health outcomes.

Source: Visontay R, Mewton L, Sunderland M, Chapman C, Slade T. Is low-level alcohol consumption really health-protective? A critical review of approaches to promote causal inference and recent applications. *Alcohol Clin Exp Res (Hoboken)*. 2024 Apr 21. doi.org/10.1111/acer.15299.

Mediterranean diet and colorectal adenomas

Colorectal adenomas (CRAs) are epithelial lesions of the large bowel that can develop into colorectal cancer. Some studies have shown an inverse association of the Mediterranean diet (MED) with adenoma, but the extent of the association is equivocal. A study assessed the association between MED and CRAs by conducting a systematic review and meta-analysis.

A comprehensive systematic literature search of observational studies was conducted via PubMed, Scopus, Google Scholar and Web of Sciences up to May 2023. Studies were included in the review if they evaluated the association between MED and CRA, following an observational study design. Six studies were included in this study.

Adherence to MED was inversely associated with CRA risk (odds ratio, 0.79; confidence interval, 0.73-0.85); implying that higher adherence to MED could reduce the risk of CRA by ~21%. Stratification by the year of studies, sex, study design, country and exposure showed a significant association between MED and CRA.

The results of the current study provide evidence of an inverse association between adherence to MED and CRAs.

Source: Jafari Nasab S, Clark CCT, Entezari M. Mediterranean diet and colorectal adenomas: a systematic review and meta-analysis of observational studies. *Eur J Cancer Prev.* 2024 May 1;33(3):223-231. doi.org/10.1097/CEJ.0000000000000861.

Dose-response analysis between alcohol consumption and psoriasis

The association between psoriasis and alcohol consumption has been inconsistent across various studies. However, the authors of a study that they aren't aware of any dose-response meta-analysis having been performed to date. Their study investigated the association between alcohol consumption and psoriasis.

A search was performed using Embase and MEDLINE. 3,904 studies were identified, of which 48 studies with 1,702,847 individuals across 24 countries were included.

Alcohol consumption was positively associated with psoriasis (odds ratio [OR], 1.47; 95% confidence interval [CI], 1.27-1.70). In addition, a significantly increased OR for psoriasis was observed in males (OR, 1.84; 95% CI, 1.13-3.01) but

not in females (OR, 1.22; 95% CI, 0.97-1.54). Based on eight studies, including three cohort and five case-control studies, the analysis revealed that with each additional gram of daily alcohol intake, the OR for psoriasis increased by 4%.

The researchers found a positive association between alcohol consumption and psoriasis. The association is more prominent in the group drinking more than 45 g of alcohol per day (3.2 alcoholic drink equivalent).

Source: Choi J, Han I, Min J, Yun J, Kim BS, Shin K, Kim K, Kim YH. Dose-response analysis between alcohol consumption and psoriasis: A systematic review and meta-analysis. *J Dtsch Dermatol Ges.* 2024 Apr 28. doi.org/10.1111/ddg.15380.

Medical research listed by publication date

- Association of a Mediterranean Lifestyle With All-Cause and Cause-Specific Mortality: A Prospective Study from the UK Biobank 16/08/2023
- Mediterranean diet and colorectal adenomas: a systematic review and meta-analysis of observational studies 06/11/2023, available online, *European Journal of Cancer Prevention*, May 2024.
- Impact of Smoking and Alcohol Consumption on Early-Onset Gastric Cancer Development in Young Koreans: A Population-Based Study 30/11/2023
- Mediterranean diet and a health behavior index in relation to cardiovascular biomarkers: Data from the Health and Retirement Study 08/01/2024
- Long-term impact of Mediterranean diet on cardiovascular disease prevention 01/03/2024, available online, *Version of Record* 10/03/2024.
- Joint association of biological aging and lifestyle with risks of cancer incidence and mortality: A cohort study in the UK Biobank. 11/03/2024, available online, *Version of Record* 14/03/2024
- Association of combined healthy lifestyle with risk of adverse outcomes in patients with prediabetes 28/03/2024
- Dose-response effect of prenatal alcohol exposure on perinatal outcomes 30/03/2024
- The relationship between alcohol consumption and amygdala volume in a community-based sample. *Brain Imaging and Behavior* (2024) 03/04/2024
- Genetic Risk, Health-Associated Lifestyle, and Risk of Early-onset Total Cancer and Breast Cancer 06/04/2024
- Serotonergic dysfunction may mediate the relationship between alcohol consumption and Alzheimer's disease. 09/04/2024, available online, *Version of Record* 10/04/2024
- Is low-level alcohol consumption really health-protective? A critical review of approaches to promote causal inference and recent applications 21/04/2024
- Adherence to the Mediterranean diet and 20-year incidence of hypertension: the ATTICA prospective epidemiological study (2002-2022) 22/04/2024
- Hemorrhagic Strokes Attributable to Chronic Alcohol Consumption and Heavy Episodic Drinking in France 23/04/2024
- Alcohol consumption may be a risk factor for cerebrovascular stenosis in acute ischemic stroke and transient ischemic attack 23/04/2024
- Association between alcohol consumption and peripheral artery disease: Two de novo prospective cohorts and a systematic review with meta-analysis 26/04/2024
- Adolescent alcohol use is associated with differences in the diversity and composition of the oral microbiome 27/04/2024
- Long-term effects of alcohol consumption on anxiety in adults: A systematic review. 28/04/2024
- Dose-response analysis between alcohol consumption and psoriasis 28/04/2024
- Transdermal alcohol concentration features predict alcohol-induced blackouts in college students 29/04/2024
- Genetic predisposition, modifiable lifestyles, and their joint effects on human lifespan: evidence from multiple cohort studies 29/04/2024, available online
- Role of diet in the risks of esophageal adenocarcinoma and squamous cell carcinoma: an updated umbrella review 30/04/2024
- Healthy lifestyle and cancer survival: A multinational cohort study 15/05/2024

How is alcohol consumption and heavy episodic drinking spread across different types of drinking occasion in Great Britain

A paper in the *International Journal of Drug Policy* provides a typology of British alcohol drinking occasions and estimates the average consumption level, prevalence of heavy drinking, and distribution of all alcohol consumption and heavy drinking within and across occasion types.

The research used a cross-sectional latent class analysis of event-level diary data that included characteristics of 43,089 drinking occasions in 2019 reported by 17,821 adult drinkers in Great Britain. The latent class indicators were characteristics of off-trade only (e.g., home), on-trade only (e.g., bar) and mixed trade (e.g., home and bar) drinking occasions. These describe companions, locations, purpose, motivation, accompanying activities, timings, consumption volume in units (1 UK unit = 8g ethanol) and beverages consumed.

The analysis identified four off-trade only, eight on-trade only and three mixed-trade occasion types (i.e., latent classes). Mean consumption per occasion varied between 4.4 units in Family meals to 17.7 units in Big nights out with pre-loading. It exceeded ten units in all mixed-trade occasion types and in Off-trade get togethers, Big nights out and Male friends at the pub.

Three off-trade types accounted for 50.8% of all alcohol consumed and 51.8% of heavy drinking occasions: Quiet drink at home alone, Evening at home with partner and Off-trade get togethers. For thirteen out of fifteen occasion types, more than 25% of occasions involved heavy drinking. Conversely, 41.7% of Big nights out and 16.4% of Big nights out with preloading were not heavy drinking occasions.

The researchers found that alcohol consumption varies substantially across and within fifteen types of drinking occasion in Great Britain. Heavy drinking is common on most occasion types. However, moderate drinking is also common in occasion types often characterised as heavy drinking practices. Mixed-trade drinking occasions are particularly likely to involve heavy drinking.

Source John Holmes, Alessandro Sasso, Mónica Hernández Alava, Rita Borges Neves, Abigail K Stevely, Alan Warde, Petra S Meier. How is alcohol consumption and heavy episodic drinking spread across different types of drinking occasion in Great Britain: An event-level latent class analysis, *International Journal of Drug Policy*, Volume 127, 2024, 104414, ISSN 0955-3959.

doi.org/10.1016/j.drugpo.2024.104414.

Binge drinking among sports gamblers

Sports wagering has become accessible to most individuals via mobile applications or websites. Increasing evidence suggests that sports wagering is associated with greater substance use and misuse, particularly alcohol, and symptoms of alcohol use disorder. Alcohol consumption is higher among sports gamblers, and sports gamblers often consume alcohol while gambling. Researchers examined whether individuals who wager on sports in the US are at greater risk of binge use of alcohol. They collected a census-matched sample of US adults with an oversample of adults who wager on sports. 4363 respondents were included in the study.

Sports wagers were disproportionately more likely to report binge drinking at monthly or greater frequency over the past 12 months and were also disproportionately less likely to report no binge drinking episodes in the past 12 months. After adjusting for age and race and ethnicity,

sports gamblers were substantially more likely to report higher levels of binge drinking, suggesting that elevated risky drinking episodes among sports gamblers are not due to demographic differences.

The researchers say that in the study binge drinking in both men and women was reported at greater frequency among sports wagering individuals compared with nongamblers and non-sports gamblers. Given the rapid spread of sports wagering in the US over recent years, this finding highlights an immense need for ongoing research, particularly to examine how novel gambling technologies influence the prevalence, presentation, and prevention of alcohol use disorders and related harms.

Source: Grubbs JB, Kraus SW. Binge Drinking Among Sports Gamblers. *JAMA Network Open*. 2024;7(4):e245473. doi.org/10.1001/jamanetworkopen.2024.5473

A thematic analysis of alcohol and alcohol-related harm across health and social policy in Aotearoa New Zealand

A study by researchers in New Zealand explored how alcohol and alcohol harm are framed in New Zealand national policy, strategy, and action plan documents; and examined how these documents align with the WHO SAFER framework.

Keyword searches across government websites and Google were conducted in January 2021 and 22 documents were included for analysis in the study. An inductive and deductive thematic analysis of those documents was performed.

From the inductive analysis, three themes were identified, one of which 'Location of responsibility for addressing alcohol harms' was detailed in this study, with a focus on individuals and non-specific government agencies. Thematic results from the deductive analysis found that the most consistently referenced SAFER policies included brief interventions (68% of documents), followed

by drink driving measures (45%), alcohol marketing (36%), alcohol availability (27%), and alcohol price (23%). The conversion rate from a document mentioning a SAFER framework policy area to making specific policy recommendations was usually less than or around 50%.

The study concludes that the lack of alignment between New Zealand alcohol policy and the SAFER framework can be partially attributable to the absence of an updated National Alcohol Strategy (NAS). The authors argue that an updated strategy should identify responsible agencies, create a systematic monitoring and evaluation mechanism, and be consistent with the WHO SAFER framework.

Source: Darrah T, Herbert S, Chambers T. A thematic analysis of alcohol and alcohol-related harm across health and social policy in Aotearoa New Zealand. *Aust N Z J Public Health*. 2024 Apr;48(2):100143. doi.org/10.1016/j.anzjph.2024.100143.

Study finds alcohol ED presentations increasing among older New Zealanders

Findings from a University of Otago, Christchurch, study suggests that alcohol harm is becoming more prevalent among older New Zealanders but less so for youth, with alcohol-related presentations placing a significant but preventable burden on hospital emergency departments.

The study, published in the *New Zealand Medical Journal*, provides a detailed 'snapshot' of alcohol-related patient presentations to the Christchurch Hospital emergency department over three separate but similar timeframes in 2013, 2017 and 2022. People presenting to the Christchurch Hospital ED (with over 130,000 presentations annually) were approached and consented to take part in the study if they had ingested alcohol in the four hours prior to presenting, or if their presentation was thought to be due to alcohol.

Lead researcher Dr Laura Joyce, a Christchurch Hospital Emergency Physician and Senior Lecturer at the University's Christchurch campus, said that 'excess of alcohol' as a reason for presentation increased from just over 5% in 2013 to 11% in 2022.

A key study finding was the change in age profile towards older New Zealanders attending the ED with alcohol-related issues. Over the three waves, the median age of participants increased to 39 years. Specifically, in the 25-54 age group, alcohol presentations rose from 29.9% (in 2013) to 40.1% (in 2022); and in the over 54 age group from 11.6% (in 2013) to 23.9% (in 2022). Conversely, the study shows a drop in the numbers of youth presenting to the ED with alcohol-related issues; in 2013 youth aged 25 and under made up 33.6% of presentations, dropping to 19.3% in 2022.

The study shows binge-drinking is still prevalent in New Zealand society, with a significant proportion of patients in each wave (26.5% in 2022) admitting to having consumed 20 or more standard drinks in a single occasion. The study authors say it's highly important that EDs in New Zealand systematically collect alcohol-related data, to help inform effective population-level alcohol policies to reduce excessive drinking.

Source: Joyce LR, Cleland L, Forman E, Hlavac A, Foulds J, Crossin R. Changes in alcohol-related emergency department presentations—a comparison of three waves in 2013, 2017 and 2022. *N Z Med J*. 2024 Apr 12;137(1593):56-67. doi.org/10.26635/6965.6375.

The association between single and dual use of cannabis and alcohol and driving under the influence and riding with an impaired driver

Dual use of cannabis and alcohol has increased in adolescents in Canada, but limited research has examined how it relates to impaired driving or riding with an impaired driver (IDR) compared to single substance use. A study examined the odds of alcohol- and/or cannabis-IDR among adolescents based on their use of alcohol and/or cannabis, and whether associations differed by gender and age.

Cross-sectional survey data were used from a sample of 69,621 students attending 182 Canadian secondary schools in the 2021/22 school year. Overall, 14.7% of participants reported IDR; 7.5% reported exclusive alcohol-IDR, 3.2% reported exclusive cannabis-IDR, 4.0% reported alcohol-cannabis-IDR, and 7.4% were unsure if they had experienced IDR. The prevalence of IDR varied across substance use groups, 8.0% among non-use, 21.9% among alcohol-only use, 35.9% among cannabis-only use, and 49.6% among dual use groups. Gender diverse, older, and students with lower socioeconomic status exhibited a higher likelihood of reporting alcohol-cannabis-

IDR. Dual use was significantly associated with 9.5 times higher odds of alcohol-cannabis-IDR compared to alcohol-only use, and 3.0 times higher odds compared to cannabis-only use. Dual use was also associated with an increased likelihood of either alcohol- or cannabis-IDR.

The study authors say that their study highlights that all students, regardless of substance use, are at risk of IDR, but students engaged in dual use of alcohol and cannabis face an elevated risk compared to both peers who do not use substances and those who use only a single substance. These findings emphasize the importance of targeted interventions that address the risks associated with IDR.

Source: Gohari, M. R., Patte, K. A., Elton-Marshall, T., Cole, A., Turcotte-Tremblay, A. M., Bélanger, R., & Leatherdale, S. T. (2024). The association between single and dual use of cannabis and alcohol and driving under the influence and riding with an impaired driver in a large sample of Canadian adolescents. *Traffic Injury Prevention*, 1–9. doi.org/10.1080/15389588.2024.2342571

Where do high-risk drinking occasions occur more often? A cross-sectional, cross-country study

A paper published in *Drug and Alcohol Review* examined the proportion of drinking occasions and total alcohol consumption that takes place at off-premise locations. Comparisons were made between high-income countries.

Data were taken from the International Alcohol Control study in Australia, New Zealand, England and Scotland. The cross-national survey measured location and beverage-specific alcohol consumption. The number of drinking occasions and mean consumption across on- and off-premise locations and the proportion of drinking occasions that high- and lower-risk drinkers had at on- and off-premise locations was estimated for each country.

The majority of drinking occasions among high-risk drinkers occurred at off-premise locations across all four countries: Australia 80.1%, New Zealand 72.0%, England 61.7% and Scotland 60.7%. High-risk drinkers in Australia had significantly larger proportions of drinking

occasions occurring at off-premise locations compared to England and Scotland. Across all countries, high-risk drinkers and lower-risk drinkers consumed significantly larger quantities of alcohol per occasion at off-premise locations compared to on-premises locations. Finally, the majority of total alcohol consumed occurred at off-premise locations across all countries for high- and lower-risk drinkers.

The authors comment that as the accessibility to alcohol outside of licensed premises continues to increase, particularly with the expansion of home delivery services, it is important to be mindful of the high proportion of heavy drinking occasions that occur off-premise.

Source: Torney A, Room R, Jiang H, Huckle T, Holmes J, Callinan S. Where do high-risk drinking occasions occur more often? A cross-sectional, cross-country study. *Drug Alcohol Rev.* 2024 Apr 8. Doi.org/10.1111/dar.13844.

The intergenerational continuity of alcohol use in a population sample

Research shows that parental alcohol use predicts youths' alcohol use, but this intergenerational continuity may vary across countries, and little is known about its moderators. Researchers in Canada examined for the first time the intergenerational continuity in alcohol use in a population sample of families in Canada, and tested whether it varied by youths' sex, family income, or family structure.

Prospective longitudinal data on 1,632 families from the Quebec Longitudinal Study of Child Development (QLSCD) provided a representative sample from the province of Quebec, Canada. Youths self-reported alcohol use and binge drinking frequency were recorded at seven timepoints from early adolescence to early adulthood. Predictors were mothers' and fathers' self-reported alcohol use from youths' infancy through age 13, and mother-reported socioeconomic variables.

The researchers identified three trajectories of alcohol use from ages 13 to 21 years: normative,

late-onset and early-onset. Maternal alcohol use increased the youths' risk of following the early-onset trajectory of alcohol use, while both parents' alcohol use decreased the odds of the youths following the late-onset trajectory, compared to the normative trajectory. Insufficient family income increased youths' risk of following either the early-onset or late-onset trajectories. Mothers' and fathers' alcohol use did not interact in predicting youths' trajectory, and no moderating effects of the youths' sex, insufficient income, or years as a single-parent family were found.

The results suggest modest intergenerational continuity of alcohol use in Quebec families which may be used, with income insufficiency, to help identify at-risk children for targeted interventions.

Source: Gabriel Bernard, H  l  ne Paradis, Sylvana C  t  , Richard E. Tremblay, Michel Boivin, Am  lie Petitclerc, *The intergenerational continuity of alcohol use in a population sample*, *Addictive Behaviours*, Volume 152, 2024, 107954, ISSN 0306-4603, doi.org/10.1016/j.addbeh.2024.107954.

Interrupted time series analysis of bar/tavern closing hours and violent crime

A study conducted in the US assessed whether a state-mandated reduction of the number of hours when bars/taverns can sell or serve alcohol was associated with the prevention of violent crime near these outlets. Specifically, researchers evaluated the association of Maryland Senate Bill 571 (SB571), which reduced the hours of sale for bars/taverns in 1 Baltimore neighbourhood from 6 AM to 2 AM to 9 AM to 10 PM, with violent crime within that neighbourhood.

An analysis compared the change in violent crime density within an 800-ft buffer around bars/taverns in the treatment neighbourhood (i.e., subject to SB571) and 2 control areas with a similar mean baseline crime rate, alcohol outlet density, and neighbourhood disadvantage score in the City of Baltimore between May 1, 2018, and December 31, 2022.

The primary outcome was all violent crime, including homicide, robbery, aggravated and common assault, and forcible rape. Secondary outcomes were homicides and assaults.

The treatment neighbourhood included 26 bars/taverns (mean [SD] population, 524.6 [234.6]

residents), and the control neighbourhoods included 41 bars/taverns (mean [SD] population per census block, 570.4 [217.4] residents). There was no immediate level change in density of all violent crimes the month after implementation of SB571; however, there was a 23% annual decrease in all violent crime compared with control areas and homicide rates dropped by 51% in the first month post intervention and 40% annually thereafter.

The study's findings suggest that alcohol policies that reduce hours of sale could be associated with a reduction in violent crimes. These findings suggest that statutory restriction of hours of alcohol sales for bars/taverns may serve as a model for other cities looking to create safer neighbourhoods.

Source: Rosen EM, Trangenstein PJ, Fullem PL, Yeh JC, Jernigan DH, Xuan Z. *Interrupted Time Series Analysis of Bar/Tavern Closing Hours and Violent Crime*. *JAMA Intern Med*. 2024 Apr 1:e240255. [Doi.org/10.1001/jamainternmed.2024.0255](https://doi.org/10.1001/jamainternmed.2024.0255).

Digital alcohol marketing and gender

A review published in the *Drug and Alcohol Review*, examined how males, females and other genders are targeted and represented in digital alcohol marketing, and how they are encouraged to engage with digital alcohol marketing content. Academic literature and research reports were searched for studies on digital alcohol marketing published within the previous 10 years with a range of methods and designs. A narrative synthesis approach was employed and the review included 17 articles and 7 reports with a range of designs and methods, including content analyses of digital material, interviews, focus groups and surveys. The analysis identified three conceptual themes that captured many of the gendered results, namely: (i) leveraging a diversity of idealised femininities; (ii) amplifying hegemonic

masculinity; and (iii) infiltrating everyday gendered life.

The authors state that alcohol marketing on social media is highly gendered and is designed to embed itself into everyday life in agile ways that reinforce traditional and evolving gendered stereotypes, activities, lifestyles and roles. Gendered engagement strategies are widely used to link alcohol to everyday gendered activities and identities to encourage alcohol purchase and consumption. This marketing normalises alcohol consumption and reproduces harmful gender norms and stereotypes.

Source: Lyons AC, Kersey K, Emslie C, Dimova E, Burrows A. Digital alcohol marketing and gender: A narrative synthesis. *Drug Alcohol Rev.* 2024. doi.org/10.1111/dar.13849

The association between environmental temperature and alcohol consumption

The association between environmental temperature and alcohol consumption has not been widely explored despite the potential that increasing temperatures could promote the consumption of alcoholic beverages and the alcohol-related burden of disease. A study explored the association between temperature and binge drinking in Mexican adults from urban cities, overall, and by alcoholic beverage type.

Data on 10,552 adults ≥ 18 years was obtained from the 2016 National Survey on Drug, Alcohol, and Tobacco Consumption. The mean annual temperature at the municipality was obtained from the Mexican National Weather Service using monthly temperatures from 2015 to 2016. Researchers analysed binge drinking for all alcoholic beverages in the last year and by type of alcohol as beer, liquor, wine, and coolers. Associations between mean temperature over the past year and binge drinking over the past year among current drinkers were adjusting for age, sex, education level, marital status, and household socioeconomic status, with a fixed effect by region.

The researchers observed a non-significant increase in the prevalence of binge drinking for every difference of 1 °C between municipalities of the same region. By alcohol type, a 1 °C increase in

mean annual temperature across municipalities of the same region increased the prevalence of beer binge drinking in the past year by 0.9% (PR = 1.009, 95%CI 1.005, 1.013) among beer consumers and the prevalence of coolers' binge drinking by 3.0% (PR = 1.030, 95%CI 1.003, 1.057) in coolers consumers. Non-significant results for liquor binge drinking (PR = 1.047, 95%CI 0.994, 1.102) and wine binge drinking (PR = 1.047, 95% 0.944, 1.161) were also observed.

The researchers state that people living in municipalities with higher temperatures reported higher beer binge drinking in Mexican cities. The context of each country needs to be considered when generalizing these findings, and they need to be further explored with longitudinal data as there might be implications for climate change. If the study findings are confirmed, given the forecasted rising temperatures, we could expect an increase in binge drinking and therefore, in the alcohol burden of disease.

Source: Carnalla M, López-Olmedo N, Ramírez-Toscano Y, Cárdenas-Cárdenas LM, Canto-Orsorio F, Rengifo-Reina H, Barrera-Núñez D, Quiroz-Reyes JA, Colchero MA, Barrientos-Gutiérrez T. Binge drinking associated with mean temperature: a cross-sectional study among Mexican adults living in cities. *Global Health.* 2024 Apr 12;20(1):29. doi.org/10.1186/s12992-024-01033-z.

Social research listed by publication date

- The intergenerational continuity of alcohol use in a population sample 06/02/2024, available online, Version of Record 31 January 2024.
- Binge drinking among sports gamblers 02/04/2024
- How is alcohol consumption and heavy episodic drinking spread across different types of drinking occasion in Great Britain: An event-level latent class analysis 07/04/2024, available online, Version of Record 7/04/2024.
- Where do high-risk drinking occasions occur more often? A cross-sectional, cross-country study 08/04/2024
- Changes in alcohol-related emergency department presentations-a comparison of three waves in 2013, 2017 and 2022 23/04/2024
- Study finds alcohol ED presentations increasing among older New Zealanders 23/04/2024
- A thematic analysis of alcohol and alcohol-related harm across health and social policy in Aotearoa New Zealand 25/04/2024, available online, Version of Record 15 April 2024.
- Digital alcohol marketing and gender: A narrative synthesis 22/04/2024
- The association between single and dual use of cannabis and alcohol and driving under the influence and riding with an impaired driver in a large sample of Canadian adolescents 24/04/2024, available online

Drinkaware Barometer in Ireland

Drinkaware in Ireland has published its full Barometer Report for 2023, which examines the evolving landscape of alcohol consumption in Ireland. The report provides insights into drinking practices, motivations, and perceptions surrounding alcohol. The findings are based on an Ipsos B&A study with a nationally representative sample of 1,000 adult participants.

Now in its eighth year, the research identifies significant shifts in drinking behaviours, particularly in binge drinking, mental well-being, and intentions around personal alcohol consumption reduction.

In 2023, 59% of Irish adults said that they drank alcohol at least weekly (52% in 2020), 26% of drinkers said they binge drink (20% in 2020); and there was a rise in drinkers who had binge drunk in the past 30 days (46% in 2020, 56% in 2023). Motivational patterns also changed over 4 years with an overall decline in adults drinking to cope (55% in 2023, 51% in 2022, 61% in 2021, 60% in 2020). While mental wellbeing scores improved modestly in 2022, low mental wellbeing again increased to just over one third of adults in 2023. However, low mental wellbeing consistently peaked among 25–34-year-olds (45% in 2023), and those that increased their alcohol consumption since COVID-19. In 2023, more adults than ever

before showed positive intentions, with an increase in adults wanting to drink alcohol less often (24% in 2020 to 36% in 2023) and those already making small positive changes (31% in 2020 to 41% in 2023). 30% of adults agreed that 'Irish drinking culture has changed for the better since COVID-19.'

The report authors say that the wealth of data generated since 2020 provides crucial insights into both the impact and legacy of COVID-19 on behaviour change. However, the unique context of 2023 means that Ireland is still facing significant issues such as increased cost-of-living and insecurities surrounding social unrest and international conflicts taking place. Disparity between consumption increases and desire to drink less indicates a need for public education & engagement to enable and sustain positive changes post COVID-19 pandemic

"The Barometer findings provide a roadmap for Drinkaware in 2024 and beyond, enabling us to pursue our goal of reducing the harm caused by alcohol misuse in an ever-evolving landscape and social context," Drinkaware CEO Dearbhla O'Brien commented. "We are working to ensure that the evidence provided in Barometer 2023 informs future discussions on alcohol prevention and interventions".

drinkaware.ie/barometer

Alcohol: availability, affordability, related harm, and policy in Ireland

The latest alcohol overview from the Health Research Board (HRB) in Ireland highlights that despite a decline in pubs, Ireland still ranks 3rd highest in the world for the number of pubs per head, and three-in-four people live within walking distance of a premises licenced to sell alcohol. The decline in the number of pubs has also been matched by an increase in off licenses.

The overview is the fifth in a series, examining data and trends on alcohol use and related consequences over time in Ireland. The data show that there has been a decrease in per capita alcohol use since the last overview was published in 2021, but harmful and hazardous drinking patterns are impacting people's health and health services.

Ireland is ranked 8th out of 30 countries for the proportion of household income spent on alcohol. The report highlights that the average annual consumption for people aged 15 years and over in 2023 was 9.9 litres of pure alcohol. There has, however been an increase in the number of people aged 15 years and over who do not drink

at all, up from 25% in 2018 to 30% in 2022.

Alcohol use is the 8th leading cause of death in Ireland. One in five emergency department hospitalisations are due to alcohol and almost 19,000 hospitalisations are attributable to alcohol alone in 2021. Alcohol is still the substance for which people seek treatment the most. The number of cases receiving treatment for alcohol use in 2022 was higher than that of cocaine and cannabis combined. On a more positive note, 45% completed their treatment course and more than half of people were alcohol-free when leaving treatment. There were also 5,527 incidents of drink-driving, and 9,917 incidents of drunkenness recorded on PULSE in 2022.

For the first time, alcohol availability in Ireland is examined and reveals that almost 75% of the population live within walking distance (300 meters) of a licenced premises and that there is a greater density of these premises in more deprived communities.

hrb.ie/fileadmin/user_upload/HRB_Alcohol_Overview_Series_13.pdf

Italy - The annual National Alcohol Observatory report

In an annual report of alcohol consumption in Italy, the Higher Health Institute (ISS) said that 8 million Italians over the age of 11 (21.2% of men and 9.1% of women) drank quantities of alcohol that put their health at risk. Three million 700 thousand people drank to get drunk and 770,000 were harmful consumers with Alcohol Use Disorders. Data was presented on April 18th, during an international workshop scheduled at the ISS headquarters.

Consumers at risk have increased in Italy, particularly among men, and the achievement of the Sustainable Health Goals of the United Nations 2030 Agenda remains distant.

Emanuele Scafato, Director of the ONA-ISS, stated, "Alcohol consumption in Italy highlights a consolidated and worrying situation of increased risk which is spreading among the most vulnerable segments of the population: minors, adolescents, women and the elderly... In order to outline the roadmap for a renewed national and regional prevention, the most effective possible, it is necessary to intercept all consumers at risk early and ensure that those with alcohol impairments and those dependent on alcohol are treated, to support individuals, families and objectives of the

European and global strategies to which we are engaged".

There are 36 million alcohol consumers in Italy, (77.4% of males and 57.5% of females). 10,200,000 Italians over the age of 18 drank alcohol daily. Among consumers at risk, young people (around 1,310,000 between the ages of 11 and 24, of which 650,000 minors) and women (around 2.5 million, with 15.5% of consumers at risk among minors) are of particular concern. Of the 3.7 million binge drinkers, males of all ages are heavily represented (104,000 are minors). There were also 770,000 harmful consumers, 290,000 of whom were women. Of the 770,000 harmful consumers with Alcohol Use Disorders (DUA) in need of treatment, only 8.2% were clinically intercepted, for a total of 62,886 alcohol dependents under the care of the National Health System (NHS) services, with a constant and worrying decrease compared to the expected harmful consumers.

The data from the EMUR system of the Ministry of Health shows that in 2022, there were 39,590 alcohol-related emergency room cases - of which 10.4% were requested by minors - marking an increase of 12.1% in one year.

agi.it/cronaca/news/2024-04-16/alcol-otto-milioni-italiani-rischio-consumo-giovani-26045379/

Drinking habits survey in Finland

THL's Drinking Habits Survey, conducted for the first time in 2023 as part of the Healthy Finland health study, finds that regular alcohol consumption in Finland, (i.e., at least weekly), decreased among both men and women between 2016 and 2023 to 48% for men and 22% for women, compared to 52% and 29% in 2016.

Nearly daily alcohol consumption was quite rare: (6% of men and 2% of women consume alcohol at least four times a week). Alcohol consumption was most prevalent among men and women in the oldest age group of 55-69-year olds and least common in the youngest age group of 20-34-year olds. Alcohol consumption was most frequent among men over the age of 54: 62% of them consumed alcohol at least weekly and 11% four times a week or more.

Although alcohol consumption generally decreased, monthly heavy episodic drinking at the whole-population level was almost as common in 2023 as in 2016. In 2023, 21% of the respondents reported at least monthly heavy episodic drinking (i.e., six or more servings of alcohol), compared to 22% in 2016. In 2023, the decline in heavy episodic

drinking at this level continued in the age group 20-34. However, severe intoxication was still most common among men aged 20-34. Of them, 41% had drunk at least 13 servings of alcohol on at least one day the previous year.

In 2023, 12% of the population, 10% of men and 14% of women were non-drinkers. The share of non-drinkers remained at the same level as in 2016, while 15% of men and 9% of women exceeded the low-risk level defined for health risks caused by the long-term use of alcohol (more than 14 servings a week for men and more than 7 servings a week for women).

28% of the total population, 31% of men and 21% of women, exceeded the lowest risk threshold of the AUDIT test, which screens alcohol problems (at least six points for women and eight points for men). Recommendations indicate that these people should be offered advice on how to reduce their alcohol consumption by health care providers. 6% of men and 4% of women had experienced health problems caused by their alcohol consumption.

julkari.fi/handle/10024/147677

IAS report - Alcohol and Economic Crises

A report from IAS considers the impact on alcohol consumption and levels of harm during periods of economic difficulty (including during the COVID-19 pandemic) and makes recommendations for policy measures that might best protect public health in times of economic instability.

The report states that there is a relationship between a society's socioeconomic conditions (i.e., levels of income, education, unemployment, and job insecurity) and health outcomes. Main points from the report include:

- Economic crises can affect population health outcomes in several ways, including impacting health behaviours such as alcohol consumption.
- Evidence indicates that population-level alcohol consumption decreases during economic crises, but with increases in high-risk alcohol use seen among some subgroups.
- Suffering a more severe economic loss, being a man, being unemployed, and being less well-educated may increase the likelihood of engaging in more/higher risk drinking during an economic crisis.

- Mechanisms for increasing/decreasing alcohol consumption include psychological distress and tighter budget constraints.
- Targeted support for people experiencing unemployment, and population-wide measures to improve access to treatment and support, restrict marketing, and raise the prices of the cheapest alcohol could reduce levels of alcohol harm.

ias.org.uk/report/alcohol-and-economic-crises/

Scotland minimum price increase agreed

In April Scottish Members of Parliament voted to increase the minimum unit price of alcohol by 30%. The minimum unit price (MUP) will now be increased from 50p to 65p in a bid to tackle deaths and hospital admissions linked to alcohol harm. As part of a "sunset clause" when the legislation was introduced, it had been due to end on 30 April 2024. The vote now ensures its continuation. The increase will come into force on 30 September this year.

Alcohol-specific deaths in the UK: registered in 2022

In April, the UK Office for National Statistics reported on deaths caused by diseases known to be a direct consequence of alcohol. In 2022, there were 10,048 deaths (16.6 per 100,000 people) from alcohol-specific causes registered in the UK, the highest number on record. This figure is 4.2% higher than in 2021 (9,641 deaths; 14.9 per 100,000) and 32.8% higher than in 2019 (7,565 deaths; 11.8 per 100,000), the last pre-coronavirus (COVID-19) pandemic year. Between 2012 and 2019, rates of alcohol-specific deaths in the UK remained stable, with no statistically significant changes in the age-standardised rate. Consistent with previous years, the rate of alcohol-specific deaths for males in 2022 remained around double

the rate for females (22.3 and 11.1 deaths per 100,000 people, respectively).

Scotland and Northern Ireland had the highest rates of alcohol-specific deaths in 2022 (22.6 and 19.5 deaths per 100,000 people, respectively). Compared with 2019, there have been statistically significant increases in the alcohol-specific death rate in England, Wales, and Scotland. The Northeast had the highest rate of alcohol-specific deaths of any English region in 2022 (21.8 deaths per 100,000); the East of England had the lowest rate (11.0 deaths per 100,000).

ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/bulletins/alcoholrelateddeathsintheunitedkingdom/registeredin2022/pdf

Overview of Motor Vehicle Traffic Crashes in the US for 2022

According to newly released data from the National Highway Traffic Safety Administration (NHTSA), in 2022 there were 716 fewer motor vehicle traffic crash fatalities on US roads, down 1.7% from 43,230 in 2021 to 42,514 in 2022. Risky driving behaviours, such as alcohol-impaired driving, speeding, and failing to use seatbelts, are major behavioural factors contributing to traffic crashes and fatalities. In 2022, among passenger vehicle drivers involved in fatal crashes, 45% engaged in at least one of these behaviours.

In 2022, drunk driving fatalities remained relatively unchanged, decreasing 0.7% and accounting for 32% of overall traffic fatalities. The alcohol-impaired-driving fatality rate per 100 million VMT decreased by 2.3% from 0.43

in 2021 to 0.42 in 2022. Twenty-four states and the District of Columbia reported declines in the number of drunk driving fatalities from 2021 to 2022, but in 24 states there was an increase in alcohol-impaired driving fatalities. Two states had no change from 2021 to 2022.

NHTSA also released its latest projections for traffic fatalities in 2023, estimating more miles driven and lower fatality rates compared to 2022. It estimates that 40,990 people died in motor vehicle traffic crashes in 2023, a decrease of 3.6% as compared to the 42,514 fatalities reported to have occurred in 2022. This marks the seventh consecutive quarterly reduction in traffic fatalities.

crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813560

Table 7. Total and Alcohol-Impaired-Driving Traffic Fatalities, and Alcohol-Impaired-Driving (AI-Driving) Fatality Rates per 100 Million VMT, 2021-2022

	2021	2022	Change	% Change
Total Fatalities	43,230	42,514	-716	-1.7%
Alcohol-Impaired-Driving Fatalities	13,617	13,524	-93	-0.7%
AI-Driving Fatality Rate per 100 Million VMT	0.43	0.42	-0.01	-2.3%

Plan for server training in Ohio

A new bill in Ohio would require state-approved training for anyone who serves alcohol.

The bill would require all liquor permit holders and their employees to complete a training programme approved by the superintendent of liquor control. The training would include the laws on alcohol sales, preventing sales to underage

people, recognising when to stop serving alcohol to someone and conflict management skills in alcohol-related situations.

If liquor permit holders and employees complete the training and follow the training protocols, they would be immune to personal injury, death or property damage lawsuits.

Healthier party culture initiative in Denmark

The Danish Health Authority, together with Danish Gymnasiums and Danish Vocational Schools and Secondary Schools - is appealing to the country's high schools and vocational schools to create a healthier and more inclusive party culture.

In a joint letter, they argue that it is possible to change the party culture so that alcohol plays a smaller role when teenagers start secondary education and when parties and events are held at school.

New figures from Trygfonden, show that six out of ten young people believe that it is difficult to be part of the social community at a youth education establishment if you do not drink. Head of unit for Prevention and inequality and the National Board of Health, Niels Sandø, commented, "Fortunately, many youth education programs have taken more responsibility in recent years to ensure a healthier and more inclusive alcohol culture, but we need more people involved... Danish young people drink a lot of alcohol, and they start drinking early. We know that alcohol is harmful to children and young people and that it can affect their learning. Many young people find that parties and get-togethers where alcohol is dominant exclude them from the community. Therefore, it is important that we change the current party culture, which focuses on getting drunk, and instead get a party culture that focuses on the social and can include all students

The letter highlights the importance of parents supporting the schools' initiatives and the letter. Therefore, the letter also contains an appeal for schools and the new students' parents to discuss how they can enhance the school's efforts to establish good communities where all students can feel safe and welcome, and where social events do not revolve around alcohol. The letter makes an appeal for the initial period after the summer break until the end of September to be alcohol free across all grades at the schools. This is when parties and other events are organised by the schools or tutors and, introductory trips should also be alcohol-free in order to provide an opportunity for students to form friendships and establish themselves socially without alcohol being the focal point of communities and parties. Sandø added, "We know that a cultural change such as the one we are calling for can be met with resistance and concern about whether alcohol-free events will lead to a lack of participation from students. But there are now many youth education programs, which have good experience of working with their alcohol and party culture in different ways. Therefore, there are many good examples and experiences to delve into together with the students, so that you can have togetherness and not alcohol as the focus."

sst.dk/da/nyheder/2024/Sammen-kan-vi-skabe-en-ny-festkultur-paa-ungdomsuddannelserne

Taking action on Fetal Alcohol Spectrum Disorder in New Zealand

Hundreds of New Zealand families affected by Fetal Alcohol Spectrum Disorder (FASD) will benefit from a new Government focus on prevention and treatment announced by Health Minister Dr Shane Reti. The New Zealand government will introduce five new initiatives, including:

- Publishing new FASD clinical diagnostic guidelines, specifically tailored for New Zealand communities.
- Offering health professionals from the Child Development Services training to use the new diagnostic guidelines from July. By the end of the year 30 health professionals will be trained as a first step in expanding a workforce that's better equipped to support people with FASD and their families.

- Establishing a new, community-led FASD Pilot Programme from May 2024 to provide tailored support to whānau and caregivers at all stages of FASD.
- From October, promoting a national FASD prevention campaign to raise awareness of the impact of FASD and supporting positive choices to minimise risk.
- Revitalising the existing FASD Action Plan to ensure a coordinated, system-wide approach.

"We know FASD is a leading cause of preventable intellectual and neurodevelopmental disability in New Zealand," Dr Reti said. "I'm pleased to be announcing a range of new initiatives to strengthen the health workforce's ability to assess, diagnose, refer, and support people with FASD and their families".

beehive.govt.nz/release/taking-action-fetal-alcohol-spectrum-disorder

HBSC international report on adolescent substance use in Europe, central Asia and Canada

A Health Behaviour in School-aged Children (HBSC) study provides insights into the health and well-being of adolescents across Europe, central Asia and Canada. In this, the study's 40th anniversary year, findings from the 11th consecutive international survey are being published in a series of topic-based volumes that summarise the key findings around specific health topics. In April, Volume 3 in the series was published, focussing on adolescent substance use. It shows that substance use increases sharply during the early adolescent years.

While substance use remains generally higher among boys than girls at age 11, there is emerging evidence of increasing gender convergence from age 13 onwards, with girls now reporting similar or higher levels of substance use than boys in many countries and regions. The report raises concerns about the high rates of electronic cigarette use, and also evidence that alcohol use may be increasing again among girls in some countries and regions.

Among 11-year-olds, 18% of boys and 13% of girls reported drinking alcohol in their lifetime. Prevalence was 33% for 13-year-olds and 57% for 15-year-olds (56% for boys and 59% for girls). Lifetime alcohol use varied greatly across countries and regions. Eleven-year-old boys were more likely than girls to report drinking alcohol in their lifetime in 26 countries and regions and 13-year-old boys in seven, but at age 15 the reverse was found, with girls more likely to report drinking alcohol in 13 countries and regions and boys in only three. Overall lifetime alcohol use in boys decreased between 2018 and 2022, particularly among 15-year-olds. Conversely, an increase was observed among girls (except for 15-year-olds).

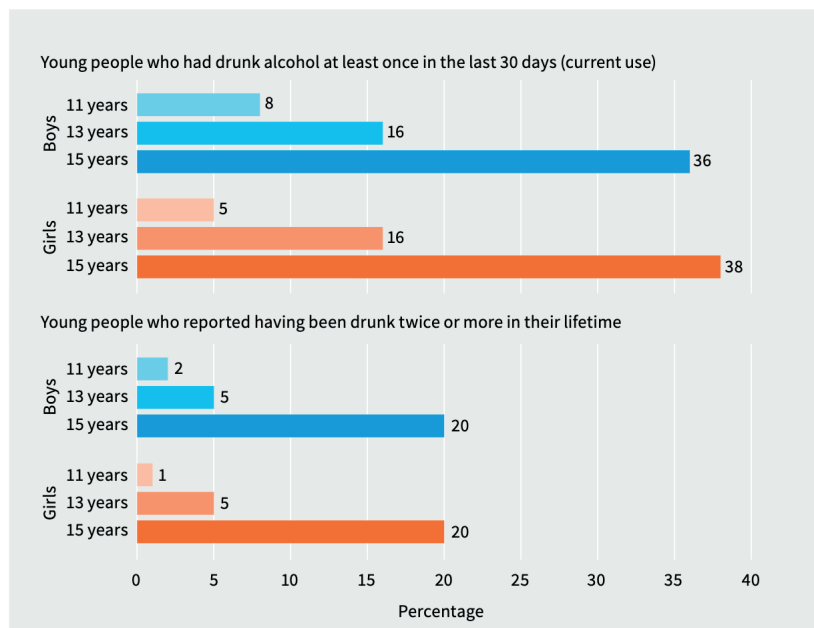
Gender differences in current use also varied between ages 11 and 15. Among 11-year-olds, 8% of boys and 5% of girls reported current use (consuming alcohol at least once in the past 30 days). Prevalence increased with age to 16% of boys and 16% of girls at age 13 and 36% of boys and 38% of girls at 15. Current alcohol use

also varied widely across countries and regions. At age 11, prevalence ranged from fewer than 1% of girls in Ireland and Tajikistan to 20% of boys in Bulgaria and the Republic of Moldova. At age 13, it ranged from under 1% of boys and girls in Tajikistan to 32% of boys in Bulgaria and girls in United Kingdom (England). The highest prevalence among 15-year-olds was observed in Denmark (68% for boys and 69% for girls) and the lowest in Tajikistan (under 1% for both boys and girls). Prevalence of current alcohol use at age 11 was higher among boys than girls in half of the countries and regions. At age 13, only 10 countries and regions showed significant gender differences, and in six of these, current alcohol use was higher among girls. The opposite trend for 15-year-olds was observed in 12 of the 15 countries and regions in which there was a gender difference, with more girls using alcohol in the past 30 days.

While the proportion of current drinkers did not change among 11- and 13-year-old boys, there was a small but significant decrease among 15-year-old boys. Current alcohol use increased among girls in all age groups.

Socioeconomic differences were seen in both lifetime and current alcohol use. Lifetime alcohol use was more common in boys from high-affluence families in half of the countries and regions and in 18 for girls. On average, current use was higher

Fig. 3. Age- and gender-related patterns in current alcohol consumption and lifetime drunkenness (HBSC average)(%)



Note: no data on current alcohol use were received from Norway (11-year-olds). No data on lifetime drunkenness were received from Denmark (Greenland), Finland (11-year-olds), Norway (11-year-olds), and Serbia and Tajikistan (11- and 13-year-olds).

among adolescents from high-affluence families for both boys (23% high affluence versus 17% low) and girls (22% high versus 18% low).

9% of adolescents reported having experienced drunkenness at least twice in their lifetime, and 7% in the last 30 days. Drunkenness increased with age, with the biggest difference being seen between the ages of 13 and 15. At age 11, 2% of boys and 1% of girls reported having been drunk at least twice in their lifetime. This increased to 5% of 13-year-old boys and girls, and 20% of 15-year-old boys and girls. Variation across countries and regions was wide, ranging from the lowest prevalence of 1% across all age groups to 9% at age 11, 15% at age 13 and 46% at age 15.

Fewer than 5% of 11-year-old adolescents reported drunkenness at least once in the past 30 days, but this rose at age 15 to 16% of boys and 15% of girls. Gender differences in lifetime drunkenness between ages 11 and 15 changed. Gender differences were seen in 13 countries and regions at age 11, with boys showing higher prevalence of lifetime drunkenness than girls in all. At age 13, boys showed higher prevalence of lifetime drunkenness in only four countries and regions and girls in three.

[who.int/europe/initiatives/health-behaviour-in-school-aged-children-\(hbsc\)-study](https://www.who.int/europe/initiatives/health-behaviour-in-school-aged-children-(hbsc)-study)

Ad Council and NHTSA in the US highlight the dangers of buzzed driving

The Ad Council and US Department of Transportation's National Highway Traffic Safety Administration (NHTSA) have launched a new PSA campaign raising awareness about the dangers of buzzed driving, aiming to reach young men between the ages of 21 and 34. The new PSAs is part of the Ad Council and NHTSA's long-running campaign that has been working to prevent alcohol-impaired driving since 1983.

Titled "Your Life Sounds Great," the campaign encourages responsible driving behaviour by highlighting how driving "buzzed" can result in devastating consequences for individuals and

those around them. Using immersive audio and first-person glimpses, the spot uses vignettes of life's simple, beautiful moments to remind viewers how buzzed driving can bring all of those moments to a screeching halt. The campaign's tagline reminds viewers that "Buzzed driving is drunk driving. Don't drive buzzed."

"This campaign supports our life saving mission of preventing tragedies on our roads by increasing awareness of the dangers of drunk driving," said NHTSA Deputy Administrator Sophie Shulman. "This new approach to our messaging will resonate with all audiences and is a powerful reminder to not drive after drinking."

No progress in tackling alcohol harms midway through National Alcohol Strategy

In a mid-point review of the Australia's National Alcohol Strategy, Alcohol Change Australia argues that successive governments have fallen short in addressing the escalating crisis of alcohol harms in the country.

The authors suggest that despite the Strategy's aim to reduce harmful alcohol use by 10% by 2028, there has been little progress towards this goal since its introduction in 2019: alcohol-induced deaths are at their highest rate in a decade (1,742 people in 2022); hospitalisations caused by alcohol have increased over the last decade, with more than 106,000 Australians hospitalised in 2020. around 20% of Australians reported being verbally or physically abused or put in fear due to someone under the influence of alcohol in 2022-23. There has also been no reduction in alcohol-

related motor vehicle crashes or in per capita alcohol consumption over the last decade, with many Australians continuing to drink alcohol at risky levels.

Alcohol Change Australia has called on the Australian Government to address alcohol-caused harm by introducing measures, including protecting the community from alcohol marketing; addressing cheap alcohol; raising awareness of the harms caused by alcohol; supporting alcohol-free pregnancies; and creating healthy public policy free of industry influence.

alcoholchangeaus.org.au/no-progress-in-tackling-alcohol-harms-midway-through-national-alcohol-strategy/

Global wine consumption update

Global wine consumption decreased to its lowest record since 1996, down by 2.6% since 2022, to 221 million hectoliters. This decrease was largely as a result of inflation and high production costs, according to the latest data released by International Organisation of Vine and Wine (OIV).

The decline in global wine consumption has followed a relatively steady trajectory since 2018, partly due to China's decreasing wine consumption each year, which since 2018 has been dropping by an averaging of 2 mhl annually. China's wine consumption fell by 24.7% in 2023, totalling 6.8 mhl, down by 61.36% compared with the consumption volume recorded in 2018 (17.6 mhl).

The broader downturn in global wine consumption, stems primarily from stringent lockdown measures imposed during the COVID-19 pandemic. These restrictions severely affected major wine markets beginning in 2020 and continued to impact them throughout the pandemic. However, 2021 saw a brief resurgence in wine consumption following the easing of pandemic restrictions, the reopening of the hospitality sector, and the return of social gatherings and celebrations, which boosted demand across many countries.

In 2022 geopolitical tensions, particularly the conflict in Ukraine, and subsequent energy crises, disrupted the global supply chain, leading to increased production and distribution costs, causing wine prices to spike and reducing consumer demand.

Amidst this complex economic landscape marked by global inflationary pressures, major wine markets faced notable declines in 2023. In the USA, the largest wine market globally, consumption also decreased by 3.0% in 2023, reaching 33.3 mhl. The EU also recorded a marginal decrease of 1.8% to 107 mhl, which still accounts for 48% of the world's consumption. The largest declines were in Portugal and the Netherlands. In both countries, estimated consumption in 2023 was 9.2% lower than in 2022. Conversely, Japan, the second-largest consumer in Asia, experienced an increase of 2.1% from 2022, reaching 3.2 mhl. This volume is, however, 4.2% below its last five-year average.

Global wine production also experienced sharp falls. In 2023, global wine production is estimated at 237 mhl, marking a significant decrease of nearly 25 mhl (-9.6%) compared to 2022. This represents the lowest volume since 1961 (214 mhl).

oiv.int/news/press

Pernod Ricard launches a new digital campaign: Drink more water

Part of Pernod Ricard's global Sustainability & Responsibility strategy, Good Times from a Good Place, the DRINK MORE WATER campaign, launched internationally three years ago, is back with a second edition.

Built on Pernod Ricard's prevention programme Responsible Party, DRINK MORE WATER is a responsible drinking initiative tackling the issue of binge drinking among young adults. It aims to raise awareness about the risks of overconsumption of alcohol, and to reduce harm at events through the distribution of water.

The first campaign, present in over 60 countries globally both online and on-the-field, DRINK MORE WATER gained over 400 million in reach across Instagram and Facebook, and over 9 million people on the field at festivals, carnivals, student gatherings and events. The second edition will

go one step further. The chosen messaging seeks to strengthen the role of water and its power to reduce alcohol harm. The consequences of excessive drinking are featured in the campaign's images and videos. The message is clear and simple: DRINK MORE WATER BEFORE WTF! Pernod Ricard say that they aim to reaching 1 billion young adults digitally by the end of 2025.

drinkmore-water.com.



**RESPONSIBLE LIFESTYLE
BECAUSE SMART PEOPLE
REMAIN RESPONSIBLE**

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 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 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.

AIM Social, Scientific and Medical Council

Professor R. Curtis Ellison MD - Chairman,
Professor of Medicine, Section of Preventive Medicine & Epidemiology, Boston University School of Medicine, Boston, MA, US

Henk Hendriks PhD - Co-director
Independent consultant, Netherlands

Creina S. Stockley PhD MBA - Co-director
Independent consultant and Adjunct Senior Lecturer in the School of Agriculture, Food and Wine at the University of Adelaide, Australia

Professor Alan Crozier, Research Associate, Department of Nutrition, UC Davis, US

Harvey Finkel MD, Clinical Professor of Medicine (Oncology and Haematology), Boston University School of Medicine, US

Professor Adrian Furnham, Professor in Psychology and occupational psychology, University College London, UK

Giovanni de Gaetano, MD, PhD, President, IRCCS Istituto Neurologico Mediterraneo NEUROMED, Pozzilli, Italy

Tedd Goldfinger FACC, FCCP, President, Desert Heart Foundation, Tucson, University of Arizona, US

Lynn Gretkowski MD, Obstetrics and Gynaecology, Faculty member Stanford University, US

Professor Dwight B. Heath, Anthropologist, Professor Emeritus of Anthropology, Brown University, US

Professor OFW James, Emeritus Professor of Hepatology, Newcastle University, UK

Ellen Mack MD, Oncologist

Professor JM Orgogozo, Professor of brain science, Institut de Cerveau, University of Bordeaux, France

Stanton Peele PhD, Social Policy Consultant, US

Prof Susan J van Rensburg MSc, PhD, Emeritus Associate Professor in the Division of Chemical Pathology, Tygerberg Hospital, University of Stellenbosch, South Africa

Dr Erik Skovenborg, Scandinavian Medical Alcohol Board

Arne Svilaas MD, PhD, Chief Consultant, Lipid Clinic, Oslo University Hospital, Oslo, Norway.

Professor Pierre-Louis Teissedre, PhD, Faculty of Oenology–ISVV, University Victor Segalen Bordeaux, France

Dag Thelle MD, PhD, Senior Professor of Cardiovascular Epidemiology and Prevention, University of Gothenburg, Sweden; Senior Professor of Quantitative Medicine at the University of Oslo, Norway

David P van Velden MD, Dept of Pathology, Stellenbosch University, Stellenbosch, South Africa

David Vauzour PhD, Senior Research Associate, Department of Nutrition, Norwich Medical School, University of East Anglia, Norwich, UK