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Wine consumption, Mediterranean diet, and cardiovascular risk in two Spanish cohorts

The benefits of the Mediterranean diet (MedDiet) are well established. However, one component, wine, remains controversial. A study published in the European Heart Journal, assessed the association between MedDiet (with or without wine consumption) and major cardiovascular disease (CVD) or all-cause mortality.

The PREDIMED trial included 7,447 high-risk participants. Adherence to MedDiet was measured using a validated 14-item questionnaire, including one item on wine (cut-off: seven glasses/week). The CVD events were recorded over a 4.8-year follow-up, while all-cause mortality was tracked for 17 years. A younger Spanish cohort (the SUN project), including 23,133 participants followed up for 22 years, was also evaluated.

In PREDIMED, compared with poor compliers with MedDiet (excluding wine), good compliers (excluding wine), had a multivariable-adjusted hazard ratio (HR) of 0.84 [95% confidence interval (CI) 0.61–1.15] for CVD. For good compliers with MedDiet (including wine), the HR for CVD was 0.55 (95% CI 0.36–0.83). For all-cause mortality, MedDiet compliers (excluding wine) had HR of 0.77 (95% CI 0.68–0.87), which was 0.67 (95% CI 0.57–0.78) for MedDiet compliers (including wine). In exploratory dose–response analyses, reduced risk for death was not present in PREDIMED participants who drank three or more glasses of wine/day. Additionally, analyses least vulnerable to threats of abstainer bias were not significant and neither were multiplicative interaction terms for the wine item in the questionnaire. In the SUN cohort, no significant associations were observed between MedDiet compliance, wine, and CVD. However, for all-cause mortality, the HR was 0.94 (95% CI 0.71–1.26) for MedDiet compliers (excluding wine) and 0.54 (95% CI 0.28–1.04) for MedDiet compliers (including wine). When pooling both cohorts, wine consumption within the MedDiet was associated with lower all-cause mortality.

In PREDIMED, moderate wine consumption, as part of the MedDiet, appeared to be associated with lower mortality and CVD risk. Some non-significant associations and interactions advise caution in interpretation of these findings.

Source: Martínez-González MA, Bes-Rastrollo M, Sayon-Orea C, Ruiz-Canela M, Timiraos J, Toledo E, Sorlí JV, Salas-Salvado J, Gómez-Gracia E, Fiol M, Shröder H, Lapetra J, Serra-Majem L, Pintó X, Barbería-Latasa M, Ros E, Babio N, Ortega C, de la Torre R, Lamuela-Raventos RM, Estruch R, Wine consumption, Mediterranean diet, and cardiovascular risk in two Spanish cohorts, European Heart Journal, Volume 47, Issue 27, 14 July 2026, Pages 3591–3606, <https://doi.org/10.1093/eurheartj/ehaf1081>

Alcohol consumption and cognitive function: A systematic review and dose–response meta-analysis of 20 cohort studies

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Abstract

Aims: Amid ongoing debate on whether low-to-moderate alcohol consumption reduces cardiovascular risk, studies examining the association between alcohol consumption and cognitive function have reported inconsistent results. To quantitatively assess this association, we conducted a dose–response meta-analysis of cohort studies, including stratified analyses by potential modifiers and study-level characteristics.

Methods: Eligible studies were identified by searching PubMed, Embase and Web of Science for articles published through 13 June 2025. Studies investigating major cognitive impairment were excluded. Pooled standardized mean differences (SMDs) were calculated using a random-effects model.

Results: We identified 20 studies including 78 657 participants. A weak inverted J-shaped association between alcohol consumption and cognitive function was observed, but the test for nonlinearity did not reach statistical significance (P for nonlinearity = 0.06). Compared with no alcohol consumption, heavy alcohol consumption (≥ 67 g/day) was inversely associated with cognitive function [SMD at 67 g/day = -0.18 , 95% confidence interval (CI) = -0.36 to -0.00 ; 20 studies, 78 657 participants], while the evidence for a protective effect of low-to-moderate alcohol intake remained uncertain. In studies that accounted for baseline cognition, alcohol consumption of ≥ 28 g/day was associated with lower cognitive function (SMD at 28 g/day = -0.08 , 95% CI = -0.15 to -0.01 ; 9 studies, 23 385 participants), whereas the association remained uncertain in studies that did not account for baseline cognition (SMD at 28 g/day = 0.13 , 95% CI = -0.05 to 0.32 ; 11 studies, 55 272 participants) (P for interaction < 0.01). By region, alcohol consumption of ≥ 33 g/day was associated with lower cognitive function in studies conducted in the United States (SMD at 33 g/day = -0.11 , 95% CI = -0.22 to -0.01 ; 7 studies, 25 538 participants), whereas the association remained uncertain in studies conducted in Europe (SMD at 33 g/day = 0.07 , 95% CI = -0.08 to 0.22 ; 10 studies, 44 235 participants) (P for interaction = 0.02).

Conclusions: A review of current evidence shows that heavy alcohol consumption (≥ 67 g/day) is inversely associated with cognitive function, while the evidence for a protective effect of low-to-moderate alcohol intake remains uncertain.

The inverse association is stronger in studies that accounted for baseline cognition, with the alcohol intake threshold (28 g/day) for lower cognitive function close to the drinking guideline limits, although these findings should be interpreted cautiously because of the limited number of studies.

ISFAR Summary

A new study by Choi and Je (2026) analysed 20 studies involving almost 79,000 people to examine whether alcohol consumption is linked to cognitive function, including memory and other aspects of thinking. The researchers found that heavy drinking was associated with poorer cognitive function, while the evidence about low-to-moderate drinking was less clear. The analysis was carefully conducted and included several checks to test whether the findings were consistent.

However, the analytical results should be interpreted with caution. The studies differed in how they measured cognitive function and alcohol consumption, and most relied on people's reports of how much they drank at a single point in time. Also, some people may have reduced or stopped drinking because their health or cognitive function was already declining. Importantly, given the limitations of their analysis, the study does not establish a specific level of alcohol consumption at which cognitive harm begins.

Background

Cognitive function may be impaired and may be assessed as mild cognitive impairment (MCI), a syndrome characterised by cognitive decline that exceeds expectations for an individual's age and education level but does not substantially interfere with daily activities. Symptoms include memory problems, difficulty concentrating, language problems and loss of overview. The global prevalence of MCI among community adults aged 50 years and older is estimated at around 15% and increases with age and decreases with education level (Bai et al., 2022).

MCI is not a specific disease, but an umbrella term for cognitive decline with various underlying causes. It may be an early stage of dementia or be caused by a vitamin deficiency (such as

vitamin B12), thyroid disorders, severe anaemia, medication side effects, or psychological factors such as burnout, long-term stress, or severe depression (DeCarli, 2003).

In a recent meta-analysis of 89 studies, the risk of conversion from MCI to dementia was estimated at around 40% in clinical studies and around 25% in population-based studies, with Alzheimer's dementia the most common outcome. For many people, symptoms remain stable for years. Stability rates were approximately 50% across both clinical and population studies. If the underlying cause is depression or a vitamin deficiency, symptoms can fully reverse with appropriate treatment. Reversion rates ranged from 9% to 28% across studies (Salemme et al., 2025).

A systematic review highlights the value of non-pharmacological interventions, particularly cognitive training and physical exercise, as a primary means of preserving cognitive function (Cepeda-Pineda et al., 2025). Moreover, a few lifestyle interventions have shown that lifestyle adjustment works (Ornish et al., 2024, Choi et al., 2025; Xu et al., 2021). Unfortunately, the role of alcohol consumption or its management was not addressed in these clinical trials.

MCI prevention may overlap significantly with dementia prevention. The Lancet Commission on dementia prevention (Livingston et al., 2024) has identified the following risk factors for dementia: lower education, hearing loss, hypertension, smoking, obesity, depression, physical inactivity, diabetes, traumatic brain injury, air pollution, and social isolation. The Commission also mentioned alcohol consumption and concluded that reducing excessive alcohol intake or maintaining sustained light drinking is associated with a lower dementia risk than excessive alcohol intake.

In a recent ISFAR review of two studies by Topiwala et al. (2025) and Chen et al. (2025), associations between alcohol consumption and dementia risk were discussed. The review highlighted the divergence between observational evidence (Chen et al., 2025) and genetic evidence obtained by Mendelian randomisation (Topiwala et al., 2025) and concluded that moderate drinking may appear protective in observational cohorts. Mendelian randomisation has major limitations because the genetic variants used may explain only a small percentage (< 1%) of the variability in alcohol consumption (<https://alcoholresearchforum.org/critique-300/>).

Choi and Je (2026) quantitatively assessed the association between alcohol consumption and cognitive function in this systematic review and dose-response meta-analysis of 20 cohort studies, including some 80,000 participants and a median follow-up of seven years.

The review has several methodological strengths. It synthesises prospective cohort evidence through a systematic search of three major databases, was prospectively registered in PROSPERO and reported according to PRISMA, and employed independent study selection, data extraction and quality assessment. The authors also appropriately explored both linear and non-linear dose-response relationships and conducted sensitivity and stratified analyses, including an examination of baseline cognition as a potential source of reverse causation.

Critique

The title of Choi and Je's (2026) paper positions cognitive function as a health outcome, yet the authors do not clearly define this concept. In their introduction, mild cognitive impairment (MCI) is characterised, and its prevalence is described. In the materials and methods section, the outcome may be inferred from their inclusion criterion: "studies in which cognitive function scores or MCI were the outcomes of interest, excluding...etc." This description leaves unclear which cognitive function scores were used and why. In their paragraph on selection of cognitive outcomes, the authors state that when a study reported multiple effect estimates across multiple cognitive domains, they extracted only one estimate per study, prioritising in an order motivated by the negative effects associated with moderate alcohol consumption. Such an unclear selection procedure may contribute to bias, as may the large variation in the function scores used, which may have contributed to the high heterogeneity observed (I² of about 80%).

A further limitation concerns the reference group. The included studies were required to include a "none or rarely" drinking category, but this does not necessarily represent lifetime abstainers. In particular, former drinkers may have been grouped with abstainers or infrequent drinkers, potentially introducing 'sick-quitter' bias if individuals reduced or stopped drinking because of emerging health or cognitive problems. The authors collected information on former drinkers,

but insufficient data were available to examine this issue in stratified analyses. This is important because the choice and composition of the reference group may materially influence the apparent protective association observed at lower levels of alcohol consumption.

Alcohol exposure was also poorly characterised longitudinally. All included studies relied on self-reported alcohol consumption, and most assessed it at a single time point. These measures may not adequately capture long-term drinking patterns, cumulative exposure, changes in consumption, cessation, or periods of heavy or binge drinking. Consequently, the dose used in the meta-analysis generally reflects current or recent consumption rather than long-term alcohol exposure. This limitation is particularly relevant to cognitive outcomes, where the timing and duration of exposure may be important.

There is also uncertainty in converting reported alcohol consumption to grams per day. Where standard drink equivalents were not reported, the authors obtained them from related studies or from studies conducted in a similar region and period. They also used category midpoints where means or medians were unavailable, and, importantly, assumed that an open-ended highest category had the same width as the preceding category. Thus, a category reported as ">2 drinks/day", for example, could be represented as >2–3 drinks/day. These assumptions may introduce exposure misclassification, particularly at higher consumption levels, and could influence both the magnitude and shape of the estimated dose–response relationship.

The paper's conclusion states that heavy alcohol consumption (more than 67 g/day) is inversely associated with cognitive function, which is not surprising in itself. In addition, the paper concludes that the protective effect of low-to-moderate alcohol consumption remains uncertain. This latter conclusion is, strictly speaking, consistent with these results, but rests solely on the borderline non-significance of non-linearity, which means linearity is assumed and a J-shaped association is not considered. On the other hand, Figure 2 of the paper shows a clear inverted J-shape for daily alcohol consumption, suggesting a positive or at least a non-negative effect of low-to-moderate alcohol consumption.

The inverted J-shape virtually disappears when baseline cognition is accounted for. Table 2 also

shows that accounting for baseline cognition significantly interacts with the calculated standardised mean differences in cognitive function. However, the text is unclear about which studies were corrected for baseline cognitive function and, importantly, which correction was used. The authors appear to combine different approaches, including excluding participants with baseline cognitive impairment and statistically adjusting for baseline cognition, within a single subgroup. These approaches are not necessarily equivalent and may address reverse causation differently. Because baseline cognition significantly modified the observed association (P for interaction <0.01), interpreting this finding requires more detail on the individual studies and the specific approaches used.

Other potential sources of residual confounding also warrant consideration. The Lancet Commission on dementia prevention (Livingston et al., 2024) estimated that social isolation late in life contributes 5% to the total of 45% of preventable dementias. Other major contributors to dementia risk include physical and cognitive activity, education, and air pollution, among other factors not corrected for in recent cohort studies and meta-analyses. Choi and Je (2026) also acknowledge that co-occurring substance use was not accounted for. These factors further complicate the interpretation of associations between alcohol consumption and cognitive performance.

Choi and Je (2026) indicate that their results conflict with some previous meta-analyses. For instance, the meta-analysis by Brennan et al. (2020) reports an inverted J-shaped association between alcohol consumption and cognitive function, but the authors conclude that "Major limitations in the design and reporting of included studies made it impossible to discern if the effects of 'lower' levels of alcohol intake are due to bias. Further review of the evidence is unlikely to resolve this issue without meta-analysis of individual patient data from cohort studies that address biases in the selection of participants and classification of alcohol consumption." Cognitive function may be an outcome parameter that is too difficult to evaluate in a reproducible, robust, and standardised way.

This may leave us with the clinically relevant outcome of reduced or declining cognitive function, namely dementia. Recent meta-analyses

on the association between alcohol consumption and dementia do show a J-shaped relationship (Zhang et al., 2026; Chen et al., 2025), whereas The Lancet Commission on dementia prevention (Livingston et al., 2024) estimated that excessive alcohol consumption contributed 1% to the total of 45% of preventable dementias.

In conclusion, this meta-analysis investigated the association between alcohol consumption and cognitive function but does not resolve the substantial uncertainty surrounding the relationship at low-to-moderate levels of consumption. The findings remain difficult to interpret because of heterogeneity in cognitive outcomes, reference groups, alcohol exposure assessment, and approaches to addressing reverse causation. Concurrent cohort studies need improved participant assessments and standardised, robust markers of cognitive function before meaningful conclusions can be drawn.

Specific member comments

Forum member Ellison thought that “the authors did a good job in analysing the data that they had in an attempt to judge the effects of alcohol on cognitive function. However, the data they used was so heterogeneous, coming from many different populations and cultures, that it is not possible to know to what population, if any, their results may apply.

As our Forum has stated in the past, the effects of alcohol on health depend on many factors. These include genetic and lifestyle factors, such as drinking habits: the type of beverage and the pattern of consumption, especially whether it is with or without food. Using only the number of drinks self-reported by an individual (usually for a single period of time), without knowing what beverage they were consuming and especially how they were consuming it, does not allow an estimate of the net health effects of alcohol.

Further, I was struck by the overwhelming number of p-values quoted in the paper and the presumption that they were used to decide whether a relation was true or false. It is increasingly recognised, as initiated by Kenneth Rothman (Rothman, 2017) and well described by Geoff Cumming (Cumming G, 2018), that p-values have limitations. Many other leading statisticians around the world have endorsed this view, stating that describing the relation of an exposure as beneficial or harmful based only on

p-values is inadequate for interpreting data. More useful information comes from providing point estimates and confidence intervals. In the present paper, the estimated relation between alcohol and cognition in Figure 2 provides clear evidence of striking differences in the effects of alcohol according to dose, supporting a J-shaped curve. In their Discussion, the authors provide very good insight into the strengths and weaknesses of their results, but do not mention this aspect of data interpretation.”

Forum member Harding states that he “struggled to generate any enthusiasm for this paper. The first sentence of the Abstract says, “Amid ongoing debate on whether low to moderate alcohol consumption reduces cardiovascular risk, studies examining the association between alcohol consumption and cognitive function have reported inconsistent results.” The first sentence of the Conclusions says, “A review of current evidence shows that heavy alcohol consumption.... is inversely associated with cognitive function, while the evidence for a protective effect of low to moderate alcohol intake remains uncertain.” In other words, we didn’t know what the effect of low to moderate alcohol consumption has on cognitive function, and after this meta-analysis, we still don’t know. So, what is the point of publishing this? The only point seems to be that we are able to conduct a meta-analysis, so that is what we did.

There is actually quite a lot of evidence that indicates that low to moderate alcohol consumption improves cognitive function. Therefore, the next questions to ask are, ‘Is this observed effect real?’ ‘Is there a mechanism by which this could happen?’, and if so, ‘Does it happen?’ We need to design experiments to test this hypothesis, not pretend that more epidemiology can provide the answers.

In an excerpt from her full commentary on Choi and Je (2026), **Forum member Romano** suggests that “Choi and Je (2026) is methodologically rigorous as a systematic review, yet the strength of its conclusions is constrained by a central conceptual issue: it attempts to summarise, through a single dose–response relationship, a phenomenon—cognitive function—that is multidimensional, dynamic, and strongly multicausal.

A critical distinction must be made between a statistically permissible conclusion and a stronger clinical or causal interpretation. The overall

analysis suggested a weak inverted J-shaped pattern, but the formal test for non-linearity did not reach conventional statistical significance ($P = 0.061$). Therefore, strictly speaking, the study does not provide statistically conclusive evidence for an overall non-linear J-shaped relationship.

Likewise, at low and moderate alcohol-consumption levels, confidence intervals generally included the null value. These findings do not demonstrate a protective cognitive effect of low-to-moderate drinking.

At higher levels of consumption, the analysis identified an inverse association between alcohol intake and cognitive function. However, even this result must be interpreted by distinguishing statistical significance from effect magnitude and causality. The observed effect size was relatively small and was derived from heterogeneous observational data.

The authors' formal conclusion is, overall, appropriately cautious: they state that heavy alcohol consumption is associated with poorer cognitive function and that evidence for a protective effect of low-to-moderate intake remains uncertain. This conclusion is broadly consistent with the results as long as it is interpreted explicitly as an association rather than a causal effect.

A more debatable aspect of the Discussion is the emphasis placed on an apparent threshold of approximately 28 g/day in studies that accounted for baseline cognition. The authors note that this level is close to some low-risk drinking guideline limits and use this observation to support a cautious interpretation of such recommendations.

However, 28 g/day should not be understood as an established neurotoxic threshold. It emerged from a subgroup comprising only nine studies and 23,385 participants, and substantial heterogeneity remained. More accurately, it represents the approximate point on the modeled dose-response curve at which the confidence interval in that subgroup no longer included the null value.

Accordingly, the study does not establish a biological boundary at 28 g/day. Interpreting this value as a precise causal threshold would exceed the strength of the available evidence.

Thus, this meta-analysis provides a rigorous statistical synthesis of the available observational evidence, but it does not justify reducing a complex epidemiological relationship to a

simple causal association between grams of alcohol consumed and cognitive function. The substantial heterogeneity across studies, the multidimensional and multicausal nature of cognition, predominantly single-time-point and self-reported alcohol assessment, heterogeneity of cognitive instruments, residual confounding, survival bias, and the possibility of reverse causation all limit causal interpretation of the dose-response curve.

In particular, the apparent inverted J-shaped relationship did not reach statistical significance in the overall analysis and does not provide convincing evidence for a protective effect of low-to-moderate alcohol consumption. The association between high alcohol intake and poorer cognitive function is more consistent, but both its magnitude and the precise exposure threshold remain uncertain.

Therefore, the study's general conclusion aligns reasonably well with its results, provided it remains framed in terms of association. Extrapolating to causal thresholds, neuroprotection, or individualised drinking recommendations would go beyond what this meta-analysis can establish.

A final methodological point worth emphasising is that the large, combined sample of 78,657 participants may create an impression of very strong evidence, but in observational meta-analysis, sample size does not automatically compensate for heterogeneity, residual confounding, exposure misclassification, or biases shared across the primary studies. The principal strength of this article lies in the precision and scope of its synthesis; its principal limitation lies in the causal interpretation of heterogeneous observational evidence."

The full commentary by Forum member Romano is provided at the end of this ISFAR critique.

Forum member Skovenborg focuses on the reverse causation bias. "The Whitehall II study found clear indications of reverse causation bias in studies of physical activity and dementia risk and did not find similar indications in studies of moderate alcohol consumption and dementia risk (Sabia et al. 2018).

Alcohol consumption trajectories from midlife to early old age showed long-term abstinence (1.74, 1.31 to 2.30), decrease in consumption (1.55, 1.08 to 2.22), and long-term consumption >14 units/week (1.40, 1.02 to 1.93) to be associated with a higher risk of dementia compared with long-

term consumption of 1-14 units/week. Measures of alcohol consumption were the mean from three assessments between 1985/88 and 1991/93 (midlife), categorised as abstinence, 1-14 units/week, and >14 units/week; 17-year trajectories of alcohol consumption based on five assessments of alcohol consumption between 1985/88 and 2002/04.

Multistate models suggested that the excess risk of dementia associated with midlife abstinence was partly explained by cardiometabolic disease over the follow-up, as the hazard ratio of dementia in abstainers without cardiometabolic disease was 1.33 (0.88 to 2.02) compared with 1.47 (1.15 to 1.89) in the entire population.

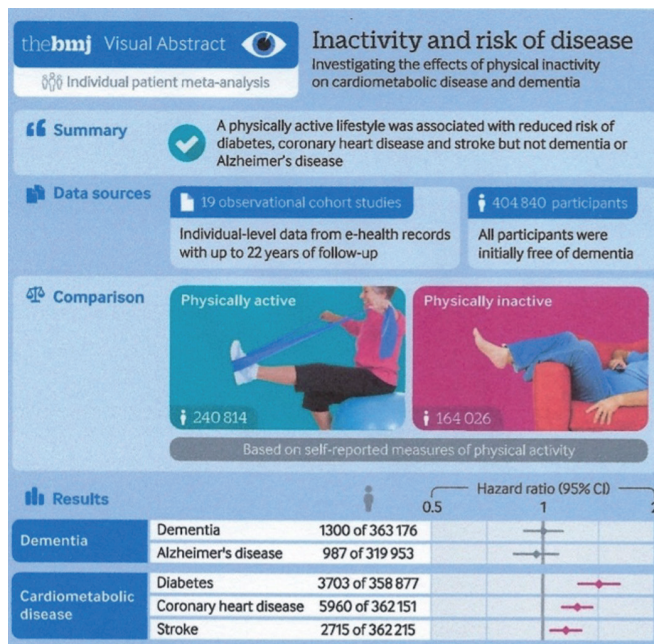
The authors investigated and mitigated the reverse causation bias through several key methods and findings: 1) The 17-Year Trajectory Analysis and 2) Time-Lag and Sensitivity Analyses. However, Sabia et al. (2017) found indications of reverse causation bias due to a decline in physical activity levels in the preclinical phase of dementia.

Mixed-effects models found no association between physical activity and subsequent 15-year cognitive decline. Similarly, Cox regression found no association between physical activity and dementia risk over an average 27-year follow-up (hazard ratio in the "recommended" physical activity category 1.00, 95% confidence interval 0.80 to 1.24). For trajectories of hours/week of total, mild, and moderate-to-vigorous physical activity in people with dementia compared with those without dementia (all others), no differences were observed between 28 and 10 years before dementia diagnosis. However, physical activity in people with dementia began to decline up to nine years before diagnosis (difference in moderate-to-vigorous physical activity -0.39 hours/week; $P=0.05$), and the difference became more pronounced (-1.03 hours/week; $P=0.005$) at diagnosis.

In conclusion, this study found no evidence of a neuroprotective effect of physical activity. Previous findings showing a lower risk of dementia among physically active people may be attributable to reverse causation, that is, a decline in physical activity levels during the preclinical phase of dementia.

In a meta-analysis by Kivimäki et al. (2019), analyses that addressed bias due to reverse causation

found no association between physical inactivity and all-cause dementia or Alzheimer's disease. The study population comprised 404 840 people (mean age 45.5 years, 57.7% women) who were initially free of dementia, had a measurement of physical inactivity at study entry, and were linked to electronic health records. In these analyses, physical inactivity was not associated with all-cause dementia or Alzheimer's disease, although a subgroup of physically inactive individuals who developed cardiometabolic disease showed an indication of excess dementia risk.



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

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Full commentary provided by Forum member Romano on Choi and Je (2026)

“Choi et al. (2026) is methodologically rigorous as a systematic review, yet the strength of its conclusions is constrained by a central conceptual issue: it attempts to summarise, through a single dose–response relationship, a phenomenon—cognitive function—that is multidimensional, dynamic, and strongly multicausal.

A major strength of the study is its synthesis of 20 cohort studies comprising 78,657 participants and its use of random-effects models, dose–response modelling, tests for non-linearity, subgroup analyses, and sensitivity analyses. The review was also prospectively registered in PROSPERO and conducted in accordance with PRISMA recommendations. These features enhance transparency and methodological reproducibility.

Nevertheless, a meta-analysis increases the statistical precision of the available evidence but does not necessarily increase its causal validity. When the primary studies are observational and contain residual confounding, exposure misclassification, differences in outcome measurement, and selection biases, meta-analysis cannot eliminate these limitations. It may provide a statistically more precise estimate of an association that nevertheless remains

methodologically biased. This distinction is essential when interpreting the findings of the present study.

Effectiveness and limits of the meta-analysis: This meta-analysis is effective for answering a relatively restricted epidemiological question: what average association is observed across published cohort studies between alcohol consumption and measures of cognitive function? It is considerably less effective for answering a causal question such as how much cognitive decline is caused by alcohol and at what precise dose such an effect begins.

This distinction matters because heterogeneity in the principal analysis was high ($I^2 = 78.4\%$ in the non-linear model). Although heterogeneity decreased in some subgroup analyses, it remained moderate to substantial. Accordingly, a fundamental conceptual question arises: to what extent does a single pooled dose–response curve retain biological meaning when it combines substantially different populations, exposure definitions, follow-up periods, and cognitive outcomes?

The included studies differed markedly in follow-up duration, geographic setting, alcohol-consumption categories, and cognitive assessment methods. The highest alcohol-consumption category varied substantially between studies. In addition, alcohol intake had to be standardised to grams per day, and when mean or median values were unavailable, midpoint values were used. For open-ended upper categories, the investigators assumed a category width equivalent to that of the adjacent category.

Thus, the statistical sophistication of restricted cubic spline modelling should not be equated with greater biological certainty. A model may be statistically advanced while remaining fundamentally limited by the comparability and validity of the underlying data.

Cognitive function as a multicausal and multidimensional outcome: One of the most important conceptual limitations concerns the nature of cognition itself. Cognitive function is not a single biological variable. It encompasses several partially distinct domains, including memory, attention, processing speed, executive function, language, and visuospatial abilities.

The study recognises this multidimensionality, yet when individual studies reported several

cognitive domains, the meta-analysis selected a single estimate per study, prioritising global cognitive function, followed by attention/processing speed and memory. Although this approach reduces statistical dependence between multiple outcomes from the same cohort, it also compresses heterogeneous neuropsychological constructs into a simplified summary measure.

Moreover, cognitive performance is shaped by a complex network of determinants, including age, educational attainment and cognitive reserve, genetic susceptibility such as APOE genotype, cardiovascular and metabolic disease, hypertension, diabetes, depression, smoking, physical activity, diet, social engagement, socioeconomic circumstances, medication use, and other psychoactive substances. Alcohol exposure operates within this broader causal network rather than acting as an isolated determinant.

Although the included cohort studies adjusted for several covariates, adjustment was not uniform. The authors acknowledge that insufficient data prevented more detailed analyses by beverage type, ancestry, diet quality, APOE genotype, cardiometabolic disease, former-drinker status, and repeated assessments of alcohol intake. Consequently, residual confounding remains an important limitation.

From a conceptual perspective, alcohol should therefore be interpreted as one exposure within a complex causal system rather than as a single independent determinant of cognitive function. Statistical adjustment can reduce confounding for measured variables, but it cannot fully reconstruct the underlying causal structure.

Measurement of alcohol exposure: An additional limitation concerns how alcohol consumption was measured. In all included studies, alcohol intake was self-reported, and in most studies, it was assessed at a single time point. This approach creates substantial potential for exposure misclassification and may not reflect long-term cumulative exposure.

This issue is particularly important in cognitive ageing. Alcohol intake measured at 60 or 70 years of age may not adequately represent drinking patterns over the preceding decades. Two individuals currently consuming 20 g/day may have substantially different exposure histories:

one may have maintained that level for decades, whereas another may have recently reduced consumption after many years of heavier drinking.

Accordingly, grams per day estimates average current quantity rather than fully capturing neurobiological alcohol exposure. This metric does not adequately capture lifetime cumulative exposure, drinking pattern, episodic heavy drinking, periods of abstinence, changes over time, or necessarily beverage type. These dimensions may be highly relevant to neurocognitive outcomes.

Abstainers, former drinkers, and reverse causation: Choosing abstainers as the reference group creates another important interpretive challenge. Individuals developing cognitive impairment may reduce or discontinue alcohol consumption and subsequently be classified as abstainers. The authors recognise this potential source of reverse causation and report that only four included studies explicitly considered former drinkers.

This is highly relevant to the apparent inverted J-shaped curve. Better cognitive performance among light or moderate drinkers relative to non-drinkers cannot be interpreted as evidence of a neuroprotective effect of alcohol. Part of the observed difference may arise from reverse causation, the “sick-quitter” phenomenon, or systematic social, economic, nutritional, and health-related differences between moderate drinkers and abstainers.

Importantly, when baseline cognition was taken into account, the apparent cognitive advantage associated with low alcohol consumption was substantially attenuated, and the maximum positive standardised mean difference remained non-significant. This finding weakens any interpretation of a protective effect of low-to-moderate alcohol consumption.

Relationship between the results and the conclusions: A critical distinction must be made between a statistically permissible conclusion and a stronger clinical or causal interpretation. The overall analysis suggested a weak inverted J-shaped pattern, but the formal test for non-linearity did not reach conventional statistical significance ($P = 0.061$). Therefore, strictly speaking, the study does not provide statistically conclusive evidence for an overall non-linear J-shaped relationship.

Likewise, at low and moderate alcohol-consumption levels, confidence intervals generally included the null value. These findings do not demonstrate a protective cognitive effect of low-to-moderate drinking.

At higher levels of consumption, the analysis identified an inverse association between alcohol intake and cognitive function. However, even this result must be interpreted by distinguishing statistical significance from effect magnitude and causality. The observed effect size was relatively small and was derived from heterogeneous observational data.

The authors' formal conclusion is, overall, appropriately cautious: they state that heavy alcohol consumption is associated with poorer cognitive function and that evidence for a protective effect of low-to-moderate intake remains uncertain. This conclusion is broadly consistent with the results as long as it is interpreted explicitly as an association rather than a causal effect.

Interpretive concerns in the Discussion: A more debatable aspect of the Discussion is the emphasis placed on an apparent threshold of approximately 28 g/day in studies that accounted for baseline cognition. The authors note that this level is close to some low-risk drinking guideline limits and use this observation to support a cautious interpretation of such recommendations.

However, 28 g/day should not be understood as an established neurotoxic threshold. It emerged from a subgroup comprising only nine studies and 23,385 participants, and substantial heterogeneity remained. More accurately, it represents the approximate point on the modelled dose-response curve at which the confidence interval in that subgroup no longer included the null value.

Accordingly, the study does not establish a biological boundary at 28 g/day. Interpreting this value as a precise causal threshold would exceed the strength of the available evidence."

Associations of alcohol consumption and obesity with diabetes risk

A study examined whether the independent and joint effects of obesity and alcohol consumption on diabetes risk differ when exposures are assessed at baseline or as time-varying variables, and whether interaction patterns vary across multiplicative and additive scales in an Asian prospective cohort.

In total, 7817 participants aged ≥ 40 years without diabetes at baseline (2001-2002) were followed until 2017-2018, and the associations of obesity and alcohol consumption with incident diabetes and their interactions were assessed.

Obesity and high alcohol consumption (≥ 30 g/day) were consistently associated with incident diabetes across all analyses, with stronger associations observed in the time-varying models. People with obesity had approximately 91% higher risk of developing diabetes, while those who drank 30 grams or more of alcohol per day had a 23% higher risk, compared with their respective reference groups.

Associations for low-to-moderate alcohol consumption were weaker, and were statistically significant only on the additive scale. Researchers also examined whether combining obesity and alcohol consumption increased diabetes risk

beyond the effects of each factor separately. They found that obesity and alcohol consumption did not appear to multiply each other's effects on diabetes risk. In some analyses, the combined risk was lower than would be expected if the separate increases in risk were simply added together. However, among people with obesity, low-to-moderate alcohol consumption was linked to little additional diabetes risk compared with the relevant reference groups, particularly when researchers considered changes in weight and drinking habits over time.

The study suggests that obesity and heavy alcohol consumption are both important risk factors for developing diabetes. However, combining obesity with alcohol consumption did not appear to increase diabetes risk as much as might be expected from adding their individual effects together. Overall, the findings highlight the importance of maintaining a healthy weight and avoiding heavy alcohol consumption to help reduce diabetes risk.

Source: Yoon J, Jeon S, Park B. Baseline and longitudinal joint associations of alcohol consumption and obesity with diabetes risk: evaluating multiplicative and additive interactions. *Diabetologia*. 2026 Oct;69(10):2798-2809. <https://doi.org/10.1007/s00125-026-06790-7>

Alcohol-attributable cancer mortality in the United States, 1990–2023: a secondary analysis of Global Burden of Disease data

Jani, C.T., Edwards, K., Sharma, R., Jani, R.T., Sbihi, A.A. Noy, J., Chedid, G., Kareff, S., Shalhoub, J., Saliccioli, J., Watson, D.C., Chauhan, A., Rodriguez, E., Lopesa, G. *The Lancet Regional Health – Americas* (2026) 101599, in press <https://doi.org/10.1016/j.lana.2026.101599>

Abstract

Background: Alcohol consumption is known to be a significant risk factor for cancer. In 2025, the US Surgeon General recommended adding cancer risk warning labels to alcoholic beverages, emphasizing the need for increased awareness. However, national-level data describing long-term trends in alcohol-attributable cancer mortality, including variation by age, sex, and geographic region, remain limited. This study aims to evaluate trends in alcohol-attributable cancer mortality in the USA.

Methods: This was a population-based observational trend analysis using data from the Global Burden of Disease database. We analysed age-standardized mortality rates (ASMRs) and the percentage of ASMR attributable to heavy alcohol use—defined as consumption exceeding the theoretical minimum risk exposure level, in the USA from 1990 to 2023. We evaluated ASMR for all cancers combined, followed by ten specific cancers. Results (per 100,000 population) were stratified by sex, location (50 states and Washington DC), and age-groups (20–54, 55 years and older). Joinpoint regression was performed using Monte Carlo permutation testing to select the optimal model; EAPCs were reported with 95% confidence intervals and two-sided p values. All rates are reported per 100,000 population.

Results: Alcohol-attributable cancer deaths in the USA doubled from 1990 (11,361) to 2023 (23,126). Mortality rates were higher in the 55 years and older age-group (19.2; 95% CI, 12.8–28.7) versus 20–54 years (2.4; 1.4–3.4), and in males (6.4; 3.8–9.7) versus females (2.1; 1.4–3.0). The percentage of mortality attributable to alcohol increased across most cancer types, age groups, and sexes, with liver cancer demonstrating the greatest increase in alcohol attributable (113.9%). In 2023, liver (12.7; 11.2–14.4) and breast (2.4; 0.9–5.9) cancers had the highest alcohol related mortality rates in 55 years and older males and females, respectively; in ages 20–54, colorectal (0.9; 0.4–1.4) in males and breast (0.9; 0.5–1.4) in females were highest. State-wise, the District of Columbia recorded the highest (M:

9.8; 6.0–14.1; F: 3.5; 2.2–5.2), while Utah had the lowest (M: 3.9; 2.4–5.9; F: 1.4; 0.9–2.0) ASMR.

Interpretation: Alcohol-attributable cancer mortality has increased in the USA, with a disproportionate burden observed in males and 55 years and older individuals. Our findings highlight the critical need for targeted prevention efforts and increased awareness to address the rising impact of alcohol consumption on cancer-related mortality.

ISFAR Summary

Jani et al. (2026) in *The Lancet* aimed to analyse alcohol-attributable cancer deaths across cancer types in the USA from 1990 to 2023 using Global Burden of Disease (GBD) data. Specifically, the authors intended to evaluate trends in national-level alcohol-attributable cancer mortality.

The authors report a substantial increase in the absolute number of alcohol-attributable cancer deaths. However, the US population increased by approximately 35% between 1990 and 2023, which would be expected to contribute to an increase in the absolute number of deaths. Age-standardised mortality rates, which correct for changes in age distribution, are reported to increase from 3.8 to 4.1 per 100,000, a much smaller increase than the near doubling in absolute deaths.

An important limitation is the incompleteness of exposure data, since current cancer mortality may reflect cumulative alcohol exposure from many years or decades earlier. Also, ‘exposure to alcohol’ does not take into account important factors such as beverage type, dietary background and drinking pattern.

An important statistical concern is the large number of comparisons across cancer sites, age groups, sexes, states, and time periods. In addition, the description of outcome parameters changes across the various sections of the paper, reducing transparency. The paper also alternates between “confidence intervals” and “uncertainty intervals,” which are not interchangeable and should be distinguished consistently.

Jani et al.’s (2026) data on alcohol-attributable cancer deaths are surprising, given that overall cancer deaths have continued to decline in the USA over the past several decades. The authors estimate that alcohol-attributable cancer deaths in

the USA doubled from 1990 to 2023. However, risk factor-attributable cancer mortality is estimated for 88 different risk factors. As a result, the proportion of alcohol-attributable cancer deaths may simply rise when cancer deaths attributable to other risk factors, such as smoking, decline.

In conclusion, this paper by Jani et al. (2026) may be somewhat misleading, since the relationship between their findings and other data, such as actual alcohol consumption, overall cancer death trends and population growth, is unclear. Also, proportional attributions cannot be evaluated independently of other risk factors that have changed over such a long period.

Background

Alcohol consumption and its association with cancer incidence and mortality have been extensively studied and are therefore regularly discussed in our critiques. The International Agency for Research on Cancer (IARC) registered alcohol consumption as a Class 1 carcinogen (International Agency for Research on Cancer, 2012), meaning that IARC considers there to be sufficient, convincing evidence from scientific studies, primarily epidemiological research involving exposed populations, showing that the agent causes cancer in humans. Well over 130 substances have been classified in this Class 1 category, including tobacco smoking and processed meat.

IARC classifies alcohol consumption (and its ethanol metabolite, acetaldehyde) as a Class 1 carcinogen for at least seven specific cancers, namely cancers of the breast, colon and rectum, liver, mouth, throat, voice box and oesophagus. For the remaining approximately 200 cancer types (Song et al., 2015), no clear positive association has been established. In some cases, a negative association has been reported between alcohol consumption and cancer incidence (Fehringer et al., 2017). Whereas the seven Class 1 alcohol-attributable cancers include two of the most common cancers (breast and colon/rectum), other cancers are less common.

Some studies have indicated that even at low to moderate drinking levels, the risk of certain cancers is increased (Bagnardi et al., 2013). Other, more recent studies (National Academies of Sciences, Engineering, 2025) have indicated that moderate drinking, compared with never drinking,

is associated with breast cancer incidence with moderate certainty. This extensive study also concluded that no conclusion could be drawn about the association between moderate alcohol consumption and the risk of colorectal cancer compared with lifetime non-consumers. Similarly, no conclusion could be drawn about an association between moderate alcohol consumption and cancers of the oral cavity, pharynx, oesophagus, or larynx.

Some are convinced that alcohol consumption may cause cancer in various ways, namely through DNA damage, oxidative stress, hormonal changes and alterations in the gut microbiome. However, some methodological issues may confound the association, particularly among light and moderate drinkers. For instance, an association between alcohol consumption and smoking is consistently observed across many populations. Because alcohol consumption and smoking are correlated behaviours and smoking is a strong risk factor for cancer at many sites, residual confounding by smoking is a concern when estimating the risk attributable to alcohol alone. Interactions between alcohol consumption and other cancer risk factors are likely weaker but may still be relevant to the effect of alcohol on carcinogenesis. Unaddressed interactions could alter our understanding of how alcohol consumption affects cancer risk (Gapstur et al., 2022). Interactions between risk factors may also differ across cancer subtypes. For example, there is evidence that alcohol is associated with oestrogen receptor-positive but not oestrogen receptor-negative breast cancer (Jiang et al., 2024). Alcohol consumption is associated with breast cancer incidence but may not be with breast cancer recurrence incidence (Arecco et al., 2026).

The aim of the study by Jani et al. (2026) in *The Lancet* is to analyse alcohol-attributable cancer deaths across cancer types in the USA from 1990 to 2023 using Global Burden of Disease (GBD) data, with the main intention of increasing awareness that alcohol is a significant risk factor for cancer. Specifically, the authors intended to evaluate trends in national-level alcohol-attributable cancer mortality in the USA, stratified by sex, location and age group.

Critique

Jani et al. (2026) use various types of data from the GBD database, namely total alcohol-attributable cancer deaths, age-standardised mortality rates, age-standardised-specific mortality rates (ASMRs), age-group-specific mortality rates, and the percentage of mortality attributable to alcohol for all cancers combined and by ten individual cancer types, at both national and state levels. Although the authors describe several alcohol-attributable cancer-death-related parameters derived from multiple data sources and extensive modelling, none of these data was correlated with alcohol consumption in the same groups (age groups, US states) over time. The incompleteness of exposure data has been acknowledged as an important limitation of this study, but an initial attempt to evaluate the relation between alcohol consumption over time and/or alcohol consumption differences between states and their associations with alcohol-attributable cancer deaths would have strengthened the data and the conclusions drawn. Importantly, such an analysis would also need to account for the prolonged latency of many alcohol-related cancers. Current cancer mortality may reflect cumulative alcohol exposure from many years or decades earlier, rather than alcohol consumption in the same year. Jani et al. (2026) acknowledge this prolonged latency, but their analysis does not examine lagged or cumulative alcohol exposure when interpreting temporal changes in alcohol-attributable cancer mortality.

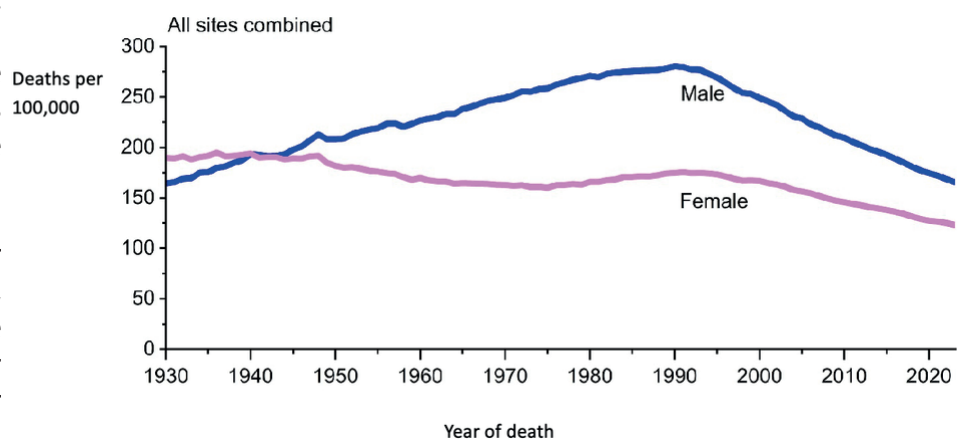
Interestingly, the authors did not use actual alcohol consumption for relative risk assessment; instead, they used the Theoretical Minimum Risk Exposure Level (TMREL). TMRELs were assessed individually for each region, age, sex, and year by identifying the consumption level that minimised overall health loss. However, no information was provided on the superiority of this approach over the classical risk association between actual alcohol consumption and cancer deaths over time. Also, the authors set relative risk to 1 not only for abstainers but also for those below TMREL,

thereby filtering out any potential beneficial effect from the analysis.

The first result reported that, between 1990 and 2023, alcohol-attributable cancer deaths in the USA doubled, rising from 11,361 (ASMR: 3.8/100,000; 95% CI: 1.7–6.9) to 23,126 (ASMR: 4.1/100,000; 2.7–5.8). The significance of this finding is unclear, since the percentage increase in estimated deaths is about 100%, whereas the ASMR increases by about 8% and the confidence intervals for ASMR in 1990 and 2023 overlap. Moreover, the substantial increase in the absolute number of alcohol-attributable cancer deaths should be distinguished from changes in age-standardised mortality rates. The US population increased by approximately 35% between 1990 and 2023, which would be expected to contribute to an increase in the absolute number of deaths. However, age-standardised mortality rates account for differences in population size and age structure. Jani et al. (2026) report an increase in the ASMR from 3.8 to 4.1 per 100,000 over the study period, a much smaller increase than the near doubling in absolute deaths. The reasons for this increase in the age-standardised rate, therefore, require separate consideration and cannot be attributed solely to population growth.

Jani et al.'s (2026) data on alcohol-attributable cancer deaths are also surprising, given that overall cancer deaths have continued to decline in the USA over the past several decades (Siegel et al., 2026) as shown in the figure below. However, the authors attribute the decline in overall cancer incidence and mortality to reduced tobacco use, earlier detection and better treatment.

Alcohol-attributable disease burden and mortality are estimated for 88 risk factors using population attributable fractions (PAFs) and TMRELs. As a



result, the proportion of alcohol-attributable cancer deaths may simply rise when cancer deaths related to other risk factors decline. Siegel et al. (2026) indicate that smoking has declined and, as such, has significantly contributed to the decrease in cancer deaths. Consequently, alcohol-attributable cancer deaths will rise anyway, whether this reflects a real increase or not.

Unfortunately, although various subgroups have been analysed, no distinction has been made between light-to-moderate alcohol consumption and heavy alcohol consumption or binge drinking. This is highly relevant, as most alcohol-attributable cancers show increased risk at high levels of consumption.

The paper extensively discusses alcohol policy. However, the cancer data do not report any association with alcohol policies across the various US states. It is disappointing that the authors did not address these aspects. Therefore, these descriptive data do not help in the attempt to counteract alcohol-related harm.

In conclusion, this paper by Jani et al. (2026) provides data that may be somewhat misleading, since the relationship between their findings and other data, such as overall cancer death trends, population growth, and actual alcohol consumption, is unclear. Also, proportional attributions cannot be evaluated independently of other risk factors that have changed over such a long period.

Specific member comments

Forum member Ellison writes that “Even before reading this paper, I recognised a number of important facts that should be discussed. First, people generally do not drink alcohol but consume a number of beverages that contain it. It is increasingly clear that many factors relate to the health effects of “alcohol,” especially those related to the type of beverage and the average number of drinks consumed, but even more importantly, to the “pattern of consumption.” The latter includes not only the type of beverage but also whether consumption is rapid and in large amounts (binge drinking) versus the regular consumption of more moderate amounts, as well as whether the beverage is consumed with or without food. Also, there are significant genetic and socioeconomic factors that influence the health effects of drinking. In the present paper, none of these factors are

taken into consideration, and even the reported number of drinks per a given time period is not used, but a theoretical risk exposure variable, as discussed by other Forum members.

The authors take ‘exposure to alcohol’ to mean only the total estimated intake of alcohol, which assumes a linear effect on health. However, a J-shaped relation between alcohol intake and health effects (primarily an improvement in health with light to moderate drinking but an increase in adverse health effects for larger amounts of alcohol) has consistently been found in studies for decades. Thus, any relation reported when the only measure of intake is the total number of drinks, and worse still, when all alcohol is grouped into a single measure of exposure, is essentially meaningless for devising reasonable advice to the public regarding drinking habits.

Other Forum members have noted that the percentage of an adverse outcome attributable to alcohol would tend to increase if other factors that increase the risk of the disease decrease. For example, if smoking rates decline over time, the percentage of diseases attributable to other factors (including alcohol, as in the present paper) would tend to increase. Such calculations do not account for a decrease in the overall risk of an outcome when the main focus is the percentage of risk attributable to individual factors.

Forum member Romano considers that “the study’s findings require cautious interpretation because alcohol exposure is estimated from surveys and other sources rather than measured directly over the study period. Average daily pure-alcohol consumption does not capture beverage type, drinking frequency, binge patterns, or changes in consumption over the life course—features relevant to cancer’s long latency. The theoretical minimum risk exposure level (TMREL) also varies by age, sex, region, and year, limiting straightforward comparisons across groups and periods.

The analysis divides the population into only two age groups (20–54 and 55 years or older). The latter combines people with substantially different ages and risk profiles, potentially concealing meaningful variation. Some estimates by cancer site, sex, and age have wide uncertainty intervals; therefore, interpret small differences between groups cautiously.

The most important statistical concern is the large number of comparisons across cancer sites, age groups, sexes, states, and time periods. Although the authors describe permutation testing to select Joinpoint models, they do not report a correction for multiple comparisons across these parallel analyses. Consequently, some statistically significant findings may reflect chance, particularly in subgroup analyses. Small *p* values also do not necessarily indicate practically important changes; effect size and uncertainty merit greater emphasis. In addition, the Methods section states that Joinpoint analysis used age-specific alcohol-attributable mortality rates, whereas the Results also report Joinpoint trends in the percentage of mortality attributable to alcohol. This apparent discrepancy reduces transparency and complicates reproducibility. The paper also alternates between “confidence intervals” and “uncertainty intervals,” which are not interchangeable and should be distinguished consistently.

A doubling in the absolute number of deaths does not, by itself, imply a proportional increase in individual risk, since population growth and ageing can contribute to the total. The paper also discusses age-standardised rates, but it should clearly distinguish absolute counts from standardised rates when interpreting the overall trend. Overall, the study provides a broad description of mortality patterns; however, model-based exposure estimates, multiple testing, and methodological ambiguity limit confidence in some subgroup trends and in interpretations that go beyond the descriptive findings.”

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Impacts of online nutritional counselling on the alcohol consumption of elderly individuals with mild cognitive impairment

People with mild cognitive impairment (MCI) have an increased health risk when they consume alcohol in comparison with people without cognitive impairment. Excessive alcohol consumption is an established modifiable risk factor that contributes to the risk of developing dementia.

Within a secondary data analysis of a 2 × 2 randomised controlled trial (RCT) - consisting of a computerised cognitive intervention and a nutrition counselling intervention, researchers evaluated the impact of a nutritional counselling group (neither focusing solely on alcohol consumption) on alcohol consumption in people with MCI at a 12-months follow-up, identified predictors of changes in alcohol consumption, and determined whether women benefited in the same way as men.

One hundred eighty-nine (189) of 270 trial participants reported consuming alcohol at baseline and started one of the two nutritional counselling programs (ITT sample). Data were collected at a 12-months follow-up. Participants received either whole-food plant-based (WFPB) nutritional group counselling or nutritional group counselling based on the German Nutrition Society's (DGE) recommendations. Alcohol consumption was quantified with standard drinks (10 g alcohol)/day.

The sample's average age was 70.6 years (52% female). Both interventions led to a significant

reduction in alcohol consumption in people with MCI after 12 months. There were no significant differences in the change in consumption level over time between the nutritional counselling groups. Women substantially reduced their alcohol consumption over time only in the DGE nutritional counselling group. In successful alcohol reducers (n = 84), higher baseline alcohol consumption, older age, and stricter adherence in the counselling group were significant predictors of a greater reduction. Higher cognitive functioning was a significant negative predictor of reduction.

In context of the lifestyle intervention of the BrainFit-Nutrition study, nutritional counselling for people with MCI was effective for reducing alcohol intake. The researchers say that these results suggest focusing on younger people living with MCI as well as higher educated people, especially men, to optimize the potential of modifiable risk factors for dementia. However, gender differences exist. A gender-specific nutritional counselling program is advised in the light of the gender health gap.

Source: Scheuermann JS, Graessel E, Scheerbaum P, Hanslian E, Schiele JK, Kessler CS, Donath C. Should I drink water or wine? Impacts of online nutritional counseling on the alcohol consumption of elderly individuals with mild cognitive impairment : Secondary Data Analysis from the RCT "BrainFit-Nutrition". BMC Public Health. 2026 Oct 3;26(1):2761. <https://doi.org/10.1186/s12889-026-29728-5>

Sex differences in the association between hazardous alcohol consumption and suicide mortality in South Korea

While the co-occurrence of hazardous alcohol consumption and mental health problems has been well documented, evidence on sex-specific associations between hazardous alcohol consumption and suicide mortality remains limited. A cohort study explored the relationship between hazardous alcohol consumption and suicide mortality among men and women.

A nationally representative sample of 64,756 adults in South Korea (27,726 males and 37,030 females) was followed until December 31, 2022, using data from a national death registry. Hazardous alcohol consumption was measured using the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C). Participants were classified into non-alcohol use, low-risk alcohol consumption, and hazardous alcohol consumption groups. Deaths caused by intentional self-harm (ICD-10 codes X60-X84) were classified as suicide mortality.

During a median follow-up of 9.67 years, 190 suicidal deaths occurred. Higher AUDIT-C scores

were positively associated with the risk of suicide mortality among women (HR: 1.15, 95% CI: 1.03-1.28) but not among men (HR: 1.02, 95% CI: 0.95-1.09). In analyses in which alcohol use status was categorised, hazardous alcohol consumption was not linked to suicide mortality among men (HR: 1.01, 95% CI: 0.57-1.79), whereas hazardous alcohol consumption had a 2.50-fold (95% CI: 1.18-5.32) higher risk for suicidal mortality among women, compared with non-alcohol use.

Hazardous alcohol consumption was linked to an increased risk of suicide mortality, particularly among women. This study underscores the need for sex-specific approaches to suicide prevention, particularly targeting women who engage in hazardous alcohol consumption.

Source: Baek SU, Yoon JH. Sex differences in the association between hazardous alcohol consumption and suicide mortality: A population-based cohort study in South Korea. *J Affect Disord.* 2026 Oct 15;411:122031. <https://doi.org/10.1016/j.jad.2026.122031>

The relationship between subjective (arousal and craving) and physiological (heart rate variability) stress- and alcohol cue-reactivity in young adults who engaged in hazardous drinking

Alcohol use disorder (AUD) is marked by sensitivity to alcohol cues and stress, increasing craving and stress. Stress typically lowers heart rate variability (HRV), whereas alcohol cues may increase or decrease HRV; however, their combined effects remain unclear. A team of researchers examined (1) subjective craving, stress, and HRV responses to alcohol cue exposure and stress exposure, and (2) whether exposure order (stress-alcohol vs alcohol-stress) influenced these responses. Additional exploratory analyses examined associations between subjective and physiological reactivity.

Fifty-six young adult who engaged in hazardous drinking (37 women; median age = 20 years, IQR = 3) with AUDIT scores ≥ 8 (median = 14, IQR = 6) and minimal other substance use were randomised to two conditions: stress-alcohol or alcohol-stress exposure. Alcohol cues included visual, olfactory, and tactile stimuli, and stress was induced using a computerized mental arithmetic task (MAT). Craving and stress were rated on Likert scales, and HRV was continuously recorded via a portable electroencephalograph (ECG) device.

Alcohol cues increased craving. While stress exposure followed by alcohol cues reduced subjective stress. Alcohol cues increased HRV, while stress-exposure raised stress without affecting craving. In an exploratory subgroup analysis, HRV reactivity during MAT was observed only in participants whose craving remained unchanged change following MAT, suggesting an inverse association between craving and autonomic responsiveness.

These findings highlight linked effects of stress exposure and alcohol cues on autonomic regulation in hazardous drinking and may offer preliminary insights into mechanisms that could be relevant for relapse prevention.

Source: Firdaus I, Kleiboer A, Kaag AM, Huizink AC. The relationship between subjective (arousal and craving) and physiological (heart rate variability) stress-and-alcohol cue-reactivity in young adults who engaged in hazardous drinking: a counterbalanced study. *Addict Behav.* 2026 Nov;182:108777. <https://doi.org/10.1016/j.addbeh.2026.108777>

Wine intake and cancer risk: an umbrella review of meta-analyses'

Alcohol consumption is a known risk factor for some cancers, but different alcoholic beverages may be differently associated with cancer risk. Wine is a complex hydro-alcoholic solution containing several compounds with potential anti-carcinogenic properties. An umbrella review aimed to summarise the available evidence on the association between wine consumption and cancer risk across different cancer sites.

A systematic search was conducted on PubMed, Scopus and Web of Science, including systematic reviews and meta-analyses published up to April 28, 2026. Twenty-seven meta-analyses were included. Most of the associations between wine consumption and cancer risk were not statistically significant. No significant associations were generally found for colorectal, gastric, bladder, endometrial, ovarian and lung cancers. An increased risk was reported for oral and pharyngeal cancer (RR 2.12, 95% CI 1.37-3.29) and oesophageal cancer (RR 5.34, 95% CI 1.43-19.89). The available

evidence regarding specific beverage types (red versus white wine) was highly inconsistent across the evaluated cancer sites. For breast cancer, risk estimates were remarkably similar between white and red wine, while findings for prostate cancer showed conflicting directions across the included meta-analyses, preventing definitive conclusions regarding beverage-specific effects.

The available evidence showed a heterogeneous association between wine consumption and cancer risk across different cancer sites. While most associations were not statistically significant, increased risks were reported for some malignancies. However, the heterogeneity and methodological limitations of the available evidence do not allow definitive conclusions regarding the specific role of wine in cancer risk.

Source: Bertola C, Conciarelli L, Russo PP, Fabiani R, Wine intake and cancer risk: an umbrella review of meta-analyses, *Cancer Epidemiology*, Vol 105, 2026, Art No 103241, 16pp <https://doi.org/10.1016/j.canep.2026.103241>

Alcohol consumption and colorectal cancer risk in prediabetes and diabetes

The impact of light-to-moderate alcohol consumption on colorectal cancer (CRC) risk remains uncertain. Researchers examined whether a dose-response association exists between alcohol consumption and CRC risk and whether it differs by glycaemic status.

A nationwide cohort of 4,475,492 adults undergoing health screening provided by Korean National Health Insurance Service in 2012 was analysed. Participants were followed until CRC development, death, or December 31, 2022 (median follow-up, 9.33 years). Alcohol intake was categorised as none, light-to-moderate (male, <30 g/day; female, <20 g/day), or heavy. Incident CRC identified using ICD-10-CM and cancer-specific reimbursement codes served as the primary outcome.

During follow-up, 51,592 participants developed CRC. Worse glycaemic status was significantly associated with increased risk of CRC (hazard ratio [HR], 1.11 [95% CI, 1.09-1.13] for impaired fasting glucose (IFG); HR, 1.26 [95% CI, 1.23-

1.29] for diabetes). Light-to-moderate alcohol consumption significantly and synergistically increased CRC risk in individuals with IFG (HR, 1.23 [95% CI, 1.19-1.27]; synergy index, 1.72 [95% CI, 1.40-2.04]) and in those with diabetes (HR, 1.48 [95% CI, 1.42-1.54]; synergy index, 2.04 [95% CI, 1.84-2.25]). Greater alcohol intake amount and frequency showed a linear dose-response association with increased risk of all subsites of colorectal cancer across all glycaemic categories (except normoglycemia for proximal colon cancer), with the steepest gradient for diabetes.

Even light-to-moderate alcohol consumption was associated with increased CRC risk; therefore, strict restriction of alcohol intake may help reduce this risk, particularly among individuals with IFG or diabetes.

Source: Kim TS, Han K, Oh YE, Kim ER, Min BH. Alcohol consumption and colorectal cancer risk in prediabetes and diabetes: a nationwide cohort study. *J Natl Cancer Inst.* 2026 Sep 24:djag340. <https://doi.org/10.1093/jnci/djag340>

The impact of alcohol consumption on the risk of hepatocellular carcinoma across different age groups

Alcohol consumption is a well-established risk factor for hepatocellular carcinoma (HCC), although its impact may vary across different age groups. A study investigated the association between alcohol consumption and the risk of HCC across different age groups.

4,234,445 participants aged ≥ 20 years underwent a national health examination in 2009. Cox proportional hazards regression models were used to investigate the association of alcohol consumption with the risk of HCC across age groups.

Among 3,869,084 participants, 20,475 individuals were newly diagnosed with HCC during a median follow-up of 11.3 years. When stratified by 20-years age groups, increasing alcohol consumption was significantly associated with an increased risk of HCC in the ≥ 60 -years age group compared with no alcohol consumption. Heavy alcohol consumption (defined as heavy ≥ 30 g alcohol/day for men, ≥ 20 g alcohol/day for women) was

significantly associated with an increased risk of HCC in the 40-59-years and ≥ 60 -years age groups, with larger effect estimates observed at older ages (adjusted hazard ratio, 1.11; 95% CI, 1.05-1.18 for the 40-59-years age group; adjusted hazard ratio, 1.47; 95% CI, 1.38-1.57 for the ≥ 60 -years age group).

The findings indicate that the association between alcohol consumption and the risk of HCC differs across age groups, with the most pronounced risk increase observed among older individuals. These findings may inform age-tailored HCC risk assessment and prevention strategies, particularly by identifying Korean middle-aged and older heavy drinkers who may benefit from more careful risk stratification.

Source: Kim MN, Han K, Kim DY, Lee JS, Lee HW, Kim BK, Kim SU, Park JY, Ahn SH, Kim DY. The impact of alcohol consumption on the risk of hepatocellular carcinoma across different age groups: A nationwide cohort study. *JHEP Rep.* 2026 Oct;8(10):101975. <https://doi.org/10.1016/j.jhepr.2026.101975>

Modifiable lifestyle factors in cardiovascular disease prevention: current evidence and future direction

Cardiovascular disease (CVD) remains the leading cause of morbidity and mortality worldwide despite substantial advances in pharmacologic and interventional therapies. Modifiable lifestyle behaviours are major determinants of cardiovascular risk and essential targets for primary and secondary prevention. A narrative review summarises contemporary evidence on smoking cessation, physical activity and exercise, nutrition, alcohol consumption, sleep health, sedentary behaviour, and integrated lifestyle strategies.

Evidence from randomised trials supports cardiovascular risk-factor and event reduction with selected dietary and exercise interventions (i.e., Mediterranean and Dietary Approaches to Stop Hypertension (DASH)), whereas many estimates for sleep, sedentary behaviour, alcohol and composite lifestyle scores derive from observational studies and should be interpreted as

associations rather than causal effects. Conversely, unhealthy dietary habits, tobacco use, excessive alcohol consumption, poor sleep quality, and prolonged sedentary behaviour contribute to endothelial dysfunction, inflammation, metabolic dysregulation, and accelerated atherosclerosis and subsequent increased risk of CVD.

Emerging evidence further underscores the importance of considering lifestyle behaviours collectively rather than individually, as their effects may be synergistic. Comprehensive lifestyle modification remains one of the most effective and cost-effective approaches to reducing cardiovascular risk and should be integrated into routine clinical practice and public health initiatives.

Source: Benjamin P, Djoussé L. Modifiable Lifestyle Factors in Cardiovascular Disease Prevention: Current Evidence and Future Directions. *Nutrients.* 2026; 18(18):3104. <https://doi.org/10.3390/nu18183104>

Alcohol reduction and 15-year cardiometabolic changes in glycaemic, lipid and blood pressure profiles

The long-term cardiometabolic effects of alcohol reduction remain unclear. A research team evaluated the long-term associations of sustained alcohol reduction with glycaemic, blood pressure, and lipid profiles.

The study used annual health examination data from Japanese employees (2008–2023). Eligible participants were aged ≥ 40 years and consumed ≥ 20 g/day of ethanol at baseline. Participants subsequently reducing alcohol intake to < 20 g/day formed the intervention group; those maintaining ≥ 20 g/day formed the control group. Longitudinal trajectories of fasting plasma glucose (FPG), systolic blood pressure (SBP), diastolic blood pressure (DBP), triglycerides, high-density lipoprotein (HDL) cholesterol, and low-density lipoprotein (LDL) cholesterol were estimated.

Among 266,699 eligible trial entries, 30,280 and 229,946 trial entries were included in the intervention and control groups, respectively. Alcohol reduction was associated with

persistently lower FPG, SBP, DBP, and triglycerides over 15 years. At Year 15, between-group differences were -1.8 mg/dL for FPG, -3.4 mmHg for SBP, -2.2 mmHg for DBP and -20.4 mg/dL for triglycerides. Conversely, HDL cholesterol levels were consistently lower and LDL cholesterol levels modestly higher in the intervention group. Blood pressure-lowering effects were consistent across genders, and findings were broadly consistent across sensitivity, subgroup, and dose-transition analyses.

Sustained alcohol reduction improved long-term FPG, blood pressure, and triglycerides. These findings support alcohol reduction as a potentially beneficial lifestyle intervention for improving cardiometabolic profiles.

Source: Ichikawa T, Okada H, Yamamoto S, et al., Alcohol reduction and 15-year cardiometabolic changes in glycemic, lipid and blood pressure profiles: a target trial emulation study," *Diabetes, Obesity and Metabolism* (2026): 1–11, <https://doi.org/10.1111/dom.71335>.

Alcohol consumption and incident osteoarthritis

Researchers in Korea examined the association between alcohol consumption and incident osteoarthritis (OA) and whether it persists after restriction for liver-related and weight-related factors.

South Korean National Health Insurance Service data was analysed for adults aged ≥ 40 years who underwent health screening in 2009–2011 and had no recorded OA at baseline. Alcohol consumption was assessed by self-reported drinking frequency and estimated daily ethanol intake. Participants were followed until first claims-based OA diagnosis (ICD-10 M15–M19, excluding traumatic OA), death, or December 31, 2023. Prespecified restricted analyses were conducted in participants with normal liver function and no liver disease history and in participants with normal weight and no obesity history.

Among 1,233,179 participants with drinking-amount data (mean age, 50.8 years), the mean follow-up period was 9.9 years, during which 571,077 cases of OA occurred. Compared with non-drinkers, the light-drinking group had an adjusted HR of 1.037 (95% CI, 1.030–1.045), the

moderate-drinking group had an adjusted HR of 1.081 (95% CI, 1.072–1.091), and the heavy-drinking group had an adjusted HR of 1.186 (95% CI, 1.174–1.197). A similar dose-response pattern was observed for drinking frequency and across sensitivity analyses. The pattern also persisted in the normal liver function and normal weight cohorts, and women showed elevated OA risk at lower levels of alcohol consumption than men.

Alcohol consumption was associated with incident OA in a dose-dependent manner that persisted after liver-related and weight-related restrictions, suggesting that this association is unlikely to be explained solely by hepatic dysfunction or obesity. These findings identify alcohol consumption as a factor associated with incident OA, warranting further investigation as a potentially modifiable contributor to OA risk.

Source: Cho S, Yong S, Ha E, Kim JH, Kim YJ. Alcohol consumption and incident osteoarthritis: A nationwide population-based longitudinal study. *Osteoarthritis Cartilage*. 2026 Sep 15:S1063-4584(26)01045-9. <https://doi.org/10.1016/j.joca.2026.09.005>

Prevalence and trends in recent alcohol consumption by cancer history and cancer type in US adults

Alcohol consumption increases the risk of several cancer types. Using nationally representative data, researchers aimed to 1) quantify trends in alcohol consumption by cancer history and 2) estimate prevalence differences in alcohol consumption comparing individuals with vs. without a cancer history overall and by cancer type.

The study used Behavioral Risk Factor Surveillance System (BRFSS) cross-sectional data from 2016-2024 for trend and 2022-2024 for prevalence difference analyses. Weighted prevalences of current (past-30-day alcohol consumption), binge, and heavy drinking among individuals with and without a cancer history were calculated. Annual percentage-point changes (APPCs) and adjusted prevalence differences were estimated.

Data from 3,968,799 and 465,870 respondents were included in trend and prevalence difference analyses. Across all years, the current drinking prevalence was lower among individuals with a cancer history than without. Current drinking

declined among those without a cancer history (53.9% in 2016 to 51.5% in 2024; APPC = - 0.28%) but not among those with a cancer history (45.8% in both 2016 and 2024; APPC = 0.06%). The adjusted prevalence of current and binge drinking was lower in those with a cancer history. By cancer type, the adjusted prevalence of current drinking was lower for most sites except for testicular, skin, and melanoma.

Alcohol consumption was generally less prevalent among those with vs. without a reported cancer history and modestly declined over time in the latter group. These results inform the understanding of recent patterns in alcohol consumption by cancer history.

Source: Johnson KJ, Eyler AA, Harris JK. Prevalence and trends in recent alcohol consumption by cancer history and cancer type in a nationally representative sample of U.S. adults. *Cancer Causes Control*. 2026 Sep 24;37(10):167. <https://doi.org/10.1007/s10552-026-02248-8>

Drinking patterns and antidepressant medication - a prospective register-linked study among 40 to 60-year-old employees

Researchers at the University of Helsinki, Finland, examined the association between drinking patterns and subsequent antidepressant medication using register-linked data.

The Helsinki Health Study survey (2000-02) of 40- to 60-year-old employees was linked with antidepressant medication data from registers of the Social Insurance Institution of Finland. Drinking patterns included weekly amount of drinking, binge drinking and problem drinking. Hazard ratios (HR) for the first antidepressant medication purchase during five-year follow-up were calculated. Gender, age, occupational position, marital status, relative weight, smoking and leisure-time physical activity were included as covariates. The study included 5,727 employees with no antidepressant purchase during 3 years preceding the baseline.

Heavy drinking was associated with an increased risk of antidepressant medication compared to moderate drinking (HR 1.53, 95% CI 1.18-1.99). Non-drinkers (1.43, 1.03-1.97), occasional binge drinkers (1.27, 1.06-1.52) and frequent binge drinkers (1.35 (1.02-1.77) showed an association

with antidepressant medication compared to non-bingeing drinkers. Problem drinking was associated with antidepressant medication (1.84, 1.54-2.19). The associations remained after adjusting for occupational position and for marital status. The associations concerning heavy drinking and problem drinking remained also after adjusting for relative weight and health behaviours. An additional analysis among participants with prior antidepressant medication before baseline, showed no associations between drinking patterns and subsequent antidepressant medication during the follow-up.

Alcohol drinking is associated with antidepressant medication among employees. The association is not limited to problem drinking. Paying attention to heavy, binge and problem drinking might help prevent depression.

Source: Salonsalmi A, Lahti J, Lahelma E, Rahkonen O, Lallukka T. Drinking patterns and antidepressant medication - a prospective register-linked study among 40 to 60-year-old employees. *Soc Psychiatry Psychiatr Epidemiol*. 2026 Oct;61(10):2147-2154. <https://doi.org/10.1007/s00127-025-02996-z>

Associations of Life's Essential 10 with mortality and health span free of cardiovascular disease and cancer

To evaluate associations of cardiovascular health (CVH) based on Life's Essential 10 (LE10) with all-cause mortality, cardiovascular disease (CVD) and cancer mortality and incidence, and life expectancy free of cardiovascular disease and cancer.

Researchers have developed a scoring system called Life's Essential 10 (LE10) to measure cardiovascular health. It builds on the American Heart Association's Life's Essential 8 by including alcohol consumption and mental health.

The score considers 4 health behaviours (Eat Better, Be More Active, Quit Tobacco, Get Healthy Sleep) and 4 health factors (Manage Weight, Control Cholesterol, Manage Blood Sugar, Manage Blood Pressure) and includes moderate alcohol consumption (0–100 g/week) and maintaining good psychological wellbeing.

A prospective study included 110,806 UK Biobank participants (aged 37–73) and 20,031 National Health and Nutrition Examination Survey (NHANES) participants (aged ≥ 20). LE10 (0–100) categorised cardiovascular health as low (< 60), moderate (60–79), and high (≥ 80). Adjusted hazard ratios (aHRs) were estimated. Life expectancy was calculated using multi-state and flexible parametric survival models.

Over a median follow-up of 13.8 years, 6,137 deaths, 13,968 cardiovascular disease events,

and 18,077 cancer cases were documented in UK Biobank. In UK Biobank, high cardiovascular health was associated with lower risks of all-cause mortality (men: aHR 0.43, 95% CI 0.39–0.48; women: aHR 0.34, 95% CI 0.29–0.39), alongside cardiovascular disease and cancer mortality and incidence, compared to low cardiovascular health. At age 50, high cardiovascular health conferred greater projected overall (men +5.47 years, women +5.85) and disease-free life expectancy (men +4.02 years, women +4.40). Having more low-risk cardiovascular health metrics was associated with up to 9.73 years of projected gains in life expectancy. Associations were replicated and consistent in 7.2-year NHANES follow-up.

Higher LE10-based cardiovascular health levels were associated with lower all-cause mortality, reduced cardiovascular disease and cancer mortality and incidence, and longer life expectancy free of cardiovascular disease and cancer. LE10 may provide additional targets for cardiovascular health management.

Source: Dun Y, He L, Thomas RJ, Yang F, Ye Q, Squires RW, Olson TP, Ripley-Gonzalez JW, Wu IXY, Liu S. Associations of Life's Essential 10 with Mortality and Healthspan Free of Cardiovascular Disease and Cancer: Findings in Two Nationwide Cohorts. *Eur Heart J Qual Care Clin Outcomes*. 2026 Oct 1:qcag151. <https://doi.org/10.1093/ehjqcco/qcag151>

Association of alcohol consumption with risk of pancreatic cancer

Alcohol consumption is a known risk factor for various cancers, but the dose-response relationship between alcohol intake and pancreatic cancer risk remains unclear.

A meta-analysis aimed to evaluate the dose-response relationship between them. A search was conducted in PubMed, Web of Science, and Embase for prospective cohort studies up to February 10, 2026. Ten high-quality studies were identified, involving 22,365,829 participants and 21,255 cases. Comparing the highest with the lowest alcohol consumption categories, the pooled relative risk (RR) was 1.19 (95% CI: 1.10–1.28). No nonlinear association was observed in the dose-response analysis ($p = .195$). For every 10-gram increase in daily alcohol intake, the risk

of pancreatic cancer increased by 5% (RR = 1.04, 95% CI: 1.03–1.05). This linear association was also suggested in the never-smoker subgroup and appeared consistent across genders and regions. Alcohol consumption appears to increase the risk of pancreatic cancer in a linear dose-response manner, although the risk elevation at light drinking levels (e.g., below approximately 15 g/day) was not statistically significant.

Source: Li J, Liu L, Sun J, Zhu J, Li T, Wei S, Lu M, Song Y, Wang Z, Wang P, Shi J, Wang K, Ye H. Association of Alcohol Consumption with Risk of Pancreatic Cancer: A Systematic Review and Dose-Response Meta Analysis of Prospective Cohort Studies. *Nutr Cancer*. 2026 Sep 27:1–13. <https://doi.org/10.1080/01635581.2026.2735062>

Acute effects of binge drinking following aerobic exercise on autonomic and hemodynamic recovery in young men

Impaired autonomic and hemodynamic recovery after acute aerobic exercise is linked to greater susceptibility to sudden cardiovascular events. Binge drinking can increase cardiovascular risk, partly through elevations in heart rate, blood pressure, and sympathetic activity, yet alcohol is commonly consumed after exercise. Researchers tested whether binge drinking after acute aerobic exercise delays autonomic and hemodynamic recovery in young men.

In a randomised crossover design, 14 young men (mean age 25 years; body mass index 25.1 kg/m²) completed a 30-min treadmill run at 55-60% of heart rate reserve, followed immediately by water (360 mL) or alcohol (soju; 360 mL containing 60 g ethanol). Autonomic function was assessed using heart rate variability (HRV); hemodynamics included heart rate, brachial blood pressure, and rate-pressure product (RPP). Measurements were obtained at baseline and at 1 h and 2 h postexercise.

Breath alcohol concentration increased after alcohol ingestion at 1 h (0.08 ± 0.02) and 2 h (0.06 ± 0.02) postexercise (condition $\times$ time, $p < 0.001$). Compared with water, postexercise alcohol delayed autonomic recovery, with persistently reduced HRV and a sustained shift toward sympathetic predominance (higher SNS index, lower PNS index; condition $\times$ time, all $p \leq 0.002$). Heart rate and rate-pressure product also remained elevated during recovery in the alcohol condition.

Binge drinking after aerobic exercise delays autonomic recovery and increases myocardial oxygen demand in young men, supporting avoidance of alcohol during the early postexercise period.

Source: Kim YW, Han CJ, Choi TG, Kim B, Kim HJ, Jae SY. Acute effects of binge drinking following aerobic exercise on autonomic and hemodynamic recovery in young men: a randomized crossover trial. Clin Auton Res. 2026 Sep 28. <https://doi.org/10.1007/s10286-026-01243-y>

Health deterioration precedes alcohol cessation and biases the nondrinker reference group

Former drinkers are often grouped with lifetime abstainers as the nondrinker reference group in alcohol-related health studies. This classification has the potential to bias estimates when alcohol cessation follows health deterioration. Published in the journal, Alcohol, a study examined whether adverse health status and healthcare burden preceded alcohol cessation and whether the inclusion of former drinkers altered estimates for current drinkers.

Using two independent Korea Health Panel cohorts from 2010–2018 and 2019–2023, adults were classified as lifetime abstainers, former drinkers, or current drinkers. Former drinkers were further classified by self-reported abstinence duration. Unweighted repeated person-period logistic regression with individual-level cluster-robust standard errors was used to assess health status by drinking category, next-year transition from current to former drinking, and differences between conventional and corrected nondrinker reference definitions.

In both cohorts, former drinkers, especially recent former drinkers, had higher odds of physical limitation, poor self-rated health, hospitalization, and high out-of-pocket medical spending than lifetime abstainers. Among current drinkers, these indicators of health status and healthcare burden were associated with transition to former drinking in the following year, most consistently among adults aged 40 years or older. Including former drinkers with lifetime abstainers in the nondrinker reference group produced more inverse estimates for current drinking.

Former drinkers in the Korea Health Panel appear to include a health-selected subgroup consistent with the sick-quitter mechanism. Separating former drinkers from lifetime abstainers and considering pre-cessation health status may improve the interpretation of alcohol-health associations.

Source: Jae Hee Lee, Health Deterioration Precedes Alcohol Cessation and Biases the Non-drinker Reference Group: Longitudinal Evidence from Two Cohorts of the Korea Health Panel, Alcohol, 2026, 107458, ISSN 0741-8329, <https://doi.org/10.1016/j.alcohol.2026.107458>.

Medical research by publication date

Wine consumption, Mediterranean diet, and cardiovascular risk in two Spanish cohorts . Published: 11 February 2026.

Sex differences in the association between hazardous alcohol consumption and suicide mortality: A population-based cohort study in South Korea. Available online 25 May 2026, Version of Record 28 May 2026.

The relationship between subjective (arousal and craving) and physiological (heart rate variability) stress- and alcohol cue-reactivity in young adults who engaged in hazardous drinking: a counterbalanced study. Available online 16 June 2026, Version of Record 23 June 2026.

Associations of alcohol consumption and obesity with diabetes risk: evaluating multiplicative and additive interactions. Published: 02 July 2026.

Alcohol consumption and cognitive function: A systematic review and dose–response meta-analysis of 20 cohort studies. First published: 28 July 2026

The impact of alcohol consumption on the risk of hepatocellular carcinoma across different age groups: A nationwide cohort study. Published online August 1, 2026.

Alcohol-attributable cancer mortality in the United States, 1990–2023: a secondary analysis of Global Burden of Disease data. Published September 2, 2026.

Alcohol reduction and 15-year cardiometabolic changes in glycaemic, lipid and blood pressure profiles: a target trial emulation study. First published: 09 September 2026.

Alcohol consumption and incident osteoarthritis: A nationwide population-based longitudinal study. Published online September 15, 2026.

Modifiable lifestyle factors in cardiovascular disease prevention: current evidence and future direction. Published: 21 September 2026

Prevalence and trends in recent alcohol consumption by cancer history and cancer type in a nationally representative sample of US adults. Published: 24 September 2026.

Alcohol consumption and colorectal cancer risk in prediabetes and diabetes: a nationwide cohort study. Published: 24 September 2026.

Association of alcohol consumption with risk of pancreatic cancer: a systematic review and dose-response meta analysis of prospective cohort studies. Published online: 27 September 2026

Drinking patterns and antidepressant medication - a prospective register-linked study among 40 to 60-year-old employees. Published: 27 September 2025, Version of record 27 September 2025

Acute effects of binge drinking following aerobic exercise on autonomic and hemodynamic recovery in young men: a randomized crossover trial. Published: 28 September 2026

Associations of Life's Essential 10 with Mortality and Healthspan Free of Cardiovascular Disease and Cancer: Findings in Two Nationwide Cohorts. Published: 01 October 2026

Wine intake and cancer risk: an umbrella review of meta-analyses' Available online 8 October 2026, Version of Record 8 October 2026.

Should I drink water or wine? Impacts of online nutritional counselling on the alcohol consumption of elderly individuals with mild cognitive impairment: Secondary Data Analysis from the RCT "BrainFit-Nutrition". Published: 03 October 2026

Health deterioration precedes alcohol cessation and biases the nondrinker reference group: longitudinal evidence from two cohorts of the Korea health panel. Available online 6 October 2026, Version of Record 8 October 2026.

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Sociodemographic disparities in binge and heavy drinking among US adults, 2024

Excessive alcohol use remains a leading contributor to preventable morbidity and mortality in the US and is distributed unevenly across sociodemographic groups. Using recent nationally representative data, the disparities in binge and heavy drinking among US adults were examined.

Data from the cross-sectional 2024 Behavioral Risk Factor Surveillance System were analysed. Current binge drinking was defined as ≥ 5 drinks for men or ≥ 4 drinks for women on 1 occasion monthly, and heavy drinking was defined as >14 drinks and >7 drinks per week for men and women, respectively. The adjusted odds of binge and heavy drinking across sociodemographic factors were estimated.

The weighted prevalence of binge and heavy drinking were 15.3% and 5.6%, respectively. Binge drinking was most common among younger adults, males, non-Hispanic Whites, and unmarried adults. Heavy drinking peaked among adults aged 35-44 years and those with some college education.

The adjusted odds (AOR) of binge drinking were lower for adults aged ≥ 65 years (AOR=0.24, 95% CI=0.22, 0.27) and non-Hispanic Asians (AOR=0.43, 95% CI=0.37, 0.50) and higher for never-married adults (AOR=1.13, 95% CI=1.07, 1.19). For heavy drinking, higher odds were observed for never-married adults (AOR=1.12, 95% CI=1.03, 1.22), those aged 35-44 years (AOR=1.24, 95% CI=1.08, 1.43), and individuals with some college education (AOR=1.24, 95% CI=1.08, 1.43) or a high-school diploma (AOR=1.10, 95% CI=1.02, 1.19).

Excessive alcohol use is distributed unequally across the US. Identifying sociodemographic groups at the highest risk can guide targeted prevention, early intervention, and harm-reduction strategies.

Source: Mattingly DT, Diaby M, Yockey RA, Jacobs W. Sociodemographic Disparities in Binge and Heavy Drinking Among U.S. Adults, 2024. *Am J Prev Med.* 2026 Oct;71(4):108433. <https://doi.org/10.1016/j.amepre.2026.108433>.

Low-cost alcohol products account for a disproportionate share of privatised off-premises alcohol sales across 42 US States

A study assessed alcohol product availability, sales, and prices among privatised off-premises alcohol sales in 42 US states and quantified sales among lower-priced products.

NielsenIQ weekly retail scanner data was used from 28 license states (where alcohol sales are privatised) and 14 control states (where alcohol sales are partially privatised and partially government controlled, e.g., for distilled spirits) collectively representing privatised off-premises alcohol sales in 42 US states from November 11, 2018, to November 4, 2023. Researchers descriptively analysed the latest year (November 2022-November 2023) of alcohol product availability (number of unique products), standard drink price, and standard drink sales, and compared these with estimates from the earliest year (November 2018-November 2019). The sales market share of products priced at or below \$0.50, \$0.75, and \$1.00 per standard drink were quantified.

Overall, product availability increased from 2018-2019 to 2022-2023 among all alcohol types, ranging from +7.4% (beer) to +67.0% (ready-to-drink beverages [RTDs]), whereas sales decreased for beer (-8.0%) and wine (-10.7%) and increased for spirits (+7.4% [license states only]) and RTDs (+68.6%). The average price paid for a standard drink remained less than \$2.00 through 2023. During 2022-2023, in license states, 57.4% of spirits sales were \$1.00 or less per standard drink; across all states, 23.3% of beer sales (13.0% of beer products), 28.7% of wine sales (7.4% of wine products), and 18.4% of RTDs sales (24.0% of RTDs products) were \$1.00 or less per standard drink.

Among 42 US states, a substantial share of alcohol sales was from lower-priced products.

Source: Gammon DG, McKeithen MC, Gaber J, Esser MB, Leung G, Karriker-Jaffe KJ. Low-Cost Alcohol Products Account for a Disproportionate Share of Privatized Off-Premises Alcohol Sales Across 42 U.S. States. *J Stud Alcohol Drugs.* 2026 Jul;87(4):718-726. <https://doi.org/10.15288/jsad.25-00163>

Social media, drinking motives, and alcohol use in young adults

Growing evidence suggests exposure to alcohol-related content (ARC) on social media may contribute to increased alcohol use, particularly among young adults. ARC often portrays drinking as reward-ing and/or normative, potentially shaping drinking motives, which are key predictors of alcohol use. Therefore, a study sought to longitudinally examine if drinking motives mediate the associations between (a) exposure to peers' ARC on social media and (b) perceived number of friends posting ARC and young adult's alcohol use over an 8-week period.

266 young adults (aged 18-30) in the US who reported consuming ≥ 8 drinks per week completed baseline, 4- and 8-week follow-up surveys assessing ARC exposure, perceived number of peers post-ing ARC, drinking motives, and alcohol use. Drinking motives (social, enhancement, coping, conformity) were assessed as mediators. Both ARC exposure and perceived ARC posting were significantly associated with

all four motives, with each predicting baseline alcohol use, however, none predicted longitudinal change in alcohol use. Coping and enhancement motives significantly mediated the association between ARC exposure and baseline alcohol use. All four motives significantly mediated the association between perceived number of friends posting ARC and baseline alcohol use, suggesting proximal peer cues may be especially influential.

Findings highlight the roles of coping and enhancement motives in linking ARC exposure to young adult drinking. Programs targeting motivational pathways and perceived peer norms and challenging social media-driven alcohol motivations may help reduce young adult alcohol use.

Source: Wang CL, Meshesha LZ, Woerner J, Schmidt EG, Lysandrou AE, Ghonasgi R, Dunn ME. Social media, drinking motives, and alcohol use in young adults: a longitudinal mediation study. *Addict Behav.* 2026 Dec;183:108799. <https://doi.org/10.1016/j.addbeh.2026.108799>

Reasons for not drinking: Demographic variation and health risk awareness among abstainers and former drinkers in a national survey

Despite a decline in drinking in the United States, current reasons for alcohol abstinence remain underexplored. A research group estimated the prevalence of reasons for not drinking among lifetime abstainers and former drinkers, compare reasons across demographics, and examine associations between awareness of alcohol's health risks and not drinking for health reasons.

Data came from a 2024 nationally representative online survey of US adults. 1772 respondents reporting no past-year or lifetime alcohol use rated the importance of five reasons for not drinking and indicated their awareness of alcohol health risks. Bivariate comparisons and multivariate logistic regressions were used to examine subgroup differences in reasons for not drinking and associations with awareness of alcohol's health effects.

The most common reasons for not drinking were concerns about health and impaired control. In bivariate analysis, fewer gender and sexual minority individuals cited health and impaired

control as reasons for not drinking, while more Black and Hispanic respondents endorsed health concerns and family/friend concerns as reasons. Awareness of alcohol's health risks was higher among those who cited health as a reason for not drinking. In multivariate analyses, gender, race, ethnicity, sexual identity, and awareness of alcohol's effect on cancer risk remained significant correlates of reasons for not drinking.

The most common reasons for not drinking related to concerns about health and impaired control, and reasons varied between population subgroups. These reasons for not drinking provide potential messaging themes for future research to test the effectiveness of alcohol reduction communications.

Source: Martinez-Matyszczyk P, Drabble LA, Munroe C, Surace A, Karriker-Jaffe KJ. Reasons for not drinking: Demographic variation and health risk awareness among abstainers and former drinkers in a national survey. *Addict Behav Rep.* 2026 Aug 25;24:100739. <https://doi.org/10.1016/j.abrep.2026.100739>

A scoping review of Dry January: evidence and future directions

Dry January is a temporary alcohol abstinence challenge where participants commit to abstaining from drinking alcohol for one month. It has grown in popularity since its inception >10 years ago. A scoping review sought to broadly characterize the peer-reviewed literature on Dry January, summarise its main findings, strengths and limitations, and delineate future research directions.

In total, 90 publications were screened and 16 were reviewed. Findings revealed that compared to drinkers in the general population who did not participate, Dry January participants tended to report having higher incomes, completed university education, reported being female, younger, and engaging in heavy drinking at baseline.

Those who consumed light to moderate amounts of alcohol were more likely to report successfully

abstaining than heavier drinkers. Among successful abstainers, short- and mid-term sustained reductions in self-reported alcohol use and improved biological outcomes, well-being, and drink refusal self-efficacy were observed. Benefits were also reported among those who did not fully abstain.

Most Dry January participants would participate in the program again. Overall, Dry January demonstrates significant promise and warrants more rigorous research. As nearly all extant research derives from the United Kingdom, future research should investigate applications and effects beyond that population.

Source: Stowger M, Meisel MK, Uriarte S, Colby SM, A scoping review of Dry January: evidence and future directions, *Alcohol and Alcoholism*, Volume 60, Issue 5, September 2025, agaf057, <https://doi.org/10.1093/alcalc/agaf057>

The effects of alcohol-related breast cancer warnings and binge-drinking frequency on alcohol consumption intentions among young adult females in the United States

Awareness of alcohol consumption as a breast cancer risk remains limited among young adult women in the US. An experiment examined how female young adults aged 18–29 reporting past 30-day alcohol consumption responded to health warnings about the risk of alcohol for developing breast cancer. Researchers assessed associations between health warning exposure, binge-drinking frequency, negative affect, perceived threat of alcohol harms and behavioural intentions to reduce or stop drinking alcohol and seek information about alcohol health effects.

The study found that exposure to alcohol health warnings increased negative emotional reactions, such as worry or fear ($\beta = 0.12$), which were linked to greater concern about alcohol-related harms ($\beta = 0.35$). People who binge drank more frequently also reported stronger negative emotional reactions ($\beta = 0.21$) and greater concern about the risks of alcohol ($\beta = 0.13$).

Greater concern about alcohol-related harms was associated with stronger intentions to reduce

drinking ($\beta = 0.24$), stop drinking ($\beta = 0.17$), seek information about alcohol-related harms ($\beta = 0.34$), and discuss these risks with friends or healthcare professionals ($\beta = 0.31$). It was also linked to greater support for health warnings on alcohol products ($\beta = 0.15$).

Overall, the findings suggest that alcohol health warnings may encourage people to consider changing their drinking behaviours by triggering emotional reactions and increasing awareness of alcohol-related risks. The researchers recommend designing warnings that take account of high-risk drinking patterns and encourage emotional engagement with health risks.

Source: Wang N, Massey ZB, Anbari AB, Adediran A, Martinez-Matyszczyk P, McCarthy DM, Investigating effects of alcohol-related breast cancer warnings and binge-drinking frequency on alcohol consumption intentions among young adult female participants in the United States, *Health Education Research*, Volume 41, Issue 5, October 2026, cyag031, <https://doi.org/10.1093/her/cyag031>

Alcohol consumption patterns and binge drinking behaviours among working populations: implications for occupational health and workplace safety

Alcohol consumption and binge drinking are major public health concerns with clear implications for occupational health and workplace safety, particularly in physically demanding or safety-sensitive jobs. However, differences in alcohol-related risk across occupational groups remain insufficiently explored.

A retrospective observational study analysed medical records from 1,264 workers who underwent routine occupational health surveillance in Palermo, Italy, between 2023 and 2025. Participants were classified as white-collar workers (Work 1; $n = 607$) or blue-collar workers (Work 2; $n = 657$). Alcohol use was assessed with the Alcohol Use Disorders Identification Test Consumption (AUDIT-C) questionnaire, and participants were categorised as abstinent, low-risk, or at-risk drinkers according to sex-specific thresholds. Binge drinking was defined as consuming six or more standard drinks on one occasion.

Blue-collar workers showed higher AUDIT-C scores and were more likely to fall into higher alcohol-risk categories than white-collar workers. Binge drinking was reported by 43% of participants and was more frequent among blue-collar workers than white-collar workers (47% vs. 38%). Female sex, younger age, blue-collar occupation, and single marital status were independently associated with greater alcohol-related risk.

These findings suggest that occupational and sociodemographic factors jointly shape alcohol-risk patterns, supporting targeted, workplace-based, and gender-sensitive prevention strategies.

Source: Malta G, Vinci DL, Cannizzaro E, Vaccaro F, Fiorella F, Plescia F, Cascioferro S, Lavanco, G, Plescia F, Comparative analysis of alcohol consumption patterns and binge drinking behaviours among working populations: implications for occupational health and workplace safety, *Journal of Public Health*, 2026, fdag064, <https://doi.org/10.1093/pubmed/fdag064>

Associations among alcohol sensitivity, acquired tolerance, and drinking outcomes in late adolescence

Alcohol tolerance is a core diagnostic feature of alcohol use disorder, yet little research has investigated its role in risky drinking during late adolescence. Low sensitivity to alcohol sedation is also linked to alcohol use disorder risk, but few studies have examined how acquired tolerance and alcohol sensitivity concurrently relate to heavy drinking. A study examined the concurrent and prospective associations of acquired tolerance and alcohol sensitivity with heavy drinking among late adolescent heavy drinkers ($N = 308$, ages 18–21, 52.6% female).

At baseline, participants completed self-report measures of acquired tolerance, early and current alcohol sensitivity, and alcohol-consumption outcomes. Analyses tested for differences in alcohol tolerance and sensitivity by family history (FH) of alcohol use disorder and path analyses examined associations and indirect effects from a positive FH and age at first/regular drinking to alcohol sensitivity, acquired tolerance, and heavy drinking. Positive FH and early regular drinking

were associated with greater acquired tolerance, lower sensitivity to alcohol sedation, and greater heavy drinking. In supplemental prospective analyses involving a subset of participants who completed a 1-year follow-up, acquired tolerance predicted 1-year follow-up heavy drinking, whereas alcohol sensitivity did not. Concurrent indirect effects from positive FH and early regular drinking to heavy drinking episodes, through acquired tolerance and low sedation sensitivity, were found; however, prospective indirect effects were only found through acquired tolerance.

Findings suggest that acquired tolerance may represent a key mechanism linking a positive FH and early regular drinking to heavy drinking in late adolescence.

Source: Chavarria J, Wardell JD, Vetreno RP, Hendershot CS. Associations among alcohol sensitivity, acquired tolerance, and drinking outcomes in late adolescence. *Exp Clin Psychopharmacol*. 2026 Oct 1. <https://doi.org/10.1037/pha0000881>

The association between family environment and underage drinking in Ireland

Mid-adolescence is a critical developmental stage for the onset of drunkenness and binge drinking. In the West of Ireland, 34.1% of adolescents reported binge drinking in the 2020 Planet Youth analysis compared with 35.6% in the present 2022 study.

A study estimated the associations between family environment factors and underage drinking among 15-16-year-olds and to examine reported sources of alcohol access.

Researchers conducted a cross-sectional secondary data analysis of Planet Youth 2022 Ireland survey among 4,615 15-16 year olds. The study outcomes were binge drinking and being drunk in the last 30 days. Exposures were parental monitoring, supervision, support (continuous scales), and family structure.

28.7% of 15-16 year olds reported being drunk in the last 30 days and 35.6% reported binge drinking. One standard deviation (SD) increase in

parental monitoring was significantly associated with lower odds of binge drinking (OR = 0.66; 95%CI:0.57-0.76) and being drunk (OR = 0.68; 95%CI:0.58-0.80). Similarly, one SD increase in parental support was associated with lower odds of binge drinking (OR = 0.80; 95%CI:0.72-0.90) and being drunk in the last 30 days (OR = 0.81; 95%CI:0.72-0.91) respectively. Parental supervision was not significant. The most common sources of alcohol products were friends/schoolmates, parents/carers, and pubs/shops.

Parental monitoring and support are protective of underage drinking. Peers, family members and re-aill shops were easy access to sourcing alcohol products among adolescents.

Source: Damoah LO, Nadimpalli JSS, Hailu KT, Major E, Kabir Z. The association between family environment and underage drinking in Ireland. *Ir J Med Sci.* 2026 Oct 7. <https://doi.org/10.1007/s11845-026-04605-7>

Socioeconomic status, alcohol use, and mortality

Both all-cause and alcohol mortality follow a social gradient. Studies have provided evidence of interaction between socioeconomic status (SES) and alcohol use in predicting alcohol-attributable mortality. It is unclear whether this holds true for all-cause mortality. A study examined interaction effects and investigated the role of biomarkers in all-cause mortality.

The research included data from 4,307 participants of the baseline survey (1997–2001) of SHIP (Study of Health in Pomerania)-START and a mortality follow-up from baseline until January 2023. All-cause mortality was the outcome; exposure variables were income or education as SES proxies, alcohol use, and biomarkers related to chronic alcohol consumption. Confounders were age, sex, marital status, smoking, and Body Mass Index (BMI).

The final samples (either with income or education) consisted of 3771/3939 individuals of whom 981 (26.0%) and 1047 (28.6%) died during the follow-up period. Adjusting for confounders, individuals with low income (HR= 1.31, CI= 1.11,

1.56; compared to high income) and both current abstainers that formerly consumed alcohol (HR=1.56, CI=1.27, 1.92) and individuals with high alcohol intake (HR=1.31, CI=1.03, 1.66; compared to individuals with low alcohol intake) showed increased mortality. Biomarkers were positively associated with mortality. There was evidence of statistical interaction effects, for example, increased risks in low-income current abstainers as well as individuals with moderate or high alcohol use.

The research found a social gradient in all-cause mortality that was attenuated, but not fully explained, by risk factors. There was some evidence of statistical interaction effects between alcohol use and SES, but small subgroup counts limit the certainty of related conclusions.

Source: Butovetsky I, Baumann S, Grabe HJ, et al. 2026. Socioeconomic Status, Alcohol Use, and Mortality: Results From a Prospective Cohort Study. *Alcohol: Clinical and Experimental Research* 50, no. 9: e70402. <https://doi.org/10.1111/acer.70402> .

Alcohol-attributable mortality and years of life lost in Belgium: 2013-2022

Alcohol use is a leading risk factor for premature death and disability worldwide, contributing to a wide range of chronic diseases, injuries, and social harms. While many countries have reported declines in alcohol-related harm, Belgium continues to face high levels of consumption. Despite its significant public health impact, national data on the burden of alcohol use remain scarce. A study provides estimates of alcohol-attributable mortality and years of life lost (YLL) in Belgium from 2013 to 2022.

The Comparative Risk Assessment (CRA) framework was applied to estimate alcohol-attributable burden in Belgium, using data from the Belgian Health Interview Survey, alcohol sales, and the Belgian National Burden of Disease study. Population attributable fractions were calculated for each sex, region, age group, and disease outcome. Rates and the number of deaths and YLL attributable to alcohol use were computed for individuals aged 15 and above.

In 2022, alcohol use was responsible for an estimated 4,602 deaths, an increase of 361 deaths (8.5%) since 2013, despite a decline in the age-standardised mortality rate. The burden remained consistently higher among men, who accounted

for the majority of deaths throughout the study period. Alcohol-related mortality rates decreased among adults younger than 65 years but increased among older adults, particularly those aged 85 years and above. In contrast, YLL declined overall, from 119,973 in 2013 to 111,872 in 2022. YLL remained highest among individuals aged 45–64 years, reflecting the continuing impact of premature mortality in middle age, although YLL rates increased among older adults. Neoplasms, cirrhosis of the liver, and mental and substance use disorders were leading contributors to alcohol-attributable mortality.

Alcohol-attributable deaths have increased in Belgium since 2022, particularly among older adults, while the burden of premature mortality remains high in middle-aged groups. These findings highlight the need to strengthen population-wide alcohol control measures. The estimates can serve as a baseline for monitoring alcohol-attributable mortality in Belgium in the context of the national action plan on the harmful use of alcohol.

Source: Nayani, S., Guariguata, L., Croes, S. et al. Alcohol-attributable mortality and years of life lost in Belgium: 2013–2022. Arch Public Health (2026). <https://doi.org/10.1186/s13690-026-02069-w>

Alcohol-free beer - Impact on alcohol sales and venue revenues

A UK project evaluated the impact of introducing alcohol-free (AF) beer using three behavioural 'nudges' designed to encourage consumer uptake. Nudges are subtle changes to the choice environment that encourage particular behaviours without restricting consumer choice.

The research was conducted in three pubs, which all received the same three interventions sequentially. The interventions included, first, introducing AF beer cans into the fridge; second, displaying posters; and third, offering AF beer on tap, which were followed by interviews with publicans and pub staff.

The introduction of AF beer was associated with reduced revenue from wine and spirits, while

leaving pubs' overall drinks revenue unaffected. NoLo sales were influenced by weather, with higher temperatures increasing demand. Consumers showed a preference for AF beer on tap, often choosing it over canned alternatives.

This study provides unique insights into the revenue and consumption patterns associated with introducing AF beer, highlighting its potential benefits to pub managers as well as policy makers and consumers.

Source: Waehning N, Wells V, Sohns F, Nudging Drink Choice in Pubs: The Impact of Introducing Alcohol-Free Beer on Alcohol Sales and Venue Revenues, Drug and Alcohol Review 45, no. 7: 2026. e70271, <https://doi.org/10.1111/dar.70271>.

Effects of 'no safe level' and 'cutting down' alcohol messages on problem recognition, defensive processing, and self-efficacy in heavy drinkers

A study tested a no safe level of alcohol consumption message on psychological outcomes relevant to drinking behaviour, compared with a gain-framed benefits of cutting down message. 485 adults drinking at risky or harmful levels (AUDIT-C ≥ 5) were randomised to one of three messages: Control, No Safe Level, or Cutting Down. Outcomes included problem recognition, defensive processing (message derogation, fear), risk recognition and self-efficacy.

Compared with the control, the No Safe Level message increased problem recognition (standardised mean difference = 0.22, 95% confidence interval [0.03, 0.41]), elicited stronger fear (0.92, [0.73, 1.11]), and greater derogation (0.89, [0.69, 1.09]), but reduced self-efficacy (−0.23, [−0.43, −0.02]). The Cutting Down message

modestly increased fear (0.30, [0.10, 0.49]) and reduced self-efficacy (−0.28, [−0.48, −0.08]) but had little effect on problem recognition or derogation.

Neither message affected risk recognition. Direct comparison showed No Safe Level generated more fear and derogation than Cutting Down, but effects on problem recognition were uncertain. No moderation by drinking level was found. Overall, the No Safe Level message prompted mixed psychological responses, suggesting further attention is warranted to determine exactly what public health goals such messages may assist.

Source: Morris J, & Tattan-Birch H. Effects of 'no safe level' and 'cutting down' alcohol messages on problem recognition, defensive processing, and self-efficacy in heavy drinkers: a randomized experimental study. *Psychology & Health*, 2026.1–21. <https://doi.org/10.1080/08870446.2026.2731572>

Alcohol-free and low-alcohol beverage consumption and concurrent and subsequent alcohol outcomes among young adults

Alcohol-Free and Low-Alcohol Beverages (AFLABs) have grown in popularity, yet predictors and longitudinal outcomes of their use remain unclear. A study published in the journal, *Addiction*, explored the association between AFLAB consumption and (1) concurrent and (2) subsequent alcohol consumption, risk and change measures (e.g. consequences, quit attempts, abstinence) and drinking motives among young adults.

The observational study took place in California, USA, between 2022 and 2024. Researchers collected information from 877 young adults who had consumed alcohol in the previous month. Of these, 849 took part in a follow-up survey, and 693 reported drinking alcohol at both survey stages. Individuals completed survey items on past-month AFLAB consumption, alcohol consumption (past-month heavy episodic drinking and past-year abstinence), alcohol risk and change measures (alcohol-related consequences, indicators of a change effort and the alcohol contemplation ladder) and drinking motives (from the drinking motives questionnaire).

At baseline, around 24% of participants reported drinking these beverages in the previous month. There was some evidence that people who

consumed alcohol-free and low-alcohol beverages were less likely to drink alcohol specifically to socialise, although this finding was not statistically conclusive. Participants who consumed alcohol-free or low-alcohol drinks at the start of the study were 5.1 percentage points more likely to report not drinking alcohol at the follow-up survey than those who did not use these beverages. AFLAB use was not statistically significantly associated with heavy episodic drinking, alcohol-related consequences or most change-related measures, although there was suggestive evidence of a higher likelihood of reporting a quit attempt in the past 3 months.

Use of alcohol-free and low-alcohol beverages appears to be common among young adults in California, USA, and appears to be concurrently associated with lower social drinking motives and prospectively associated with subsequent alcohol abstinence.

Source: Mann S, Siconolfi D, Rodriguez A, Seelam R, Pedersen ER, Dunbar M, et al. Alcohol-free and low-alcohol beverage consumption and concurrent and subsequent alcohol outcomes among young adults. *Addiction*. 2026; 121(10): 2845–2851. <https://doi.org/10.1111/add.70514>

Sex-based differences in heavy episodic drinking among adults in Canada, 2017–2023

Heavy episodic drinking (HED) is a key population indicator for harmful alcohol consumption. Using data from the Canadian Community Health Survey, researchers examined recent trends in sex-based differences in HED among adults by age group from 2017 to 2019 and 2022 to 2023. The overall prevalence of HED was 20.5% (95% CI: 20.1, 20.8) in 2017 to 2019 and 20.3% (95% CI: 19.9, 20.8) in 2022 to 2023, with males reporting higher HED overall, but sex-based differences appeared smaller across all age groups.

Among ages 18 to 25, females reported higher HED than males in 2022 to 2023, indicating a convergence and potential reversal in sex-based

differences from 2017 to 2019. The researchers suggest that increasing HED among adult females may reflect longer-term alcohol consumption trends, targeted marketing, stress coping, and reduced stigma. In addition, females face greater physical health risks at lower levels of alcohol than males, including liver disease and breast cancer, under-scoring the value of sex-specific and gender-responsive public health strategies.

Source: Hobin E, Baghaie L, Schwartz N, Fu SH, Forbes S, Smith B. Sex-based differences in heavy episodic drinking among adults in Canada, 2017–2023: a repeated cross-sectional analysis. *Health Promot Chronic Dis Prev Can.* 2026;46(9):332-7. <https://doi.org/10.24095/hpcdp.46.9.04>

Diet and physical activity profiles among college students: Associations with alcohol use and ‘better for you’ product choices

This study examined college students’ health behaviours (diet/exercise), perceived “better for you” (BFY) alcohol consumption (e.g., low-calorie), and associated alcohol-related outcomes.

547 college students completed an online survey. Latent profile analysis (LPA) identified subgroups based on diet and physical activity. Demographics were predictors, while BFY consumption, alcohol use, and consequences were concurrent outcomes.

A quarter of the sample consumed BFY products, primarily hard seltzer. LPA identified three profiles: Walkers/Poor Diet (66.48%); High Activity/Poor Diet (27.75%); and Moderate Activity/Diet (5.77%). Males were more likely to be in the High Activity/

Poor Diet and Moderate Activity/Diet profiles. These “healthier” profiles exhibited higher levels of alcohol consumption and consequences than other groups. BFY consumption was the same across profiles.

Students engaging in high-intensity exercise or BFY consumption may face increased risk for heavy drinking. Findings suggest healthy behaviours may co-occur with problematic alcohol use.

Source: Strowger M, Speed SN, Vest NA, Ward RM. Diet and physical activity profiles among college students: Associations with alcohol use and ‘better for you’ product choices. *J Am Coll Health.* 2026 Sep 20:1-13. <https://doi.org/10.1080/07448481.2026.2721427>

Predictors of binge-drinking behaviours among college students

Researchers used a machine learning approach to examine how marijuana use, social connectedness, psychological distress, and demographic characteristics predicted binge drinking among 31,120 college students from the 2021-2022 Healthy Minds Study.

A random forests analysis (machine learning) assessed the influence of predictors of binge drinking, and partial dependence plots and mixed-effects logistic regression were used to determine the direction of each predictor.

Marijuana use, older age, lower religiosity, depression, and diminished sense of belonging were among the strongest predictors of binge drinking.

This study found that marijuana use, emotional distress, and diminished belonging were associated with higher predicted risk of binge drinking, whereas loneliness showed the opposite pattern. Younger age and higher religiosity were associated with lower predicted risk of binge drinking. Findings may inform risk stratification and campus-level prevention efforts that integrate mental health and substance use services.

Source: Li T, Lautenschlager R, Zhou A. Understanding predictors of binge-drinking behaviors among college students: a random forests analysis. *J Am Coll Health.* 2026 Sep 25:1-14. <https://doi.org/10.1080/07448481.2026.2729708>

Social and Policy research by publication date

Sociodemographic disparities in binge and heavy drinking among U.S. Adults, 2024. Published online May 22, 2026

Low-cost alcohol products account for a disproportionate share of privatized off-premises alcohol sales across 42 US States. Published online: July 10, 2026

Social media, drinking motives, and alcohol use in young adults: a longitudinal mediation study. Available online 17 July 2026, Version of Record 21 July 2026

Reasons for not drinking: Demographic variation and health risk awareness among abstainers and former drinkers in a national survey. Available online 25 August 2026, Version of Record 27 August 2026

At-a-glance – Sex-based differences in heavy episodic drinking among adults in Canada, 2017–2023: a repeated cross-sectional analysis. Published: September 2026

Socioeconomic status, alcohol use, and mortality: results from a prospective cohort study. First published: 05 September 2026

A scoping review of Dry January: evidence and future directions. Published: 08 September 2025

Effects of ‘no safe level’ and ‘cutting down’ alcohol messages on problem recognition, defensive processing, and self-efficacy in heavy drinkers: a randomized experimental study. Published online: 12 September 2026

Comparative analysis of alcohol consumption patterns and binge drinking behaviours among working populations: implications for occupational health and workplace safety. Published: 16 September 2026

Investigating effects of alcohol-related breast cancer warnings and binge-drinking frequency on alcohol consumption intentions among young adult female participants in the United States. Published: 17 September 2026

Alcohol-attributable mortality and years of life lost in Belgium: 2013–2022. Published 18 September 2026.

Diet and physical activity profiles among college students: Associations with alcohol use and ‘better for you’ product choices. Published online: 20 September 2026

Understanding predictors of binge-drinking behaviours among college students: a random forests analysis. Published online: 25 September 2026

The impact of introducing alcohol-free beer on alcohol sales and venue revenues in the UK. First published: 25 September 2026

Alcohol-free and low-alcohol beverage consumption and concurrent and subsequent alcohol outcomes among young adults. Available online 25 September 2026, Version of Record 27 September 2026

Associations among alcohol sensitivity, acquired tolerance, and drinking outcomes in late adolescence. Published October 2026

The association between family environment and underage drinking in Ireland. Published: 07 October 2026

Resolution on Europe’s Beating Cancer Plan adopted

The European Parliament’s Committee on Public Health adopted a resolution on 28 September 2026 calling for stronger action on cancer prevention, early detection and access to treatment as part of Europe’s Beating Cancer Plan. The resolution, approved by 27 votes to 8, with five abstentions, is scheduled for a full European Parliament vote on 11 November. Members of the European Parliament (MEPs) are calling for at least €10.05 billion to be allocated to health in the EU’s next long-term budget, including €2.5 billion specifically for cancer prevention and treatment. The resolution highlights alcohol consumption as a cancer risk factor and calls for stronger measures to reduce alcohol-related harm.

The proposed measures include mandatory health information, ingredient lists and

nutritional labelling on all alcoholic beverages, alongside public awareness campaigns about the health risks of alcohol.

MEPs are also calling for an updated EU alcohol strategy that prioritises preventing alcohol consumption among minors, raising public awareness and reducing young people’s exposure to alcohol advertising and sponsorship. The resolution sets out recommendations for strengthening cancer prevention across Europe but does not introduce new legal restrictions. Any changes to alcohol advertising or labelling laws would require separate legislative proposals and approval through the EU’s usual law-making process.

<https://www.europarl.europa.eu/news/en/press-room/20260928IPR47808/fighting-cancer-stricter-rules-equal-access-to-treatment>

New rules pave the way for businesses to adopt digital proof of age for alcohol sales

Pubs, bars, restaurants, shops and music venues across England and Wales can now accept digital proof of age for alcohol purchases, following new rules introduced in September 2026. Customers can use certified digital ID apps on their smartphones to confirm they are aged 18 or over, without needing to carry physical identification. Age checks can be completed by scanning a QR code or tapping a phone against a compatible reader, making the process quicker and more convenient. Digital IDs can also improve privacy by allowing customers to verify their age without sharing personal information, such as their name or address, while helping businesses detect fake or borrowed identification and prevent underage alcohol sales.

The government has not specified exactly how each app must operate, but providers must meet approved security and identity verification standards. Customers will be able to choose from certified apps, including those offered by the Post Office, Yoti and Luciditi. These services must also ensure that the digital ID belongs to the person using it, preventing people from borrowing someone else's phone to purchase alcohol. The

scheme is voluntary for both businesses and customers, and physical identification will remain valid. The changes follow a 2024 government consultation in which 72% of respondents supported digital age verification for alcohol purchases. Industry representatives have welcomed the move, highlighting its potential to improve convenience, security and efficiency.

Digital Government Minister Stephanie Peacock said, "From pubs and restaurants to music venues and festivals, licensed businesses carry out millions of age checks every year. It will remain an individual or business' choice whether to use or adopt it, and physical ID will remain a valid way for customers to prove their age.

"This groundbreaking change in the law will mean you do not need to carry a physical ID, nor hand over sensitive personal information such as your name or address just to prove your age - allowing everyone to feel safer on a night out".

<https://www.gov.uk/government/news/new-rules-pave-the-way-for-businesses-to-adopt-digital-proof-of-age-for-alcohol-sales>

Poland's parliament approves tougher alcohol sales and advertising restrictions

Poland's lower house of parliament, the Sejm, has approved legislation introducing a nationwide ban on retail alcohol sales between 10 pm and 6 am, a complete ban on alcohol advertising and promotion, and higher alcohol licensing fees. The bill passed by 400 votes to nine, with four abstentions, and is scheduled to take effect on 1 January 2027, subject to completing the legislative process.

Restaurants and other venues serving alcohol for consumption on the premises would be exempt from the nighttime sales ban, while local authorities could introduce additional restrictions on off-premises alcohol sales, including bans between 9 pm and 10 pm or between 6 am and 9 am. The law prohibits advertising and promoting all alcoholic beverages with tougher penalties for violations, including fines of up to one million zlotys or imprisonment.

The packaging must also display visible health warnings about alcohol consumption during pregnancy, drinking and driving, and the risks alcohol poses to people under 18. Sellers will be required to check customers' identification if there is doubt about their age and refuse sales if valid identification is not provided.

The legislation also doubles permit fees for alcohol sales. The fee for beverages containing up to 18% alcohol will rise from 525 zlotys (\$142) to 1,050 zlotys (\$284), while the fee for beverages containing more than 18% alcohol will increase from 2,100 zlotys (\$567) to 4,200 zlotys (\$1,134).

<https://www.aa.com.tr/en/europe/polish-parliaments-lower-house-approves-nighttime-alcohol-sales-advertising-bans/4083753>

New Finnish report highlights changing youth attitudes to alcohol

Substance-free lifestyles are becoming increasingly popular among young people in Finland, although alcohol continues to be widely accepted and is gaining popularity, according to the Youth Culture and Substances Report 2026, published by Finnish prevention organisation EHYT on 22 September. The survey found that 58% of respondents considered being substance-free fashionable, while 39% viewed alcohol as trendy, compared with 29% who considered it unfashionable. Although most young people recognised that alcohol carries health risks, it was generally perceived as less harmful than

other substances and remained a normal part of social life. Drinking was commonly associated with having fun, socialising, relaxing, escaping everyday pressures and peer influence. Underage access to alcohol also remains a concern, with 73% of respondents believing it was fairly or very easy for minors to obtain alcohol. Among those who had accessed alcohol before turning 18, friends and acquaintances were the most common source.

<https://www.nordicalcohol.org/post/new-finnish-report-highlights-changing-youth-attitudes-to-alcohol-nicotine-drugs-and-gambling>

European Parliament approves alcohol policy wording that drops “no safe level”

The European Parliament has reportedly approved revised alcohol policy wording that focuses on harmful and excessive drinking rather than explicitly stating that no level of alcohol consumption is safe. According to a report published on 29 September 2026, the text, linked to the EU’s wider cancer prevention agenda, distinguishes between moderate consumption and harmful or compulsive drinking. The decision was welcomed by Italy’s wine industry, including Unione Italiana Vini, which argues that alcohol policies should distinguish between different drinking patterns rather than treating all consumption equally. However, public health organisations continue to advocate stronger warnings about the health risks associated with alcohol, including its links to cancer.

The revised wording could influence future EU policies on alcohol labelling, advertising, health warnings and prevention campaigns, although it does not introduce binding legislation. The reported text also maintains a focus on protecting minors and exploring digital labelling to provide consumers with more detailed product information. While the wine industry views the exclusion of the ‘no safe level’ wording as a positive development, disagreements remain between industry representatives and public health advocates over how alcohol-related risks should be communicated. <https://www.vinetur.com/en/20260929107956/european-parliament-approves-alcohol-policy-wording-that-drops-no-safe-level.html>

Burnham brands ban on football fans drinking alcohol in stands as ‘discrimination’

UK Prime Minister, Andy Burnham, has called for a review of restrictions preventing football supporters from drinking alcohol in the stands during men’s matches in England, describing the rules as discriminatory compared with those governing other sports. Under current legislation, spectators attending matches involving clubs in the top five tiers of English men’s football are prohibited from consuming alcohol within sight of the pitch, while similar restrictions do not apply to other sports. Burnham argued that football fans should not be treated differently and suggested

that relaxing the rules could be tested through a trial. The Football Supporters’ Association (FSA) has also called for the legislation to be reconsidered, describing it as outdated. However, senior police representatives have expressed concerns about the potential consequences of relaxing the ban and have requested discussions with the Prime Minister to explain the challenges associated with policing football matches and maintaining public safety.

<https://www.bbc.com/news/articles/c933ky0knxko>

New alcohol policy measures in Latvia produce rapid public health gains

New alcohol restrictions introduced in Latvia have been linked to a significant reduction in alcohol-related deaths, according to an early evaluation by the World Health Organization (WHO). During the first five months following the introduction of the measures, between August and December 2025, deaths from conditions entirely caused by alcohol, including alcohol poisoning, alcohol-related liver disease and acute pancreatitis, fell by 27%, equivalent to more than 60 deaths potentially prevented. The restrictions, introduced on 1 August 2025, include shorter alcohol retail sales hours, mandatory delays for online alcohol deliveries, restrictions on alcohol sales in gambling venues, limits on small alcohol packaging, and bans on alcohol price advertising, discounts and promotional offers. The measures aim to reduce impulse purchases, late-night drinking and easy access to alcohol. Latvia has one of the highest alcohol consumption rates globally, with an estimated 23.3% of adults experiencing alcohol use disorders, compared with 10.7% across the European Union.

The WHO suggests that reducing alcohol availability can help prevent alcohol-related deaths and improve public health, particularly in countries with high levels of alcohol consumption. Based on the early findings, the organisation recommends that Latvia maintains its restrictions, strengthens enforcement of online alcohol sales and regularly reviews alcohol taxation to prevent alcohol becoming more affordable. Additional measures could include stronger protections for young people and mandatory health warnings on alcoholic drinks, including information about cancer risks. However, the WHO emphasised that the findings are preliminary, as only five months of data were available following the reforms. Further research and longer-term monitoring will be needed to confirm the impact of the restrictions and assess their effects on other health outcomes, including cardiovascular disease, injuries and deaths from other causes.

<https://www.who.int/europe/news/item/28-09-2026-new-alcohol-policy-measures-in-latvia-produce-rapid-public-health-gains>

Saboteurs campaign highlights why can healthier choices be so difficult

Cancer and other non-communicable diseases (NCDs) represent a significant portion of the disease burden in Europe, much of which is preventable. The Joint Action Prevent Non-Communicable Diseases (JA PreventNCD) project is designed to address this challenge by supporting strategies and policies that aim to reduce the burden of cancer and NCDs, focusing on both personal and societal risk factors.

JA PreventNCD has launched 'The Saboteurs', a new public health campaign that uses humour to highlight how everyday environments can make healthy choices more difficult. Focusing on alcohol, tobacco and nicotine, nutrition, and physical activity, the campaign challenges the idea that improving health is solely a matter of individual responsibility. Instead, it draws attention to how factors such as pricing, product availability, advertising, commercial practices, transport, urban planning and social circumstances influence people's behaviour. For alcohol, this includes addressing affordability, availability and marketing, alongside providing clear health information and access to support.

The campaign highlights the burden of non-communicable diseases (NCDs), which account for 91% of deaths and 87% of health loss in the EU. According to JA PreventNCD, approximately 1.8 million NCD deaths are considered avoidable each year across the WHO European Region, with around 60% potentially preventable through reducing risk factors and implementing effective public health measures. The campaign's central message is that healthier choices become easier and more accessible when individual support is combined with healthier environments and stronger public policies.

preventncd.eu/prevention



Draft rules allow individual community leaders to tailor liquor laws to local needs in Canada's Northwest Territories

The government of Canada's Northwest Territories is proposing changes to how alcohol is sold, purchased and regulated, with the aim of giving local communities greater control and simplifying rules for businesses.

The proposed regulations, which support the new Liquor Act passed in 2023, were open for public consultation until 16 October. Finance Minister Caroline Wawzonek said the changes would modernise alcohol laws that have not been updated since 2007, replacing territory-wide rules with a more flexible system that reflects the needs of individual communities. The proposals would also make it easier for communities to manage alcohol entering and leaving their areas.

The proposed changes would simplify alcohol licensing and strengthen enforcement. Different

types of special occasion permits would be combined into a single application, while tourism businesses would have more flexibility to serve alcohol during outdoor tours and activities. The existing Liquor Licensing Board would be replaced by a registrar within the Northwest Territories Liquor and Cannabis Commission to manage applications, alongside a chief inspector responsible for ensuring businesses follow the rules. Inspectors would also be able to issue immediate financial penalties for breaches, rather than requiring businesses to attend formal hearings. The government says these changes would make alcohol regulation clearer, more efficient and more responsive to local needs.

<https://www.cbc.ca/news/canada/north/new-territorial-liquor-regulation-proposals-9.7363532>

Minimum price for alcohol price rises by 30% in Wales

In October the Welsh Government increased the minimum unit price of alcohol from 50p to 65p, raising the lowest legal price at which beer, wine, cider and spirits can be sold. The policy was introduced in Wales in 2020 and this price increase follows a public consultation. The change was first announced in February.

The price change aims to reduce harmful drinking and alcohol-related deaths, which increased by more than 50% in Wales between 2019 and 2023. The Government said inflation had weakened the effectiveness of the previous 50p rate, and estimates suggest the increase could prevent

more than 900 deaths over the next 20 years and reduce the number of harmful drinkers by nearly 5,000. The policy affects cheaper, high-strength alcohol, with no impact on drinks already sold above the new minimum price. Alcohol Change UK welcomed the increase, arguing that moderate drinkers would see little change in costs. However, some residents and businesses expressed concerns about the financial impact on consumers and the hospitality sector, which is already facing significant pressures.

<https://www.bbc.co.uk/news/articles/cxr505v5g0gvo>

100+ professionals in Spain complete Wine in Moderation's Responsible Service training

More than 100 wine and hospitality professionals in Spain have completed Wine in Moderation's Responsible Service online training programme during its first year. Delivered in Spain by the Federación Española del Vino (FEV), the programme aims to help professionals promote responsible drinking, communicate effectively with consumers and apply responsible service practices in their daily work. Participants praised the training's interactive and practical approach, highlighting the relevance of its content to the wine and hospitality

industries and its usefulness in real workplace situations. Feedback also demonstrated strong interest in continued professional development and accessible training tools.

The initiative aims to strengthen responsible alcohol service across the wine and hospitality sectors, while improving consumer awareness and supporting more informed drinking choices.

<https://wineinmoderation.eu/news/100-professionals-in-spain-complete-wine-in-moderation-s-responsible-service-training>

Cancer Council Australia calls for mandatory alcohol advertising regulations

Cancer Council Australia has welcomed recommendations from a federal parliamentary committee to introduce mandatory alcohol advertising and marketing regulations, replacing the country's predominantly industry-led voluntary system. In its report on the health impacts of alcohol and other drugs, the Standing Committee on Health, Aged Care and Disability proposed a new regulatory framework aimed at reducing alcohol marketing exposure among children and vulnerable groups, restricting the use of personal data for targeted advertising without consent, establishing consistent rules across television and digital platforms, and introducing monitoring and penalties for non-compliance. The committee also recommended removing the Australian Government's representative

from the Alcohol Beverages Advertising Code Scheme Management Committee to strengthen regulatory independence.

Cancer Council Australia has urged the Government to adopt these recommendations, highlighting alcohol's established links to at least some types of cancer, including breast, liver and bowel cancer. The organisation also called for mandatory health warning labels on alcoholic products to improve public awareness of cancer risks and support informed decisions about drinking.

<https://www.cancer.org.au/about-us/news-and-media/media-releases/cancer-council-australia-backs-push-for-mandatory-alcohol-advertising-laws>

5% of Europeans consumed alcohol daily in 2025

In 2025, 4.8% of people aged 16 or over in the EU consumed alcohol every day. The share of people who consumed alcohol every week was 19.2%, and 21.8% for those consuming every month.

The majority of people either consumed alcohol less frequently than every month (20.7%) or had never consumed alcohol or had not done so in 2025 (33.5%).

Within the EU, daily, weekly and monthly drinking of alcohol were more common among men than women: in 2025, 56.5% of men consumed alcohol at least every month, compared with 35.9% for women.

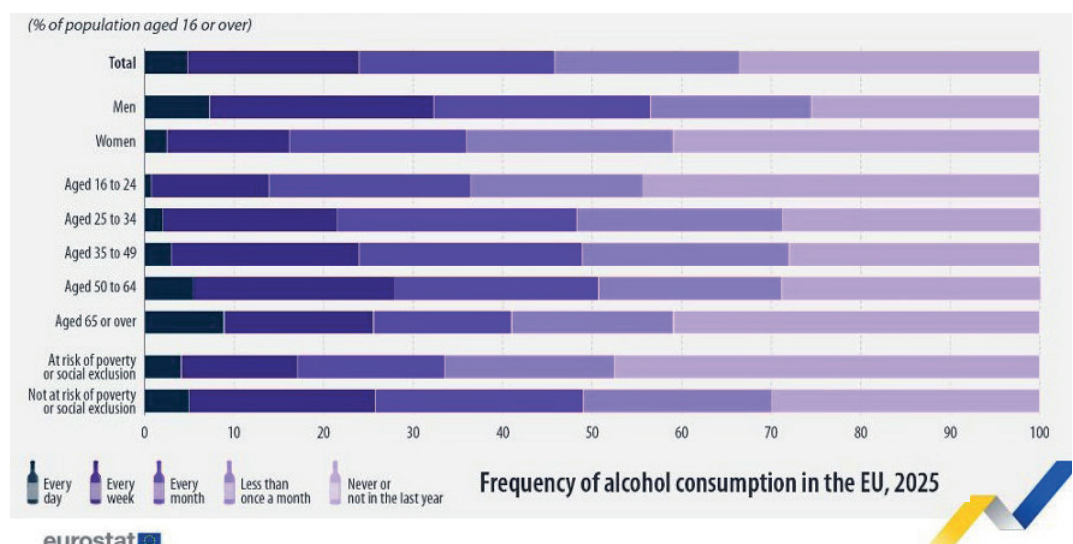
The share of the EU population consuming alcohol every day increased with age, from 0.8% among people aged from 16 to 24 to 8.9% among people aged 65 or over.

People at risk of poverty or social exclusion were less likely to consume

alcohol than those not at risk. Consequently, the share of those who had never consumed alcohol or had not done so during the previous year was much higher for people at risk of poverty or social exclusion (47.5%) than for those not at risk (29.9%).

This information comes from Key figures on European living conditions – 2026 edition. The publication outlines the key findings on living conditions in the EU, with a special focus on its most vulnerable groups.

<https://ec.europa.eu/eurostat/en/web/products-key-figures/w/ks-01-26-036>



Increasingly, Flemish adults drinking little or no alcohol

The proportion of adults in Flanders, Belgium, who rarely or never drink alcohol has increased from 36% in 2022 to 44% in 2026, according to a survey of 2,292 people commissioned by the cancer charity Kom op tegen Kanker. The findings, published to coincide with Sober October, show that 18% of respondents never drink alcohol, while 26% drink only occasionally. Awareness of alcohol-related health risks is also improving, with fewer people believing that moderate drinking benefits heart health or that one alcoholic drink a day is harmless. However, knowledge of the link between alcohol and cancer remains limited, with 50% unaware of the increased risk of bowel cancer and 75% unaware of the link to breast

cancer. Support for stricter alcohol regulations is also growing, with 60% favouring a minimum purchasing age of 18 for all alcoholic drinks, compared with 55% in 2022. Social pressure to drink appears to be declining, while alcohol-free alternatives are becoming more popular, with 59% having tried alcohol-free beer and 32% alcohol-free wine. The charity welcomed these changes but emphasised the need for better public information about alcohol's health risks to help people make informed decisions about their drinking.

<https://www.vrt.be/vrtnws/en/2026/10/01/more-and-more-flemings-are-drinking-alcohol-rarely-or-never/>

Alcohol and drug use declines among Flemish teenagers, but binge drinking remains a concern

Alcohol and illegal drug use among teenagers in Flanders, Belgium, has declined significantly over the past decade, although progress in reducing alcohol consumption has recently stalled, according to a survey by the Flemish Expertise Centre on Alcohol and Other Drugs (VAD). The study, involving nearly 37,000 secondary school pupils during the 2024–2025 academic year, found that the proportion who had ever consumed alcohol fell from 65% in 2013–2014 to 46%, while past-year drinking declined from 58% to 40% and weekly drinking from 14% to 9%. However, binge drinking remains a significant concern, with 23% of pupils reporting at least one episode in the previous year, rising to 46% among 17- and 18-year-olds. Monthly binge drinking has

not declined in recent years, while alcohol-related problems, including difficulties at school, contact with the police and hospital admissions, have become more common among young drinkers. Meanwhile, cannabis use has halved over the past decade, falling from 18% to 9%, and the use of other illegal drugs remains very low. The findings highlight improvements in teenage substance use overall, but also underline the need for continued prevention efforts to address harmful drinking patterns and their consequences.

<https://belgashare.be/newsrooms/70/press-releases/36823/flemish-teenagers-consume-less-alcohol-and-drugs-but-some-positive-trends-are-weakening/>

Kenya announces intelligence-led crackdown on illicit alcohol and drugs

Kenya's Government has announced a new intelligence-led approach to tackling illicit alcohol and drug trafficking, with Deputy President Kithure Kindiki confirming plans to introduce covert enforcement operations targeting illegal supply networks. The renewed campaign will focus particularly on the importation and diversion of ethanol, alongside tighter regulation and stronger cooperation between government agencies and other sectors. Kindiki said previous enforcement efforts had been undermined by

political interference and competing commercial interests, which had weakened progress against illicit alcohol and drugs. The new strategy aims to address these challenges through more discreet, intelligence-driven investigations and coordinated enforcement, preventing political and business interests from disrupting efforts to reduce the availability of illicit alcohol and drugs.

<https://www.tuko.co.ke/kenya/642395-kindiki-announces-covert-operations-kenyas-crackdown-illicit-alcohol-drugs/>

HBSC report on young people in the Netherlands

Since 2001, the Health Behaviour in School-aged Children (HBSC) study in the Netherlands has been conducted every four years among a nationally representative group of students in the final year of primary school (Group 8) and young people aged 12 to 16 in secondary education. The seventh study was carried out in the autumn of 2025 by researchers from Utrecht University and the Trimbos Institute.

The latest results show that the percentage of secondary school students who have ever consumed alcohol or engaged in binge drinking, or have consumed alcohol within the past month—is lower in 2025 than in 2021. However, among students who drink monthly, the percentage of binge drinkers has not decreased since 2021 but has risen slightly (from 74.7% to 76.7%).

39.1% of students have ever consumed alcohol, 21.8% have done so in the past month, and 16.8% engage in binge drinking (consuming 5 or more glasses on a single occasion). Boys and girls are almost equally likely to have consumed alcohol at some point in their lives. Among 14-year-old secondary school students, 21.7% have consumed alcohol in the past month; for 16-year-olds, this figure is 51%.

Secondary school students who consume alcohol tend to drink heavily: 76.7% engaged in binge drinking over the past month. Among secondary school students who drink, 6.7% consume more than ten alcoholic drinks on a single weekend day. Binge drinking is less common among VWO students who drink compared to students at other educational levels. Students with a migration background are less likely to have ever consumed alcohol, but among those who do drink, there is no difference in binge drinking rates compared to their peers without a migration background. Students from affluent families are more likely to have consumed alcohol than their peers from less affluent families; they also engage in binge drinking more frequently. Students living in split-family situations drink alcohol more often than students living with both parents, and with a single parent. Parents have become stricter: in 2025, 61.3% of students are not permitted to have even a single alcoholic drink at home, whereas in 2013, this figure was 47.7%.

The study shows that 11.5% of students in the final year of primary school have ever consumed alcohol, while 1.9% have done so in the past month.

<https://hbscnederland.nl/download/1854/?tmstv=1789628107>

Trinidad and Tobago Senate approves tougher alcohol, tobacco, cannabis and gambling laws

Trinidad and Tobago's Senate has approved legislation to raise the legal age for alcohol and tobacco use from 18 to 21, and for cannabis use and gambling to 25, alongside significantly tougher penalties for offences. The Miscellaneous Provisions (Alcohol, Cannabis, Dangerous Drugs, Gambling and Tobacco) Bill, 2026, which amends seven existing laws, introduces substantial increases in fines and prison sentences, including penalties of up to 30 years. People aged 18–20 caught drinking or possessing alcohol or using tobacco could face fines of \$50,000. Knowingly selling alcohol to someone under 21 could result in a \$50,000 fine and 15 years in prison for a first offence, rising to \$300,000 and 30 years for repeat offences. Using children to sell, purchase or deliver alcohol could also attract a \$300,000

fine and a 30-year prison sentence. Additional restrictions would apply to liquor licence holders, with potential fines and licence revocation for allowing children into certain alcohol-selling or drinking areas.

The Government has defended the legislation as a necessary public health measure. However, Opposition and Independent senators raised concerns about restricting the rights of 18-year-olds who are legally considered adults, the limited local evidence supporting the changes, and the severity of the proposed penalties. The bill will be sent to President Christine Kangaloo for assent before becoming law.

<https://www.guardian.co.tt/news/fines-to-soar-prison-terms-hit-30-years-under-proposed-alcohol-and-gambling-laws-6.2.2678901.adff35f262>

Spain halts Bill to lower drivers' blood alcohol limit

Spain's effort to lower the legal blood alcohol limit for drivers has been put on hold after the dissolution of Parliament ahead of a snap general election, a setback that the country's top traffic official said came just as the measure appeared close to passage.

The measure had advanced in the lower house only days earlier. On Sept. 29, Spain's Congress approved the initial consideration of a Socialist Party bill that would have tightened the legal threshold for drinking and driving. The proposal sought to amend the traffic law by classifying as a serious offense driving with alcohol levels above 0.1 milligrams per litre of exhaled air or 0.2 grams per litre of blood, up to the current general limits of 0.25 milligrams per litre of breath or 0.5 grams per litre of blood.

The initiative now falls with the current legislature, after Prime Minister Pedro Sánchez called early elections and the Cortes, Spain's Parliament, was dissolved. An earlier opportunity to pass the measure failed in March, when the text was rejected in the Interior Committee, which has full legislative powers on such matters. Pere Navarro, the head of Spain's Directorate-General for Traffic said the DGT had expected the second attempt to succeed.

<https://www.vinetur.com/en/amp/20261008108591/spain-halts-bill-to-lower-drivers-blood-alcohol-limit.html>

Google to roll out a major change to alcohol advertising on YouTube

Google is easing its restrictions on personalised alcohol advertising on YouTube from 30 October 2026, allowing advertisers to target users with ads for alcoholic beverages, alcohol-related products and alcohol alternatives in countries where such advertising is legally permitted.

The change marks a shift from Google's previous policy, which classified alcohol as a sensitive advertising category subject to restrictions on personalised targeting. Google said the update reflects growing advertiser interest in emerging product categories and improvements in advertising controls and data protection. However, existing safeguards will remain in place, including bans on targeting minors, using alcohol-related health information for personalised advertising and promoting excessive or dangerous drinking. Users will also retain the ability to limit alcohol-related advertising through Google's My Ad Center. The change will not initially apply in Egypt, India, Indonesia or Poland. Google also introduced revised alcohol advertising policies on 30 September to establish a more consistent global framework. The changes will give alcohol marketers greater opportunities to target YouTube audiences, while requiring them to comply with local advertising laws and Google's existing age and content restrictions.

<https://tech.yahoo.com/social-media/articles/google-unveils-big-change-alcohol-191540971.html>

Lithuania moves to restrict alcohol-free beer and wine sales to minors

Lithuania is proposing new legislation to ban the sale of certain alcohol-free drinks, including alcohol-free beer and wine, to people under 18. The proposed amendment to the country's Food Law would prevent minors from buying or receiving non-alcoholic beverages marketed using recognised alcoholic drink names, such as beer or wine. Retailers would also be required to check identification if they were unsure of a customer's age and refuse sales if identification was not provided. The proposal received parliamentary support in May 2026, with 66 votes in favour, seven against and 26 abstentions. It was submitted to the European Commission in July, with a review period ending on 13 October 2026, and the proposed rules are scheduled to take effect on 1 November 2026, subject to approval.

The proposed restrictions aim to protect young people by preventing alcohol-free products from normalising drinking and introducing minors to alcohol-related habits and culture. Lithuania already restricts products aimed at children that imitate alcoholic beverages or their packaging. Although research has not established that consuming alcohol-free drinks causes young people to drink alcohol later in life, some studies suggest a possible association. The World Health Organization has also raised concerns about the marketing and growing popularity of alcohol-free alternatives, particularly those linked to established alcohol brands.

<https://www.nordicalcohol.org/post/lithuania-moves-to-restrict-alcohol-free-beer-and-wine-sales-to-minors>

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 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

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