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## Russia

A 10% decrease in alcohol-related deaths in Russia has been attributed to an unseasonably warm winter. The past winter was the warmest since records began in 1891. Russia's National Center for Alcohol Policy Development has reported that 619 people died from alcohol poisoning in January 2020, down 37.3% from the previous year.

Pavel Shapkin, the head of Russia's consumer protection union commented that there was a direct correlation between an increase in temperatures and a decline in spirits consumption. Russia has also introduced several measures to cut down on alcohol consumption under President Vladimir Putin, including a sales ban after 11 pm, minimum retail price increases for spirits and an advertising blackout.

## Australia

Food Standards Australia New Zealand (FSANZ) has been asked to review its draft for pregnancy warning labels on alcohol, following suggestions that the proposed model could place an "unreasonable cost" on the industry.

The Australian and New Zealand Ministerial Forum on Food Regulation met on 20 March and considered the proposed amendment by FSANZ, which suggested a mandatory warning label in red, white and black. It asked that FSANZ reconsider wording and colour requirements on the label, therefore delaying implementation by at least three months.

Brewers Association of Australia CEO Brett Heffernan commented Australia's major brewers support the move to mandate pregnancy warning labels but it must be workable.

## Iceland

Minister of Justice Áslaug Arna Sigurbjörnsdóttir wants to legalise advertising for alcohol, saying that the current ban isn't working and discriminates against Icelandic producers. It has been reported that a parliamentary bill is being drafted which, if passed, would make alcohol advertisements legal in Iceland.

The minister has also recently presented a draft bill to Alþingi which would allow for Iceland's state-run liquor stores to sell alcohol online. It is currently legal for Icelanders to buy alcohol from foreign companies and have it

shipped to their homes (subject to import duties), but they must go in-person to purchase alcohol sold in Iceland.

She asserted that allowing Icelandic alcohol producers to start advertising would give them an equal footing with their foreign counterparts. "There are, of course, alcohol ads everywhere today—when we're watching foreign sports on TV, browsing foreign magazines, or on all these social media sites today," adding that since the ban isn't working, it would make more sense to set specific regulations on advertising.



## Differences in evaluating confounding in epidemiologic studies when judging the effects of alcohol consumption on the risk of cardiovascular disease

Wallach JD, Serghiou S, Chu L, Egilman AC, Vasiliou V, Ross JS, Ioannidis JPA. Evaluation of confounding in epidemiologic studies assessing alcohol consumption on the risk of ischemic heart disease. *BMC Medical Research Methodology* 2020;20:64 doi.org/10.1186/s12874-020-0914-6

### Authors' Abstract

**Background:** Among different investigators studying the same exposures and outcomes, there may be a lack of consensus about potential confounders that should be considered as matching, adjustment, or stratification variables in observational studies. Concerns have been raised that confounding factors may affect the results obtained for the alcohol-ischemic heart disease relationship, as well as their consistency and reproducibility across different studies. Therefore, we assessed how confounders are defined, operationalized, and discussed across individual studies evaluating the impact of alcohol on ischemic heart disease risk.

**Methods:** For observational studies included in a recent alcohol-ischemic heart disease meta-analysis, we identified all variables adjusted, matched, or stratified for in the largest reported multivariate model (i.e. potential confounders). We recorded how the variables were measured and grouped them into higher-level confounder domains. Abstracts and Discussion sections were then assessed to determine whether authors considered confounding when interpreting their study findings.

**Results:** 85 of 87 (97.7%) studies reported multivariate analyses for an alcohol-ischemic heart disease relationship. The most common higher-level confounder domains included were smoking (79, 92.9%), age (74, 87.1%), and BMI, height, and/or weight (57, 67.1%). However, no two models adjusted, matched, or stratified for the same higher level confounder domains. Most (74/87, 85.1%) articles mentioned or alluded to "confounding" in their Abstract or Discussion sections, but only one stated that their main findings were likely to be affected by residual confounding. There were five (5/87, 5.7%) authors that explicitly asked for caution when interpreting results.

**Conclusion:** There is large variation in the confounders considered across observational studies evaluating the impact of alcohol on ischemic heart disease risk and almost all studies spuriously ignore or eventually dismiss confounding in their conclusions. Given that study results and interpretations may be affected by the mix of potential confounders included within multivariate models, efforts are necessary to standardize approaches for selecting and accounting for confounders in observational studies.

### Forum Comments

All epidemiologic studies seek to judge the "true" relations between whatever exposure is being evaluated (e.g., alcohol intake) and relevant outcomes, especially disease and death. Most studies try to include in their multivariable analyses all potential confounders for which they have data. It is appreciated that many studies have incomplete assessments of potential confounders, especially the new genetic factors currently being widely studied. Thus, failure to include all potential factors should be expected in an individual study.

In the present paper, based on a recent meta-analysis of alcohol and disease (including coronary heart disease, CHD) from the Global Burden of Disease, it appears that their assessment of confounding was based primarily on the number of confounders reported for each paper, and some studies considered a huge number of potential confounders. The authors report that the most common confounders adjusted for were (appropriately) smoking, age, BMI, height and weight, physical activity, and education. However, it can be assumed that many of the additional factors that were counted would not be expected to have an effect on the results; for example, included in their list of potential confounders were gastritis, friends, fish/fruit intake, emotional control, parity, life control, contraception, car use, truancy, blood hemoglobin, divorced parents, vitamins, run away from home, ulcer, and siblings. If the present analyses are based only on the total number of confounders used in each study, this could cause problems in interpretation; judging the magnitude of effect of each potential confounder on estimating risk of the outcome would be preferable.

Need to have adequate measures of the "exposure," including the type of beverage and pattern of drinking: It appears that using this meta-analysis, the authors were limited in their ability to judge the measures used to define the exposure in their analyses. For example, a key factor in all such analyses is the assessment of alcohol exposure: often, the "average" intake over a week/month/year are used in the analyses, but data on the pattern of drinking may be incomplete or unavailable. In too many studies, subjects consuming 7 drinks on two



days of the week are combined with those drinking two drinks on 7 days per week, and included within the same category and classified as “moderate drinkers.” The health effects within this category will differ markedly according to the pattern of drinking.

The pattern of drinking as well as the type of beverage consumed are important modifiers of the effect of alcohol on CHD; consumers of wine almost always show more favorable health effects than consumers of other beverages. Even with adjustments for these variables, studies almost always show a J-shaped curve between alcohol and risk. And this is not a new finding, since almost two decades ago Grønbaek et al published findings from Copenhagen studying more than 20,000 persons with respect to mortality and alcohol type. Compared with nondrinkers, light drinkers who avoided wine had a relative risk for death from all causes of 0.90 (95% CI, 0.82 to 0.99) and those who drank wine had a relative risk of 0.66 (CI, 0.55 to 0.77). Wine drinkers had significantly lower mortality from both CHD and cancer than did non-wine drinkers ( $P = 0.007$  and  $P = 0.004$ , respectively).

It is further appreciated that information on other factors related to alcohol intake varies among studies. For example, adjusting for previous alcohol consumption among current “non-drinkers” is usually found to be a very important modifier of effect among populations with a relatively large number of ex-drinkers, but would essentially have no effect if the population has a very small number of such subjects. For example, it would not be expected to be relevant in a study of Asian women, who generally drink little alcohol, if at all. Thus, a particular potential confounder may not be relevant in certain situations. In any case, most papers include a large number of potential confounders in their analyses initially, but exclude many that appear to not be important for their population in their final analyses.

Should all studies adjust for the same confounding factors? We are not quite sure if every study should adjust for the same set of confounders when assessing alcohol consumption in relation to the risk of CHD. Sometimes so called multivariable-adjusted models may over-adjust for alcohol effect on risk of CHD. And we know that alcohol consumption habit often forms in

early adulthood, while epidemiologic studies of CHD are conducted among older populations; thus, the alcohol exposure is not an incident, but a prevalent, risk factor. This makes selection of potential confounders more challenging because some confounders may be mediators of the effect of alcohol consumption.

Residual confounding in meta-analyses: Problems related to adjustments for confounding have been found by many authors (e.g., Groenwold et al, Hemkens et al, Munkholm et al, Ioannidis et al). This may be especially important in meta-analyses, where there may be important differences in the populations studied, in the assessment of intake, and in the ascertainment of outcomes (in addition to differences in potential confounders considered).

Our Forum recently reviewed one of the papers from the Ioannidis’ group on vibration of effects in studies assessing alcohol consumption and the risk of breast cancer (Chu et al). That paper concluded that “Greater transparency when it comes to the choice, measurement, and impact of potential confounding variables is necessary. Without these efforts, the associations reported in observational studies of alcohol consumption on ischemic heart disease may need to be interpreted with great caution.” In our Forum critique of this paper ([www.alcoholresearchforum.org/critique-236](http://www.alcoholresearchforum.org/critique-236)), reviewers appreciated the attempt to explain differences in results of studies to get a more valid estimate from meta-analyses of the true relation of alcohol consumption to the risk of breast cancer. The authors’ analyses presented were done appropriately; however, Forum members considered that their approach to dealing with such differences in meta-analyses may not be especially useful or valid. Many Forum members considered that results from single, large-scale and well-done studies might provide more precise estimates of true effect.

What is the magnitude of effect of specific confounding factors? This paper does not delve into the importance of an attempt to judge the extent to which each omitted factor might affect their results; if the estimated effects would be minimal, the absence of a single potential confounder from an analysis may not be that important. Further, it turns out that the type of beverage consumed may be important, and most studies show wine



consumption to usually relate to more favorable results compared to consumption of beer or spirits; considering all types of alcohol together may not be appropriate. Grønbaek mentions some possible confounders related to wine drinkers: better self-reported subjective health, superior intelligence, drinking pattern and a healthier diet. However, regarding diet as confounder he concludes that (1) there is no clear evidence that there is a large protective effect of the healthy diet on morbidity or mortality; (2) that studies suggesting any such protective effect have not controlled their results for intake of alcohol or type of alcohol; and (3) that it appears that even a very strong confounder (odds ratio = 0.3 or 0.1) would have to exhibit a very uneven distribution among wine drinkers and non-wine drinkers to fully explain the findings of the demonstrated relation of wine and CHD.

From their study of alcohol and coronary disease, Poikolainen et al stated: "Of the 16 comparisons (of potential major confounders) under study, seven showed significant differences between never-drinkers and light drinkers. Five of the differences favoured never-drinkers and two showed a disadvantage. The latter were low BMI and low leisure-time physical activity, both more common among never-drinkers than among light drinkers. In contrast, smoking, sleep disturbances, trait anxiety, effort-reward imbalance and dependent life events were less common among never-drinkers than among light drinkers." The authors found that the differences associated with such factors were unlikely to be large enough to explain the lower risk observed among light drinkers compared to abstainers; they concluded that no single one of the risk factors studied was a likely candidate for an unknown confounder that had a large effect on their results.

Is it necessary for authors to point out specifically in a paper that residual confounding is present? While residual confounding is to be expected in all observational studies, the authors of the present paper seem to be perturbed that some authors do not especially point out that their results "may be affected by residual confounding" or do not explicitly "ask for caution when interpreting results." These limitations are fundamental for all observational studies, one that knowledgeable readers know well. (Similar to "further research is needed.") Such statements should be assumed

for all observational studies, as no study can address all possible confounders. (Or perhaps the underlying concern of the authors of the present study are particularly interested in ensuring that any documented health benefits of alcohol consumption be discounted, based on an underlying perspective that alcohol can never be declared to be "beneficial" for health.)

The bottom line: what do essentially all studies of alcohol and disease indicate? Finally, the authors seem to ignore one key fact: in essentially all of these studies, regardless of variations in the number or type of confounders evaluated, the net results indicate a "J-shaped curve" for the relation of alcohol to CHD. This is not discussed. Thus, the relation of alcohol intake to CHD may be analogous to the relation of randomly collected measurements of blood pressure to the risk of CHD. Even though there is huge variability in the way blood pressure is measured (e.g., a rushed reading by a nurse as soon as someone comes into a medical office, a well-calibrated seated measurement after a period of rest, use of various devices, etc.), the net result is that blood pressure, however measured, turns out to always be an important risk factor for heart disease. Regardless of the many variations in confounder assessment that are apparently of serious concern to the authors of this paper, the consistency of results of epidemiologic studies on the effects of alcohol on CHD risk suggest that differences in potential confounders, or their number included in an analysis, may not have a major impact on results.

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### Forum Summary

The authors of the present paper compared studies included in a recent meta-analysis on alcohol consumption and the risk of coronary heart disease (CHD) for the number of potential confounding variables included in the analysis for each paper. While they found that most studies included adjustments for smoking, age, BMI, height and weight, physical activity, and education, many studies included adjustments for a multitude of other factors. They reach the conclusion that the large variation between studies in adjusting for confounding makes it impossible to accept the finding of a J-shaped curve between alcohol consumption and CHD (despite the consistency of such results).

Forum members agree that evaluating confounders in epidemiologic studies is extremely important. However, standardizing environmental confounders is not possible as there are so many, and so many yet undefined, and these confounders would be expected to vary in their influence among different populations. The authors did not focus on the key factor: the potential impact of each potential confounder. Limited research suggests that any “unknown confounder” would need to be extremely powerful to negate the reported protective effect of light-to-moderate consumption of alcohol, especially of wine, on the risk of CHD.

In addition, the authors were perturbed that many individual studies did not state specifically in their discussion that “residual confounding may be present in our results” or that “results of individual studies must be interpreted with caution.” Forum members assume that most readers of scientific reports realize that there should always be

caution in making conclusions from a single study, especially observational studies, without the authors pointing it out in their paper. It may be analogous to stating that “further research is needed,” which should be assumed for any scientific paper.

Members of the Forum acknowledge that confounding makes it a difficult process to judge causality from observational studies, but point out that potential confounders in one study may be insignificant in another. It is not possible to generate a list of potential confounders that would apply to all epidemiologic studies. However, the consistency of the J-shaped curve between alcohol intake and risk of CHD in almost all epidemiologic studies, with support from a multitude of experimental studies, strongly supports the validity of such a relation.

This critique by the International Scientific Forum on Alcohol Research is based on comments provided by the following members:

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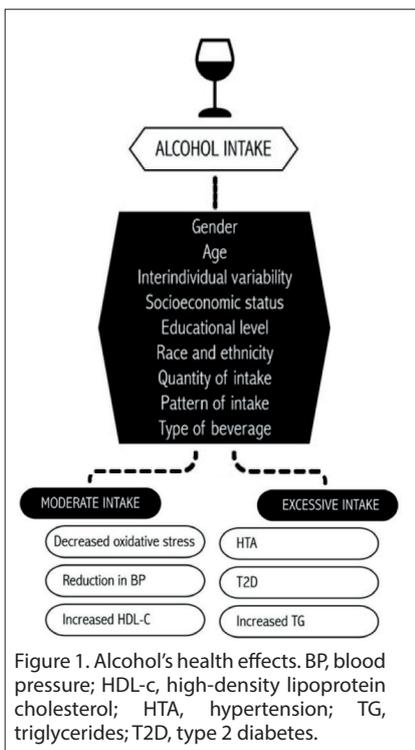
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## The effect of alcohol on cardiovascular risk factors: Is there new information?

An interesting review that assesses the effect of alcohol on cardiovascular risk factors was published in the March 27th edition of the journal *Nutrients* by Spanish and Chilean researchers.

The abstract states that 'The effects of alcohol on cardiovascular health are heterogeneous and vary according to consumption dose and pattern. These effects have classically been described as having a J-shaped curve, in which low-to-moderate consumption is associated with less risk than lifetime abstinence, and heavy drinkers show the highest risk. Nonetheless, the beneficial effects of alcohol have been questioned due to the difficulties in establishing a safe drinking threshold.



This review focuses on the association between alcohol consumption and cardiovascular risk factors and the underlying mechanisms of damage, with review of the literature from the last 10 years'.

The authors say that the effect of alcohol on cardiovascular risk factors are well established. This review shows that there are no definite associations, but trends can be specifically seen for each cardiovascular risk factor. Light-to-moderate alcohol intake, usually defined as <30 g/d, could be protective for hypertension and incident type 2 diabetes and also shows an increase in 'good' HDL-C levels that could be cardio-protective.

The authors recommend that future investigations must take into account the definition of levels and patterns of consumption, intake report by study subjects, measuring other characteristics and traits that can affect their response to alcohol consumption, and higher quality study designs are needed to avoid residual confounders. They also confirm that the deleterious effect of heavy alcohol consumption have been established by numerous studies.

Source: *The Effect of Alcohol on Cardiovascular Risk Factors: Is There New Information?* Minzer, S.; Losno, R.A.; Casas, R. *Nutrients* 2020, 12, 912. doi.org/10.3390/nu12040912. Full review - [mdpi.com/2072-6643/12/4/912](http://mdpi.com/2072-6643/12/4/912)

## Binge eating and binge drinking behaviours: the role of family functioning

Binge eating and binge drinking are two of the most common health-risk behaviours among young people and frequently co-occur in nonclinical samples of adolescent boys and girls. A study examined the role of different dimensions of family functioning in binge behaviours among adolescents. One thousand and twenty young to late adolescents (507 girls and 517 boys) with ages ranging from 16 to 22 years participated in the study and completed a survey of self-report measures.

The study found that adolescents who binge eat and drink and adolescents who only binge eat perceived a lower quality of family functioning with lower levels of cohesion, flexibility, communication, satisfaction and higher degree of disengagement compared to adolescents who do not binge and adolescents who only binge

drink. Only adolescents who engage in both binge behaviours reported higher levels of chaotic style compared to other binge groups. Furthermore, living in families poorly flexible, highly disengaged and with communication problems among members resulted as risk factors for binge eating behaviour.

The study results suggest the importance for prevention programmes to be based on an integrated approach focused on improving family environment such as the ability in changing family structure to deal effectively with developmental problems and defining clear home rules adolescents may stand on.

Source: *Binge eating and binge drinking behaviors: the role of family functioning.* Laghi F, Bianchi D, Pompili S, Lonigro A, Baiocco R. *Psychol Health Med.* 2020 Mar 31:1-13. doi.org/10.1080/13548506.2020.1742926

## Alcohol consumption in relation to carotid subclinical atherosclerosis and its progression

The association between alcohol consumption and subclinical atherosclerosis is still unclear. Using data from a European multicentre study, researchers assessed subclinical atherosclerosis and its 30-month progression by carotid intima-media thickness (C-IMT) measurements, and correlated this information with self-reported data on alcohol consumption.

Between 2002–2004, 1,772 men and 1,931 women aged 54–79 years with at least three risk factors for cardiovascular disease (CVD) were recruited in Italy, France, Netherlands, Sweden, and Finland. Self-reported alcohol consumption, assessed at baseline, was categorised as follows: none (0 g/d), very-low (0–5 g/d), low (>5 to ≤10 g/d), moderate (>10 to ≤20 g/d for women, >10 to ≤30 g/d for men) and high (>20 g/d for women, >30 g/d for men). Carotid intima-media thickness was measured in millimetres at baseline and after 30 months. Measurements consisted of the mean and maximum values of the common carotids (CC), internal carotid artery (ICA), and bifurcations (Bif) and whole carotid tree. The associations between Carotid intima-media thickness measures and

alcohol consumption categories, adjusting for sex, age, physical activity, education, smoking, diet, and latitude were described.

Adjusted differences between median carotid intima-media thickness values in different levels of alcohol consumption (vs. very-low) showed that moderate alcohol consumption was associated with lower maximum carotid-IMT and mean bifurcation-IMT at baseline and decreasing mean carotid-IMT, mean bifurcation-IMT, and mean and maximum internal carotid artery-IMT after 30 months.

In this European population at high risk of CVD, findings show an inverse, or protective relation between moderate alcohol consumption and carotid subclinical atherosclerosis and its 30-month progression, independently of several potential confounders.

**Source:** Alcohol consumption in relation to carotid subclinical atherosclerosis and its progression: results from a European longitudinal multicentre study. Laguzzi, F., Baldassarre, D., Veglia, F. et al. *Eur J Nutr* (2020). [doi.org/10.1007/s00394-020-02220-5](https://doi.org/10.1007/s00394-020-02220-5)

## Alcohol and Human Health: What Is the Evidence?

An open access review of the current knowledge on alcohol and human health by Henk F.J. Hendriks was published in the *Annual Review of Food Science and Technology* in March.

The article considers food science approaches to modulating the impacts of alcohol consumption and the impact of beverage choice, consumption level and drinking pattern. Current knowledge on alcohol metabolism and the short term effects of alcohol, as well as the longer term effects on human health and mortality are summarised.

The authors conclude that although alcohol consumption has long been a part of human culture, alcohol consumption levels and alcohol consumption patterns are associated with chronic diseases. Overall, light and moderate alcohol consumption (up to 14 g per day for women and up to 28 g per day for men) may be associated

with reduced mortality risk. Moderate alcohol consumption is associated with a risk reduction of approximately 30% for CVDs, approximately 30% for type-2 diabetes, and approximately 25% for dementia. However, chronic heavy alcohol consumption and alcohol abuse lead to alcohol-use disorder, which results in physical and mental diseases. Risk factors for alcohol-use disorder are largely unknown, but alcohol-use disorder and frequent heavy drinking have detrimental effects on personal health with increased risk of alcoholic liver disease, malnutrition, CVD, pancreatitis, various types of cancer, diseases of the brain, and FASD.

**Source:** Alcohol and Human Health: What Is the Evidence? Henk F.J. Hendriks. *Annual Review of Food Science and Technology* 2020 11:1, 1-21. [annualreviews.org/doi/10.1146/annurev-food-032519-051827](https://annualreviews.org/doi/10.1146/annurev-food-032519-051827).



## Risks of light and moderate alcohol use in fatty liver disease

The effects of alcohol use in non-alcoholic fatty liver disease are unclear. A research project investigated the impact of alcohol use in fatty liver disease on incident liver, cardiovascular, and malignant disease, and mortality.

The study comprised 8,345 persons with hepatic steatosis (fatty liver index >60) who participated in health-examination surveys (FINRISK 1992-2012 or Health 2000), with available data on baseline alcohol intake. Main exclusions were baseline clinical liver disease, viral hepatitis, ethanol intake >50 g/day, and current abstainers.

Alcohol consumption showed a dose-dependent risk increase for incident advanced liver disease and malignancies. Consuming 10-19 g/day of alcohol in general or 0-9 g/day as non-wine beverages doubled the risk for advanced liver disease compared to lifetime abstainers. In contrast, alcohol intake up to 49 g/day was associated with a 22%-40% reduction of incident cardiovascular disease (CVD). The researchers

observed a J-shaped association between alcohol intake and all-cause death with a maximal risk reduction of 21% (95% confidence interval, 5%-34%) at alcohol intake of 0-9 g/day compared to lifetime abstainers. However, these benefits on CVD and mortality were only observed in never smokers. Alcohol intake >30 g/day yielded increased risk estimates for mortality compared to lifetime abstainers. In a subpopulation with longitudinal data, alcohol intake remained stable over time in >80% of subjects.

Even low alcohol intake for those already suffering from fatty liver disease was found to be associated with increased risks for advanced liver disease and cancer. However, the study found that low to moderate alcohol use was associated with reduced mortality and reduced CVD risk in never smokers.

Source: Risks of Light and Moderate Alcohol Use in Fatty Liver Disease: Follow-Up of Population Cohorts. Åberg F, Puukka P, Salomaa V, Männistö S, Lundqvist A, Valsta L, Perola M, Färkkilä M, Jula A. *Hepatology*. 2020 Mar;71(3):835-848. doi.org/10.1002/hep.30864.

## Sex differences in smoking, alcohol consumption, and risk of Parkinson's disease: A nationwide cohort study

A study assessed the influence of sex on the effects of smoking and alcohol consumption on the risk of Parkinson's disease (PD).

The population-based cohort study examined data of 6,795,816 Koreans aged ≥40 years from the Korean National Health Insurance Service database who completed a national programme for general health check-up at 2009. For a maximum 9 years' observation period, incident PD was tracked, and hazard ratios and 95% confidence intervals (CIs) were computed, adjusted for potential confounding factors for each sex group. The researchers tested interactions on the addictive scale by estimating the relative excess risk due to interaction (RERI).

A total of 3,400,538 men and 3,395,278 women were included in the analysis. 13,223 men (0.39%) and 14,818 women (0.44%) developed PD during follow-up. Current smoking and alcohol consumption independently reduced the risk of

PD in both sexes. Current male smokers tended to have a lower risk of PD than current female smokers at equal smoking intensity and duration. In contrast, at equal alcohol intakes, PD risk tended to be lower in female drinkers than in male drinkers. A superadditive interaction between smoking and alcohol was found in current male smokers (RERI, 0.19; 95% CI, 0.04 to 0.34) and female ex-smokers (RERI, 0.42; 95% CI, 0.09 to 0.76).

The authors comment that their results suggest that there are sex-related differences in individual and joint impacts of smoking and alcohol intake on the reduced risks of Parkinson's disease.

Source: Sex differences in smoking, alcohol consumption, and risk of Parkinson's disease: A nationwide cohort study. Ryul Kim, Dallah Yoo, Yu Jin Jung, Kyungdo Han, Jee-Young Lee. *Parkinsonism & Related Behaviours*, Volume 71, P60-65, February 01, 2020. doi.org/10.1016/j.parkreldis.2019.12.006.



## Binge Drinking and risk of breast cancer: Results from the SUN ('Seguimiento Universidad de Navarra') project

Different patterns of alcohol-drinking may have different effects on breast cancer even when keeping constant the total amount of alcohol consumed.

A study assessed the association between binge drinking and breast cancer risk using data from the SUN Project, a Spanish dynamic prospective cohort of university graduates initiated in 1999. A food-frequency questionnaire was embedded in the 556-item lifestyle baseline questionnaire. Participants also completed biennial follow-up questionnaires.

The analysis included 9,577 women (mean age = 34 years) with a median follow-up of 11.8 years. Among 104,932 women-years of follow-up, there were 88 incident cases of breast cancer. The researchers estimated the hazard ratio (HR) for

breast cancer associated with the exposure to binge drinking. A stratified analysis was performed according to menopausal status.

Women in the binge drinking group showed a higher risk of breast cancer (HR = 1.76; 95% CI: 1.03-2.99) compared to women in the non-binge drinking category. In the stratified analysis, a 2-fold higher risk for premenopausal breast cancer was associated with binge drinking habit (HR = 2.06; 95% CI: 1.11-3.82). This study adds new evidence on the association of binge drinking with breast cancer risk.

**Source:** Binge Drinking and Risk of Breast Cancer: Results from the SUN ('Seguimiento Universidad de Navarra') Project. Sánchez-Bayona R, Gea A, Gardeazabal I, Romanos-Nanclares A, Martínez-González MÁ, Bes-Rastrollo M, Santisteban M, Toledo E. *Nutrients*. 2020 Mar 10;12(3). pii: E731. doi.org/10.3390/nu12030731.

## Role of alcohol consumption in Alzheimer's disease, Parkinson's disease, and Amyotrophic Lateral Sclerosis

An open access article in the International Journal of Molecular Sciences examines the role of alcohol consumption in Alzheimer's disease (AD), Parkinson's disease (PD) and amyotrophic lateral sclerosis (ALS). These neurodegenerative diseases increase around the world as populations age. Environmental factors (of which alcohol is one) also play an important role in most cases.

The review looks at evidence from epidemiological studies and studies in animal and cell culture models for the three diseases. The relationship and contributing mechanisms of alcohol are different for each. Epidemiological studies have reported a reduction in the prevalence of Alzheimer's disease in individuals who drink low amounts of alcohol; low or moderate concentrations of ethanol protect against  $\beta$ -amyloid ( $A\beta$ ) toxicity in hippocampal neurons; and excessive amounts of ethanol increase accumulation of  $A\beta$  and Tau phosphorylation. Alcohol has been suggested to be either protective of, or not associated with, Parkinson's disease. However, experimental

animal studies indicate that chronic heavy alcohol consumption may have dopamine neurotoxic effects through the induction of Cytochrome P450 2E1 (CYP2E1) and an increase in the amount of  $\alpha$ -Synuclein ( $\alpha$ SYN) relevant to Parkinson's disease.

The findings on the association between alcohol consumption and amyotrophic lateral sclerosis are inconsistent; a recent population-based study suggests that alcohol drinking seems to not influence the risk of developing amyotrophic lateral sclerosis.

Additional research is needed to clarify the potential etiological involvement of levels of alcohol intake in causing or resulting in major neurodegenerative diseases, which will eventually lead to potential therapeutics against these alcoholic neurodegenerative diseases.

**Source:** Role of Alcohol Drinking in Alzheimer's Disease, Parkinson's Disease, and Amyotrophic Lateral Sclerosis. Peng B, Yang Q, B Joshi R, Liu Y, Akbar M, Song BJ, Zhou S, Wang X. *Int J Mol Sci*. 2020 Mar 27;21(7). pii: E2316. doi.org/10.3390/ijms21072316.



## Scientists discover new repair mechanism for alcohol-induced DNA damage

Researchers of the Hubrecht Institute (KNAW) in Utrecht, The Netherlands, and the MRC Laboratory of Molecular Biology in Cambridge, United Kingdom, have discovered a new way in which the human body repairs DNA damage caused by acetaldehyde, a highly reactive, DNA-damaging metabolite that is produced upon alcohol consumption. Impaired detoxification of acetaldehyde is common in the Asian population, and is associated with alcohol-related cancers. The study results are published in the scientific journal *Nature*.

When alcohol is metabolized, acetaldehyde is formed. Acetaldehyde causes a dangerous kind of DNA damage – the interstrand crosslink (ICL) – that sticks together the two strands of the DNA. As a result, it obstructs cell division and protein production. Ultimately, an accumulation of ICL damage may lead to cell death and cancer. Each cell in the body possesses a toolkit with which it can repair this type of damage to the DNA. The first line of defence against ICLs caused by acetaldehyde is the ALDH2 enzyme, that largely breaks down acetaldehyde before it causes any harm. However, not everyone profits from this enzyme – about half of the Asian population, more than 2 billion people worldwide, possess a mutation in the gene coding for this enzyme. Because they are not able to break down acetaldehyde, they are more prone to develop alcohol-related cancer.

In this study researchers investigated the second line of defence against alcohol-induced ICLs: mechanisms that remove the damage from the DNA. The investigators studied these mechanisms using protein extracts made from the eggs of the clawed frog (*Xenopus laevis*), an animal model commonly used in biology research. By using these extracts to repair an ICL formed by acetaldehyde, they discovered the existence of two mechanisms that repair ICL damage: the previously known Fanconi anemia (FA) pathway and a novel, faster route. These two mechanisms differ from each other: in the FA pathway the DNA is cut to remove the ICL, whereas the enzymes in the newly discovered route cut the crosslink itself.

With this research, the scientists provide an insight into the process of DNA damage repair. Co-lead author Puck Knipscheer commented that this type of research may lead to a better understanding of treatment for alcohol-related types of cancer, but more research will be needed to establish exactly how this novel mechanism for ICL repair works.

Source: Alcohol-derived DNA crosslinks are repaired by two distinct mechanisms. M Hodkinson, A Bolner, K Sato, A Kamimae-Lanning, K Rooijers, M Witte, M Mahesh, J Silhan, M Petek, D Williams, J Kind, J Chin, K Patel, P Knipscheer. *Nature* 2020. doi.org/10.1038/s41586-020-2059-5.

## Alcohol consumption and risks of hypertension and cardiovascular disease in Japanese men and women

An article in the journal *Hypertension Research* focuses on selected large prospective cohort studies that examined the effect of alcohol consumption on the risks of hypertension and cardiovascular disease in Japanese men and women.

There was a J-shaped association between alcohol consumption and the risks of stroke and cardiovascular disease in Japanese men, which was consistent with the findings of the studies conducted by Western countries. Few studies have been conducted to examine the effect of alcohol consumption on the risks of stroke and coronary heart disease in Asian women. The research first showed that heavy alcohol consumption

of  $\geq 300$  g ethanol/week was associated with increased risk of total stroke, hemorrhagic stroke, intraparenchymal hemorrhage, subarachnoid hemorrhage and ischemic stroke in women while light drinking was not associated with a reduced risk of stroke. Heavy drinking ( $\geq 46.0$  g ethanol/day) resulted in an increased risk of mortality from coronary heart disease in women, whereas light to moderate drinking (0.1-22.9 g ethanol/day) led to a reduced risk of mortality from total cardiovascular disease. The association between alcohol consumption and the risk of stroke was modified by social support and salt preference.

Source: Alcohol consumption and risks of hypertension and cardiovascular disease in Japanese men and women. Ikehara S, Iso H. *Hypertens Res.* 2020 Mar 13. doi.org/10.1038/s41440-020-0417-1.



## Male alcohol consumption and fecundability

Experimental and clinical studies have shown that alcohol affects male reproductive physiology, mainly by altering male reproductive hormones and spermatogenesis. However, few epidemiologic studies have examined the association between alcohol consumption and male fertility. In data pooled across Danish and North American preconception cohort studies, a study found little evidence of an association between male alcohol consumption and reduced fecundability.

Data were collected from two ongoing prospective preconception cohort studies: the Danish 'SnartForældre' (SF) study (662 couples) and the North American 'Pregnancy Study Online' (PRESTO) (2017 couples). Eligible men were aged  $\geq 18$  years in SF and  $\geq 21$  years in PRESTO, in a stable relationship with a female partner and not using contraception or receiving fertility treatment. In both cohorts, alcohol consumption/serving size was self-reported as number of beers (330 mL/12 oz.), glasses of white or red wine (120 mL/4 oz. each), dessert wine (50 mL/2 oz.) and spirits (20 mL/1.5 oz.). Overall alcohol consumption was categorized as none, 1-5, 6-13 and  $\geq 14$  standard servings per week. Total menstrual cycles at risk were calculated using data from female partners' follow-up questionnaires, which were completed every 8 weeks until self-reported pregnancy or 12 menstrual cycles, whichever came first. Analyses were restricted to couples that had been trying to conceive for  $\leq 6$  cycles at study entry. Fecundability ratios (FRs) were calculated and 95% confidence intervals (CIs) adjusted for male and female age, female partner's alcohol consumption, intercourse frequency, previous history of fathering a child, race/ethnicity, education, BMI, smoking and consumption of sugar-sweetened beverages and caffeine.

The cumulative proportion of couples who conceived during 12 cycles of follow-up were 1727 (64.5%). The median (interquartile range) of total male alcohol consumption was 4.5 (2.0-7.8) and 4.1 (1.0-8.6) standard servings per week in the SF and PRESTO cohorts, respectively. In

pooled analyses, adjusted fecundability ratios for male alcohol consumption of 1-5, 6-13 and  $\geq 14$  standard servings per week compared with no alcohol consumption were 1.02 (95% CI: 0.90-1.17), 1.10 (95% CI: 0.96-1.27) and 0.98 (95% CI: 0.81-1.18), respectively. For SF cohort, adjusted fecundability ratios of 1-5, 6-13 and  $\geq 14$  standard servings per week compared with no alcohol consumption were 0.97 (95% CI: 0.73-1.28), 0.81 (95% CI: 0.60-1.10) and 0.82 (95% CI: 0.51-1.30), respectively. For PRESTO, adjusted FRs of 1-5, 6-13 and  $\geq 14$  standard servings per week compared with no alcohol consumption were 1.02 (95% CI: 0.88-1.18), 1.20 (95% CI: 1.03-1.40) and 1.03 (95% CI: 0.84-1.26), respectively.

The study authors comment that male alcohol consumption was ascertained at baseline only, and did not distinguish between regular and binge drinking. In addition, there were insufficient numbers to study the effects of specific types of alcoholic beverages. As always, residual confounding by unmeasured factors, such as dietary factors and mental health, cannot be ruled out. Comorbidities thought to play a role in the reproductive setting (i.e. cancer, metabolic syndrome) were not considered in this study; however, the prevalence of cancer and diabetes was low in this age group. Findings for the highest categories of alcohol consumption (6-13 and  $\geq 14$  servings/week) were not consistent across the two cohorts.

The authors conclude that there is little evidence of an association between male alcohol consumption and reduced fecundability, although data from the Danish cohort might indicate a weak association between reduced fecundability and consumption of six or more servings per week.

Source: Male alcohol consumption and fecundability. Høyer S, Riis AH, Toft G, Wise LA, Hatch EE, Wesselink AK, Rothman KJ, Sørensen HT, Mikkelsen EM. *Hum Reprod.* 2020 Mar 10. pii: dez294. doi.org/10.1093/humrep/dez294.



## Effect of alcohol use on the adolescent brain and behaviour

A review published in the journal *Pharmacology, Biochemistry, and Behavior* summarises the cognitive and neural consequences of alcohol use during adolescence.

Findings from human adolescent studies suggest that binge drinking and heavy alcohol use is associated with poorer cognitive functioning on a broad range of neuropsychological assessments, including learning, memory, visuospatial functioning, psychomotor speed, attention, executive functioning, and impulsivity. Alcohol use during adolescence is associated with accelerated decreases in grey matter and attenuated increases in white matter volume, and aberrant neural activity during executive functioning, attentional control, and reward sensitivity tasks, when compared to non-drinking adolescents.

Animal studies in rodents and non-human primates have replicated human findings, and

suggest cognitive and neural consequences of adolescent alcohol use may persist into adulthood. Novel rodent studies demonstrate that adolescent alcohol use may increase reward responsiveness of the dopamine system to alcohol later in life, as well as disrupt adolescent neurogenesis, potentially through neuroinflammation, with long-lasting neural and behavioural effects into adulthood.

Larger longitudinal human cognitive and neuroimaging studies with more diverse samples are currently underway which will improve understanding of the impact of polysubstance use, as well as the interactive effects of substance use, physical and mental health, and demographic factors on cognition and neurodevelopment.

Source: Effect of alcohol use on the adolescent brain and behavior. Lees B, Meredith LR, Kirkland AE, Bryant BE, Squeglia LM. *Pharmacology, Biochemistry, and Behavior*. 2020 Mar;192:172906. doi.org/10.1016/j.pbb.2020.172906.

## Current and future experimental approaches in the study of grape and wine polyphenols interacting gut microbiota

Interactions between polyphenols and gut microbiota are a major issue of current interest in food science research.

An article in the journal of *Science Food Agriculture* critically reviews the more leading-edge approaches that have been applied so far in the study of the interactions between grape/wine polyphenols and gut microbiota. This is the case of in vitro dynamic gastrointestinal simulation models that try to mitigate the limitations of simple static models (batch culture fermentations). More complex approaches include the experimentation with animals (mice, rats, pigs, lambs and chicks) and nutritional intervention studies in humans. The main advantages and limitations as well as the most relevant findings achieved by each approach in the study of how grape/wine polyphenols can modulate the composition and/or functionality of gut microbiota, are detailed. Also, common

findings obtained by the three approaches (in vitro, animal models and human nutritional interventions) are highlighted, such as the fact that the Firmicutes/Bacteroidetes ratio tends to decrease after the feed/intake/consumption of grape/wine polyphenols. Additionally, a nematode (*Caenorhabditis elegans*) model, previously used for investigating the mechanisms of processes such as aging, neurodegeneration, oxidative stress and inflammation, is presented as an emerging approach for the study of polyphenols interacting gut microbiota.

Source: Current and future experimental approaches in the study of grape and wine polyphenols interacting gut microbiota. Zorraquín I, Sánchez-Hernández E, Ayuda-Durán B, Silva M, González-Paramás AM, Santos-Buelga C, Moreno-Arribas MV, Bartolomé B. *J Sci Food Agric*. 2020 Mar 13. doi.org/10.1002/jsfa.10378.



## A scoping review of “Responsible Drinking” Interventions

The authors of a recent study state that public health groups, researchers, the beverage alcohol industry, and other stakeholders have promoted and applied the concept of “responsible drinking” for the past 50 years. However, little is known about the state of the existing responsible drinking evaluation research and its application to policy and practice. Their project provides a scoping review of studies evaluating responsible drinking interventions. Two primary research questions guided this investigation: (1) To what extent have authors attempted to define the concept of responsible drinking while evaluating responsible drinking interventions? and (2) What is the state of the responsible drinking intervention evaluation literature?

The researchers retrieved 49 peer-reviewed articles that evaluated interventions designed to promote “responsible drinking.” Four articles provided, or attempted to provide, an explicit definition of

responsible drinking; these four definitions lacked consensus. The existing responsible drinking interventions varied considerably in terms of the messages they attempted to convey (e.g., avoid binge drinking, use protective behavioural strategies, stick to relatively safe drinking limits), again suggesting lack of consensus. Greater consensus was observed concerning the approach to evaluating responsible drinking interventions: studies typically recruited college students to complete brief, well-controlled experiments and measured potential predictors of drinking behaviour (e.g., attitudes, expectancies, intentions) rather than actual drinking behaviour. The researchers discuss limitations of this methodological approach and the need for greater consensus regarding the concept of responsible drinking.

Source: A Scoping Review of “Responsible Drinking” Interventions. Heather M. Gray, Rhiannon C. Wiley, Pat M. Williams & Howard J. Shaffer. *Health Communication*. doi.org/10.1080/10410236.2020.1733226

## Alcohol-related parental communication, alcohol use, and protective behavioural strategy use among young adults

Protective behavioural strategies (PBS) may prevent or reduce alcohol-related consequences, but some studies show they instead might be associated with increased drinking and consequences. While parents are a possible source of influence to their child’s decision making, it is unclear whether parental communication about alcohol affects drinking outcomes, with mixed findings noted in the literature. Furthermore, few studies have focussed on understanding how parental communication may impact the use of protective behavioural strategies.

A US study assessed whether alcohol specific parental communication would be associated with reduced drinking and increased use of protective behavioural strategies. 269 18- to 20-year-olds from a control group of a larger randomised controlled trial in the U.S. were followed for 3 months. Their number of drinks per week, peak drinks per occasion, negative consequences and use of PBS were assessed.

The findings revealed that parental communication was not associated with drinks per week, peak drinks per occasion, or negative consequences reported 3 months later. However, it was positively associated with limiting/ stopping drinking protective behavioural strategies, manner of drinking protective behavioural strategies, and serious harm reduction protective behavioural strategies reported 3 months later.

The study authors conclude that parental communication about alcohol may be more effective in increasing the use of protective behavioural strategies rather than reducing drinking. Research is needed to determine why parental communication may influence the use of protective behavioural strategies and how the quality or focus of communication can be strengthened to ultimately increase the impact on risk behaviours.

Source: Examining the associations between alcohol-related parental communication, alcohol use, and protective behavioural strategy use among young adults. Litt DM, Garcia TA, Lowery A, LoParco C, Galvin AM, Larimer ME, Lewis MA. *Addict Behav*. 2020 Mar 16;107:106398. doi.org/10.1016/j.addbeh.2020.106398.



## Alcohol expectancies change in early to middle adolescence as a function of the exposure to parental alcohol use

The subjective effects of alcohol, i.e., alcohol expectancies (AE), are important predictors of alcohol use. A three-year longitudinal study examined: 1) the development of enhancement, social, coping, and conformity alcohol expectancies from age 10–16; 2) the association between parental alcohol use exposure and positive alcohol expectancies among adolescents and between exposure and changes in alcohol expectancies over the six month period and 3) the moderating effect of gender on the association between exposure and change in alcohol expectancies.

755 adolescents between 10-13-years old at baseline were followed in a longitudinal study and were questioned at six months intervals over three years, resulting in seven measurements.

Adolescents most strongly endorsed enhancement alcohol expectancies. Social and coping alcohol expectancies dimensions positively increased

over time. The results indicate that exposure to either fathers' or mothers' alcohol use predicted an increase in social alcohol expectancies six months later. Exposure to fathers' drinking predicted an increase in enhancement alcohol expectancies for boys, but not for girls. No associations between parental exposure and other alcohol expectancies dimensions were found.

The authors comment that their results add to previous studies in showing that the association between parental drinking behaviour and offspring alcohol expectancies develops within short periods. Prevention should, therefore, include explicit guidelines for parents with respect to how their drinking behaviour affect their offspring.

Source: Alcohol expectancies change in early to middle adolescence as a function of the exposure to parental alcohol use, Koen Smit, Carmen Voogt, Roy Otten, Marloes Kleinjan, Emmanuel Kuntsche. *Drug and Alcohol Dependence*, 2020, 107938, ISSN 0376-8716.

[doi.org/10.1016/j.drugalcdep.2020.107938](https://doi.org/10.1016/j.drugalcdep.2020.107938).

## Micro-level factors associated with alcohol use and binge drinking among youth

An open access article published by the Public Health Agency of Canada examines the associations of micro-level factors with current alcohol use and binge drinking among a large sample of Canadian youth.

This descriptive-analytical study was conducted among high school students enrolled in the COMPASS study between 2012/13 and 2017/18. Associations between micro-level factors and likelihood of current versus non-current alcohol use and binge drinking among respondents were estimated.

Prevalence of current alcohol use ranged between 52% and 58%, and rates of current binge drinking ranged between 34% and 41% for students in the COMPASS study between 2012/13 and 2017/18. Current cannabis use was associated with a 4.5-fold increased likelihood of current versus never alcohol use, and a 4-fold increased likelihood of current versus never binge drinking compared to non-using students, between 2012/13 and 2017/18. Current smoking was associated with a

2-fold increased likelihood of current versus never alcohol use, and a 2.5-fold increased likelihood of current versus never binge drinking compared to non-smoking students between 2012/13 and 2017/18. A weekly disposable income of more than \$100 were associated with an 87% increased likelihood of current versus never alcohol use, and a 2-fold increased likelihood of current versus never binge drinking compared to students with no disposable income between 2012/13 and 2017/18.

The researchers conclude that higher disposable incomes, smoking of tobacco products and use of cannabis were associated with current alcohol use and binge drinking among youth. They comment that these findings may inform design of polysubstance use prevention efforts in high schools.

Source: Micro-level factors associated with alcohol use and binge drinking among youth in the COMPASS study (2012/13 to 2017/18) S.D. Holligan; W Qian; M de Groh; Y Jiang; S.T. Leatherdale. *Health Promotion and Chronic Disease Prevention in Canada*, Vol 40, No 3, March 2020. [doi.org/10.24095/hpcdp.40.3.01](https://doi.org/10.24095/hpcdp.40.3.01)



## The potential effects of autonomous vehicles on alcohol consumption and drink-driving behaviours

New research from Curtin University, Australia has found the introduction of driverless vehicles on our roads is likely to reduce drink-driving rates but could lead to greater levels of binge drinking.

By removing the need for a driver, autonomous vehicles (AV) are expected to substantially reduce rates of drink-driving. However, this benefit may be accompanied by an unintended negative consequence in the form of greater overall alcohol consumption due to increased availability of affordable and convenient transport.

The research assessed the extent to which drinkers may choose to use autonomous vehicles after consuming alcohol; (ii) the extent to which drinkers may consume more alcohol if they are using an autonomous vehicles afterwards; and (iii) whether demographic, alcohol-related and autonomous vehicle-related factors are associated with the likelihood of engaging in these behaviours.

A total of 1334 Australians of legal driving age who consume alcohol completed an online survey. 49% of the respondents reported being likely to

use an AV after consuming alcohol, 37% reported being likely to consume more alcohol if using an autonomous vehicle afterwards. Younger age, more frequent alcohol consumption, a positive attitude to autonomous vehicles and a preference for using 'ride-share' autonomous vehicles were associated with a greater likelihood of engaging in these behaviours.

The results suggest that the introduction of AVs is likely to reduce drink-driving rates while facilitating greater participation in heavy episodic drinking. This will constitute a challenge to policymakers in their efforts to minimise alcohol-related harms. Study co-author Simone Pettigrew, from the School of Psychology at Curtin University and The George Institute for Global Health, said with autonomous vehicles expected to become available to the mass market around the world by mid-2020, the research highlighted an emerging issue.

Source: [The potential effects of autonomous vehicles on alcohol consumption and drink-driving behaviours](https://doi.org/10.1111/dar.13055). Booth, L., Norman, R. and Pettigrew, S. *Drug Alcohol Rev.* doi.org/10.1111/dar.13055

## The influence of peer and parental norms on first-generation college students' binge drinking trajectories

Few studies have explored the alcohol use of first-generation college students. A recent study compared the binge drinking trajectories of first-generation and continuing-generation students over their first three semesters. The dynamic influence of peer and parental social norms on students' binge drinking frequencies were also investigated.

The study included 1342 college students at one private University in the US, of whom 225 were first-generation. Participants completed online surveys and the association between first-generation status and social norms (peer descriptive, peer injunctive, parental injunctive) on binge drinking trajectories was examined.

Overall, binge drinking frequency tended to decline over the first three semesters of college. After controlling for demographics, substance-free dormitory residence, parental alcohol problems and norms, first-generation status was associated with steeper declines in binge drinking frequency. During the first semester, the

association between parental injunctive norms and binge drinking frequency was stronger for first-generation students than for continuing-generation students; this influence declined over time for first-generation students. The influence of peer descriptive norms on binge drinking increased for continuing-generation students; while this influence remained stable over time for first-generation students.

The authors conclude that first-generation student status appears to be protective against binge drinking. Substance-free dormitory residence, and perceived parental and peer norms likely play a role in first-generation students' tendency to engage in binge drinking less often over the first year of college.

Source: [The influence of peer and parental norms on first-generation college students' binge drinking trajectories](https://doi.org/10.1016/j.addbeh.2019.106227). DiGuseppi GT, Davis JP, Meisel MK, Clark MA, Roberson ML, Ott MQ, Barnett NP. *Addict Behav.* 2020 Apr;103:106227. doi.org/10.1016/j.addbeh.2019.106227.



## Government, industry and consumer response to the coronavirus

The Covid-19 outbreak has had a huge impact on the lives of populations worldwide as many countries go into lockdown and with daily routines changing and many jobs put on hold, if only temporarily. The hospitality industry is particularly hard hit and alcohol consumption has moved increasingly from the on-trade to the home.

The World Health Organisation has acknowledged that many turn to drugs and alcohol in times of crisis, as a new survey suggested the pandemic has caused nearly two thirds of adults in the UK to feel anxious or worried. A WHO expert warned however that alcohol is an “unhelpful coping strategy” for the possible stress and isolation of coronavirus lockdown. Using substances to cope “can make things worse”, cautioned Dr Aiysha Malik, Technical Officer for the WHO department of mental health, “When we’re staying at home routines are very important for creating a sense of structure... Minimising the unhelpful coping strategies of using tobacco or alcohol can also be important for wellbeing and minimising content you might find distressing in the news.”

Dr Malik also emphasised that it is also vital that drug and alcohol services remain accessible throughout lockdown, as those with substance use disorders may face a higher risk of relapse.

### **Alcohol restrictions from government amid Covid-19 virus outbreak**

With the majority of countries closing nightclubs, bars and restaurants as part of lockdown measures, some governments have gone further to limit the sale of alcohol and a few governments have chosen less restrictions.

On March 17 the Estonian Government approved a nightly ban on alcohol sales across Estonia, extending it from stores to all dining facilities. Night sales of alcohol from 10 pm to 10 am will be prohibited until the end of the emergency situation. This restriction on the retail sale of alcohol aims to prevent cases of alcohol abuse that burden both the medical system and the police during the emergency situation.

In Norway, the sale of alcohol was prohibited in all restaurants and bars in Oslo although establishments serving food or take-away were

allowed to remain open if patrons are kept at a minimum distance of one meter from each other and capacity is limited to a maximum of 50 persons, including staff, in the premises.

The capital of Greenland, Nuuk enforced an alcohol ban on 28 March that is expected to run until at least 15 April. Local health minister Martha Abelsen said that domestic violence had been on the rise in recent weeks. The country’s prime minister, Kim Kielsen, also commented that the consumption of alcohol makes people “less aware of the danger of contamination”. He also said that he has taken the decision to ban alcohol in order to protect children and make sure they have “a safe home”.

“Bheki” Hamilton Cele, the South African Minister of the Police, confirmed that there would be a total ban in the sale of alcohol in South Africa for the duration of the 21-day lockdown that was declared by the government on Friday 28 March. Citing reasons for the alcohol ban, the government said that alcohol reduces a person’s ability to practice social distancing and practice good personal hygiene. It also argued that alcohol can affect the immune system, meaning that those with already weak immune systems will make themselves more susceptible to disease and said that an alcohol prohibition would “limit the possibility of an increase in incidents of domestic violence” and so reduce stress on the emergency services. South African wineries will however be allowed to finish the 2020 harvest and work in their cellars after winemaking processes were deemed “essential” right before a lockdown came into effect in the country.

Botswana announced its intention to enforce a longer ban on liquor sales than South Africa as the country entered lockdown on 28 March. No alcohol will be sold for 30 days from when Botswana’s lockdown begins.

The Zimbabwe Police are also reported to have banned the sale of alcohol in all retail outlets during the 21-day national lockdown. National Police Spokesperson Paul Nyathi said the ban was effected to minimise social disorder and to allow shops to sell only essential products during the national lockdown. Nyathi said “This comes as we have realised that people who buy alcohol at



supermarkets are giving us challenges. They buy and drink as groups, be it either in their vehicles or places of residence thereby defying social distancing”.

Following Boris Johnson’s announcement on 24 March that placed the U.K. in a ‘lockdown’ as part of the government’s measures against the Coronavirus pandemic, all shops selling ‘non-essential’ goods, including electronics and clothing, immediately had to close down. However, the updated guideline issued by his Cabinet Office the following day confirmed that off-licenses and shops licensed to sell alcohol would be allowed to keep trading alongside other businesses deemed as essential retailers. These shops, which will also include retail outlets within breweries, will join other businesses which have been allowed to remain open, such as supermarkets, pharmacies, banks and petrol stations.

In the US, liquor stores have been allowed to remain open. Despite this, many shops have chosen to close their doors to protect the health of their staff, and in some cases because staff levels are too low.

### Consumption

In Australia, Commbank reported spending was up more than 20% in the week ending 20 March, compared with the same time last year; and in the week to March 27, spending at liquor stores in Australia was up 86%. Although that rise was offset by the closure of bars, restaurants and pubs, that week Australians still spent 34% more on alcohol than at the same period the previous year.

On 1 April, large alcohol retailers in most states (except Western Australia where there are already measures in force) signed up for a voluntary code that limits the amount of liquor customers can buy in one transaction. The measures are designed to prevent panic buying and stop excess drinking during the outbreak. Beer, cider and premixed spirits are limited to two cases, and wine to 12 bottles per customer, while cask wine and bottled spirits are limited to two items each.

In the UK, the Independent reports that Google searches for “wine delivery UK” had increased by 2,250 per cent in March while “alcohol delivery” searches have increased by 250 per cent in the same time span. Demand has also spiked for

online alcohol retailers, such as Wineapp, which delivers fine wines to London residents and has seen a 1,500 per cent boost in sales. Some online wine retailers stopped taking orders and Majestic wine’s website crashed after demand for delivery tripled in the space of a week. Virtual wine and beer tastings experiencing higher demand too.

A snap consumer poll by CGA published 3 April, the specialist food and drink insight provider, revealed that 6% of people had ordered online more often than usual, another 5% had bought online for the first time, with a further 16% planning to in the coming weeks.

In the US, alcoholic beverage sales boomed by 55% in the third week of March compared to the same time a year ago, according to Nielsen. That’s when several states, including New York, ordered people to “shelter in place and restaurants and bars were ordered to close. Hard liquor sales were up 75%. Wine was up 66%, beer was up 34% and spiked seltzers, which last year were just emerging as a strong sales force, were up an 456% year-over-year for the week of March 21. Online alcohol sales are also up 243% compared to a year ago.

Nielsen said that larger packs of 24 or 30 both grew roughly 90% for the week compared to a year ago as people were preparing to limit their outside errands. Danelle Kosmal, vice president of Nielsen’s Beverage Alcohol Practice Area commented that sales in subsequent weeks will be a “better indicator of the new normal in how consumers are responding to the crisis,” as people consume the alcohol they’ve stockpiled and as more Americans lose their jobs.

### Advice and support for alcohol consumers

It appears from research that the public has also become more focused on health and wellness as a result of the Covid-19 crisis with 42% of consumers saying they are drinking less alcohol than usual, and only 14% increasing their alcohol consumption. The number of occasions that people are drinking alcohol changing, with 16% of drinkers saying drinking more often than usual, but with 37% saying they are drinking fewer times per week than before.

In Australia, DrinkWise has urged consumers to



drink responsibly during isolation. This includes a warning about the dangers of excessive drinking during self-isolation, and video messages from DrinkWise Ambassador Dr Andrew Rochford. Australian Grape & Wine has also echoed the sentiment, encouraging Australians who choose to enjoy a glass of wine to do so in moderation.

The Public Health Agency in Northern Ireland is asking the public to drink moderately "At this time, when the health service is under increasing pressures because of Covid-19, we need to act responsibly and not add to that burden. Michael Owen, Regional Lead for Drugs and Alcohol at the PHA said "Drinking too much can cause accidents around the home, which might need hospital treatment. Help protect the health service and yourself by doing all you can to avoid unnecessary problems with alcohol."

In the UK Drinkaware has tailored advice and support for those concerned about their drinking at this time ([drinkaware.co.uk/alcohol-facts/drinking-habits-and-behaviours/alcohol-and-coronavirus/coronavirus-alcohol-and-mental-health/](http://drinkaware.co.uk/alcohol-facts/drinking-habits-and-behaviours/alcohol-and-coronavirus/coronavirus-alcohol-and-mental-health/)) and in Ireland, Drinkaware.ie also issued specific guidance for those drinking during the pandemic. ([drinkaware.ie/facts/alcohol-and-covid19-coronavirus](http://drinkaware.ie/facts/alcohol-and-covid19-coronavirus)) and In the US, Responsibility.org have compiled a list of resources for Coping with Stress during Coronavirus – to provide guidance on ways to manage stress in positive, constructive ways. They comment that "as we assume new responsibilities, such as remaining indoors and practicing social distancing to help protect the medically vulnerable in our communities, we at don't want people to forget about how drinking plays into this, especially as we prepare to enter Alcohol Responsibility Month, this April.

### Addiction

Services to help those with alcohol disorders have also provided facilities online. Alcoholics Anonymous has brought its gatherings online through meeting host websites like Zoom.

For people with alcohol use disorder, there are additional concerns that some heavy drinkers could experience serious symptoms of withdrawal if they stop or reduce alcohol consumption and it may be hard to access medical care. Some organisations are offering personalised guidance on this topic to try and ensure that reductions in

alcohol consumption are achieved safely at a time when the usual sources of support and advice relating to detoxification may be less available. The Scottish Health Action on Alcohol Problems is offering advice for heavy drinkers on cutting back or stopping drinking alcohol during the Covid-19 pandemic: [shaap.org.uk/downloads/240-covid-advice-for-heavy-drinkers/download.html](http://shaap.org.uk/downloads/240-covid-advice-for-heavy-drinkers/download.html)

In Hyderabad it is reported that there has been a sudden increase in the number of people suffering from alcohol withdrawal symptoms cases in the city in view of the ongoing lockdown that has resulted in closure of liquor shops and bars. Kerala has also reported an increase in suicides due to the lack of alcohol availability.

### Other harms

More than 600 people have died of alcohol poisoning in Iran since the beginning of the coronavirus outbreak and another 3,000 people are still ill as a result of drinking unsafe alcohol in the mistaken hope it would protect them from the virus. It is reported that a number of people responsible for illegally producing alcohol have been arrested.

### Help from the Alcohol Industry

The alcohol industry has responded to the short supply of hand sanitizer, whose main ingredient is alcohol. In March, Bacardi announced that it would be producing more than 1.1 million litres of alcohol, for this cause. The spirits producer announced that its eight manufacturing facilities located in the US, Mexico, France, England, Italy and Scotland will support the production of hand sanitisers. Diageo also pledged to donate up to two million litres of alcohol to manufacturing partners, to help protect frontline healthcare workers in the fight against Covid-19. The countries to benefit will include the UK and the Republic of Ireland, Italy, the USA, Brazil, Kenya and India.

AB Inbev have donated alcohol to help in the manufacturing of more hand sanitizer around the world. In Africa, SAB's extensive fleet and route network of our breweries will be used to deliver the finished product to the most remote parts of the country. In Europe, 50,000 liters of ready-to-use disinfectant alcohol is being produced using the surplus of alcohol from alcohol-free beers. In the Middle Americas, 400,000 bottles of hand sanitizer



are being produced for donation to hospitals and local governments from Bavaria (Colombia) and Grupo Modelo (Mexico). Cerveceria Nacional Dominicana (Dominican Republic), Cerveceria Nacional (Ecuador), Backus (Peru), and others have launched similar initiatives. In North America, Anheuser-Busch and Labatt Breweries' supply and logistics networks have begun producing and distributing bottles of hand sanitizer to accommodate the growing needs across the United States and Canada and In South America, 500,000 bottles of hand sanitizer gel were produced by Ambev using leftover alcohol from alcohol-free beer and are being distributed to hospitals in Sao Paulo, Rio de Janeiro and Brasilia in Brazil.

Cargill, one of Europe's largest alcohol producers, is providing disinfecting alcohol to the health sector in the Netherlands and also Belgium and Pernod Ricard is offering alcohol from its distilleries for the production of hand sanitiser to help tackle the coronavirus pandemic in France.

London's Metropolitan Police are reported to have secured a supply of hand sanitizer from the city's gin distilleries.

#### Other measures/ help

In other responses to the pandemic, Alcohol distribution companies are pledging millions to help Spain's 315,000 establishments and nearly 1.7 million hospitality and catering workers facing an uncertain future due to the coronavirus crisis. J&B, a subsidiary of Diageo has pledged €1 million to help its Spanish and Portuguese hotel and catering clients. Also in Spain, Heineken has launched a plan to support bars, restaurants and distributors, creating the 'Heineken Guide of action for restaurants and bars'.

Diageo is to provide training from home for all professionals in the hospitality sector through an online platform offering a wide range of modules designed to increase the knowledge of bar staff and their skill set. Bacardi is also donating €2.7 million to support bars and restaurants globally.

Together, Maker's Mark owner Beam Suntory and US distributor Southern Glazer's Wine & Spirits (SGWS) have contributed US\$1 million to the USBG Foundation Emergency Assistance Programme and the Restaurant Workers' Community Foundation.

The Carlsberg Foundation, the New Carlsberg Foundation and the Tuborg Foundation are targeting extraordinary grants that can mobilise and support researchers, art museums and civil society in the scientific, economic and human efforts at a time when society is challenged by the Covid-19 epidemic. The three foundations in the Carlsberg family seek to help mitigate the challenges associated with the global Covid-19 epidemic. A total of DKK 95 million will be donated.

In the UK, The Drinks Trust's Covid-19 Emergency Fund has raised over £400,000 to support drinks industry professionals affected financially by the coronavirus pandemic. Donators to the fund include Pernod Ricard, Concha y Toro UK, Sipsmith, Whisky Auction, Fox and Fox, and Asterly Bros. Hospitality Action UK has also set up a Covid-19 Hospitality fund to make a one-off award to eligible workers suddenly facing hardship.

### Comparing distribution of healthy behaviours in Germany

A study published in the BMJ examined the extent to which prevalence rates of SNAP (smoking, nutrition, alcohol consumption, physical activity) vary between East and West Germany or North and South Germany.

The researchers found that there were higher rates of at-risk alcohol consumption and lower rates of unhealthy nutrition in East Germany compared to West Germany. Significant differences were also found between North and South Germany for at-risk alcohol consumption with higher rates of at-risk alcohol consumption in South Germany. Women were less likely to drink alcohol at a risky level than men and individuals with higher or intermediate education were more likely to report at-risk alcohol consumption than individuals with lower education. Daily smoking and low physical activity were equally distributed across regions.

This knowledge can be used to inform interventions to reduce at risk drinking, the authors say.

Source: [Do smoking, nutrition, alcohol use, and physical activity vary between regions in Germany? - results of a cross-sectional study. J Atzendorf et al. BMC Public Health volume 20, 277. doi.org/10.1186/s12889-020-8352-2](#)



## UK members of parliament Alcohol consumption survey

In March, the British Medical Journal published results of a survey of MPs, conducted in late 2016 but only just made public, which found that binge was more common among MPs than the general public.

The survey found that as a group they were more likely to “drink riskily” and consume the equivalent of a bottle of wine on a standard day than the public. And while parliament provided help for MPs with drink problems through its own health and wellbeing service, the study found more than three quarters of members were unaware of its existence.

The former Tory MP and former chair of the all-party select committee on health and social care, Sarah Wollaston, welcomed the survey. She said that although during her 10 years as an MP she had seen a definite reduction in excessive drinking by MPs, there was still a tendency for a minority to “cruise from reception to reception picking up free alcohol along the way”.

Tory MP Dan Poulter, a GP argued that the availability of alcohol at Westminster should be reduced so it was more in line with parliaments in other countries: “It is extraordinary that there are so many bars in parliament where alcohol is available at almost every hour of the day.... It is important that parliament takes note of our research and brings the working environment into the 21st century. This is particularly important for those MPs who have developed a difficult relationship with alcohol.”

A House of Commons spokesperson said efforts were being made to encourage responsible drinking: “The House of Commons Commission has agreed a number of actions to promote responsible alcohol consumption, including increasing the range of non-alcoholic drinks and lower strength beers available, expanding and encouraging alcohol-free areas, discouraging members and staff from drinking in offices after bars are shut, and not running promotional advertisements for alcohol.

[bmjopen.bmj.com/content/10/3/e034929](http://bmjopen.bmj.com/content/10/3/e034929)

## Home and Dry campaign from Drinkaware



On 11 March, prior to the lockdown in the UK, Drinkaware has launched an anti-drink driving campaign in pubs, clubs and bars to encourage drivers to stay alcohol-free.

The campaign, called ‘Home and Dry’, was designed to focused on drinkers in the on-trade and was developed

using feedback from on-trade operators and independent pubs and bars and is being supported by The British Beer & Pub Association and the Department of Transport’s ‘THINK!’ initiative.

The campaign encourages drivers to go alcohol-free and will support venues in order to achieve this. Free point-of-sale materials including posters, beer mats, bar runners and staff t-shirts will be available from Drinkaware. On-trade operators can also download digital material to use on their social media channels.

Mark Chandler, director of marketing & partnerships activation at Drinkaware said: “We’re delighted to be launching Home and Dry, a campaign that has wide support from operators as an effective way of helping them to raise awareness of the risks of drinking and driving.

“The campaign’s message is a positive one about encouraging people to choose alcohol-free drinks options if they are driving.

“Encouraging customers to go alcohol-free is easy in today’s on-trade, where the choice of alcohol alternatives has never been better. Drivers can enjoy a wide range of alcohol-free beers, ciders, wines or spirits, and get home safe at the end of the night.”

[drinkaware.co.uk/homeanddry](http://drinkaware.co.uk/homeanddry)

## NIAAA at 50: A legacy of advancing alcohol research - Reflections on five decades of innovation and progress

On December 31, 1970, US Congress passed the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act, the legislation that created the National Institute on Alcohol Abuse and Alcoholism (NIAAA). The new Institute's mandate was to "develop and conduct comprehensive health, education, training, research, and planning programs for the prevention and treatment of alcohol abuse and alcoholism." Five decades later, NIAAA is the world's largest funder of alcohol research—supporting comprehensive, multidisciplinary studies to pursue the mission of advancing and disseminating evidence-based knowledge to improve the diagnosis, prevention, and treatment of alcohol use disorder (AUD) and alcohol-related problems across the lifespan.

NIAAA is now celebrating its 50th anniversary, a milestone that has prompted NIAAA leadership to reflect on these five decades of progress:

NIAAA Director George F. Koob, Ph.D., comments, "While we have much more work to do, today we know more about how alcohol affects the brain and body than ever before, and we have better interventions to prevent and treat alcohol misuse, thanks largely to the determined and uncompromising efforts of the talented researchers supported by NIAAA. These efforts have provided the foundation for the recognition of AUD as a medical disorder ranging from mild to severe, rather than a moral failing." Patricia A. Powell, Ph.D., Deputy Director of NIAAA, adds, "We've worked hard to share this information with health professionals and the public, and I think more recently we're beginning to see a nationwide shift in attitudes about alcohol-related issues."

George Kunos, M.D., Ph.D., Director of NIAAA's Division of Intramural Clinical and Biological Research (DICBR), states, "At the time that NIAAA was established, little was known about how alcohol alters brain function. With NIAAA support, researchers have discovered how specific neuronal proteins are altered by acute and chronic alcohol exposure, and how these effects influence brain function and behaviour

Kathy Jung, Ph.D., Director of NIAAA's Division of Metabolism and Health Effects, comments: "From

its earliest years, NIAAA has championed pivotal studies on foetal alcohol spectrum disorders [FASD]. This includes ground-breaking research focused on alcohol as a teratogen, and innovative neuroimaging and neurobehavioral research in humans revealing that brain regions involved in learning, memory, attention, decision-making, emotional control, and motor skills appear to be most sensitive to prenatal alcohol exposure. Furthermore, NIAAA-supported research has advanced our understanding of FASD prevalence and the development of effective learning and behavioural interventions to help people with FASD.

Ralph Hingson, Sc.D., Director of the Division of Epidemiology and Prevention Research, reflects, "Since the founding of NIAAA, several areas of alcohol prevention have shown substantial progress. This includes NIAAA-supported research demonstrating the effectiveness of the minimum legal drinking age of 21, a key public health strategy.

"Historically, NIAAA has paid special attention to preventing and reducing underage drinking and alcohol misuse among college students, contributing to a steady decline in underage drinking over the past two decades. Also, NIAAA-funded investigators demonstrated that the younger the age that people begin to drink, the greater the likelihood they will develop AUD. NIAAA also convened a task force of college presidents and researchers in the late 1990s, culminating in a landmark report on the magnitude of college drinking problems and evidence-based interventions to prevent them. The report gave national visibility to the need to reduce binge drinking and alcohol-related consequences among college students. NIAAA has invested similarly in disseminating research findings about effective college alcohol interventions. A prime example is CollegeAIM—the College Alcohol Intervention Matrix, a resource to help college and university officials identify interventions to reduce student drinking and related problems."

[niaaa.nih.gov/news-events/news-noteworthy/niaaa-50-legacy-advancing-alcohol-research-reflections-five-decades](https://niaaa.nih.gov/news-events/news-noteworthy/niaaa-50-legacy-advancing-alcohol-research-reflections-five-decades)



## More Netherlands consumers stay within government guidelines

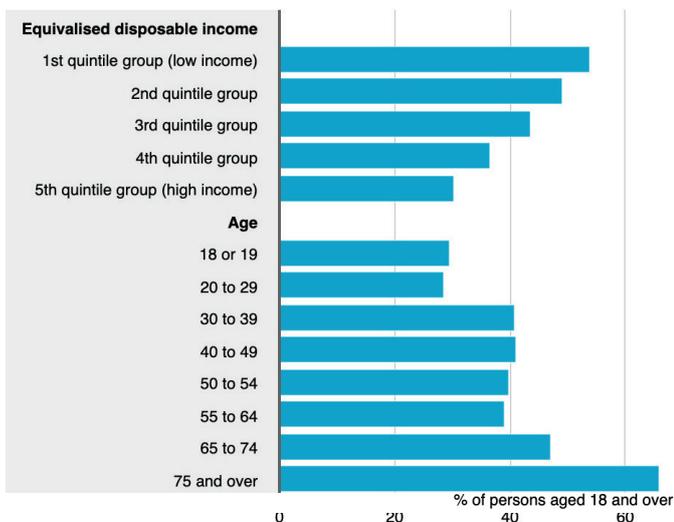
Last year, 41% of the Dutch adult population indicated they consumed up to one alcoholic beverage per day or less. This means they complied with the alcohol guidelines of the Netherlands' Health Council. Among women aged 18 and up, the share exceeded 50% and among elderly people it exceeded 60%. Smoking and drug use are less prevalent among adults who consume one drink per day or less. These are the results of the 2019 National Health Survey/Lifestyle Monitor, conducted by Statistics Netherlands (CBS) in collaboration with the National Institute for Public Health and the Environment (RIVM) and the Trimbos Institute.

In 2019, nearly 80% of adults reported they had consumed at least one drink in the past twelve months. 11% of adults had not consumed alcohol over the past twelve months but had done so in the past and 9% said they had never consumed alcohol.

As of 2015, the Health Council of the Netherlands recommends an alcohol consumption level of zero or no more than 1 alcoholic drink per day. Overall, 41% of the population aged 18 and over comply with this alcohol guideline; among men this is 30%, against 53% among women.

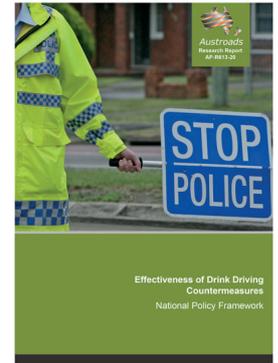
[cbs.nl/en-gb/news/2020/11/zero-or-minimal-alcohol-consumption-by-41-percent-of-adults](https://cbs.nl/en-gb/news/2020/11/zero-or-minimal-alcohol-consumption-by-41-percent-of-adults)

Compliance with alcohol guideline, 2019



## Effectiveness of drink driving Countermeasures: National Policy Framework in Australia

A report published in February provides an Australian policy and regulatory framework to encourage effective reforms to reduce and prevent drink driving and riding. The key recommendations to reduce drink driving across Australia include:



- extending a lower legal BAC limit to more drivers
- improving general deterrence through more highly visible and randomised enforcement, combined with covert operations
- expanding the use of interlock programs, with improved monitoring and case management
- working more closely with the alcohol and other drug (AOD) sectors to manage alcohol dependent drivers
- supporting measures to reduce societal use of alcohol
- fast-tracking vehicle based systems to prevent alcohol impaired driving.

Each Australian jurisdiction has a different starting point, but all can improve their policies and practices by implementing short and long term measures. These will be required to achieve the overall goal of eliminating drink driving related deaths and serious injuries.

The development of the Australian Drink Driving Policy Framework involved a literature review and development of a policy discussion paper as well as consultations with jurisdictions about current and potential drink driving countermeasures.

[austroads.com.au/publications/road-safety/ap-r613-20](https://austroads.com.au/publications/road-safety/ap-r613-20)

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

### **AIM Mission Statement**

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

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