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Finland

In Finland, The Minister of Health and Social Services, Maria Guzenina-Richardson has put forward plans to restrict alcohol advertising. According to the Minister, the purpose of the restrictions would be to protect children and teenagers from exposure to such adverts. The Federation of the Brewing and Soft Drinks Industry is opposed to the restrictions.

US

Boston Mass Transit will ban alcohol advertising from July 1 2012. The ban will include subway cars, trains and buses. According to Joe Pesaturo, spokesperson for the Massachusetts Bay Transportation Authority, the transit line's advertising contractor has said it expects advertising revenue to drop by about \$1.5 million in the first full year of the ban.

New York City and Chicago are the only other cities with major public transit systems that allow alcohol ads.

Israel

The Ministerial Committee for Legislation has approved a proposed law that prohibits celebrities from participating in marketing campaigns for alcoholic beverages. With the introduction of proposed changes, initiated by MK Danny Danon, manufacturers of alcoholic beverages will also be required to print warnings on the products' labels, similar to the warnings printed by cigarette companies.

Norway

The Market Council of Norway has issued a decision in favour of the Norwegian Health Directorate in a dispute with the Brewers' Association over images of beer on their and brewers' websites. The brewers will therefore have to continue avoiding images of beer on their sites, or add a banner covering the images, as these are regarded as alcohol advertising, which is illegal in Norway. Information about beer and other alcohol products is also prohibited on the sites.

The Brewers Association has asked the Ministry of Health and Care Services to review the alcohol advertising regulation, which they regard as outdated.

South Africa

Gauteng, a province of South Africa, has issued a draft liquor bill. The bill states that a liquor licensee may not sell, supply or give liquor to minors, anyone wearing a school uniform, anyone who appears intoxicated, or 'a pregnant woman'. The bill makes no distinction between on-premise consumption and off-premise sales of alcohol.

Adrian Botha, Director at the ARA commented that a prohibition on selling alcohol to pregnant women showed commitment to the prevention of foetal alcohol syndrome, but could prove difficult in practice.

The bill also contains draft legislation to prohibit the sale of alcohol on specified days and at specific times.

Alcohol consumption and cancer: there's more to the story - a perspective from Australia

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The Alcohol Policy Coalition published a position statement entitled Cancer, Cardiovascular Disease and Alcohol Consumption on 19 September 2011, which sought to provide rationale for alcohol policy reform in Australia[1]. This position statement provided some of the story, and the rest of the story is provided here.

It is well documented and cannot be disputed that the consumption of alcohol above the Australian National Health and Medical Research Council's (2009)[2] recommendations of not more than two standard drinks(10g)/day for both men and women is associated with adverse health effects. These can be short-term effects such as accidents, drowning and suicides generally associated with binge drinking patterns, that is, a large amount consumed in a small period of time. These can also be long-term effects associated with continuous heavier consumption, over many years, such as alcohol-related cardiovascular disease, cancers, liver cirrhosis and pancreatitis.

It is also well documented, however, in peer-reviewed published data over more than three decades that light-to-moderate alcohol consumption, that is, approximately corresponding with the recommended not more than two standard drinks/day for both men and women, is associated with a reduced risk of developing and dying from cardiovascular diseases, selected cancers, diabetes, and cognitive function disorders such as dementia^{1,2,3,4,5,6,7,8}. This equates to a reduced risk of dying from all or any causes including cardiovascular diseases and cancers, and is in comparison to both abstainers and heavy consumers. These relationships are best described as j-shaped and are most relevant for individuals aged over 40-45 years, that is, in particular for those who are at greater risk of cardiovascular disease⁹.

Alcohol and cardiovascular disease

The j-shaped relationship between the amount of alcohol consumed (g/day) and the relative risk of developing cardiovascular diseases has probably been most publicised^{10,11,12}. Light-to-moderate drinking is considered as 10 to 20 g alcohol/day or 1 to 2 standard drinks/day, and is associated a reduced risk of atherosclerosis (hardening and rigidity of the artery wall), high blood pressure, heart attacks, heart failure and ischaemic strokes from blockages of brain blood vessels.

For example, blood pressure increases after approximately two standard drinks/day for women and three standard drinks/day for men. High and high-normal blood pressure is having a systolic pressure of 130 to 139 mm Hg and/or diastolic pressure of 85 to 89 mm Hg¹³. The relationship between blood pressure and amount of alcohol consumed is then linear, an approximate 1 mmHg increase in blood pressure for each standard drink consumed. Another cardiovascular risk factor is arrhythmias or atrial fibrillation, also referred to as 'holiday heart syndrome' as they often occur with binge drinking heavy or excessive amounts on a long weekend or during holidays. This is a changed or disturbed sequence of electrical impulses causing your heart to beat either too slowly or too fast and/or irregularly, which can cause your heart to pump less effectively. The symptoms are dizziness, palpitations, shortness of breath, and chest discomfort or pain, as well as sudden death.

Eighty per cent of strokes are diagnosed as ischaemic and 20% are diagnosed as haemorrhagic (bleeding of the brain blood vessels). Drinking heavy or excessive amounts of alcohol can increase the risk of both forms of stroke. Heavy drinking can actually increase the formation of blood clots via alcohol's effects on heart muscle and on heart beats and which can block an artery in the brain. Conversely, the increased blood pressure from heavy drinking can cause an artery in the brain to rupture where the bleeding into the brain is greater due to the decreased formation of blood clots and the increased breakdown of blood clots.

The risk of all these adverse effects on the cardiovascular system reduces and reverses when alcohol consumption is reduced from heavy to light-to-moderate^{14,15,16,17,18}. Indeed, light-to-moderate alcohol consumption is associated with reduced cholesterol or fat deposits in arteries (atherosclerosis), protection against the formation of blood clots, and promotion of the break down of formed blood clots, all of which protect against heart attacks and ischaemic strokes. The alcohol component of all alcoholic beverages, combined with wine-derived phenolic compounds, are responsible for these biological effects.

This j-shaped relationship is acknowledged by the World Health Organisation^{9,19} and its recommendations specifically refer to harmful or heavy alcohol consumption. While the impact of alcohol consumption on health varies between individuals, on a global level, the protective effects of light-to-moderate alcohol consumption outweigh the adverse effects of heavy alcohol consumption on cardiovascular disease. For example, as moderate alcohol consumption reduces the risk of cardiovascular disease by approximately 25%^{20,21}, all alcohol consumption combined actually accounts for - 4.7% of the total cardiovascular disease burden in Australia.

Alcohol and cancer

Specifically, the ethanol component of all alcoholic beverages and its primary breakdown product, acetaldehyde, are toxic to the cells, organs and tissues of the body²². They are also carcinogens in humans as defined by the International Agency for Research on Cancer (IARC) in 1988 and in 1998. For example, both ethanol and acetaldehyde initiate, promote and progress cancer by directly mutating critical cells and stimulating their growth. The occurrence of malignant tumours of the oral cavity, pharynx, larynx, oesophagus (collectively known as the upper aero-digestive tract) and liver is causally related to the consumption of alcoholic beverages, as well as of the colon and rectum in men where the mucosal lining of the tract comes in direct contact with ethanol and acetaldehyde to mutate cells, and malignant tumours of the breast in women indirectly due to the alcohol-stimulated liver metabolism of estrogen. Indeed, alcohol consumption is associated with an increased risk of selected cancers, but not of all cancers.

Data suggest that in 2003 alcoholic beverages accounted for approximately 3.1% of the total cancer burden in Australia (that is, 3.1% of the years of life lost due to premature death from cancer and years of healthy life lost due to disability from cancer)^{23,24}. This figure was increased to 3.5% in 2005 and the Cancer Council of Australia suggests that this figure is now 5% when cancers of the colon and rectum are included in calculations.

It is also known that the cumulative effect of other lifestyle choices with alcohol also contributes to the occurrence of cancer. Of all lifestyle factors related to cancer, the attributable risk for tobacco is approximately 20%, that for diet is 20-50%, that

for physical inactivity is 5.6% and that for alcohol is 4-6%^{25,26,27}.

Unlike cardiovascular disease, the overall relationship between alcohol consumption and cancer is linear, where the risk increases as the consumption of an alcoholic beverage increases²⁸. The relationship, however, is complex. Low consumption hence suggests relatively low risk. In addition, there may be threshold effects in the relationship between alcohol consumption and the risk of cancers as well as other contributing factors. For cancers of the upper aero-digestive tract, liver, colon and rectum, the risk only increased when more than 25 g alcohol/day was consumed²⁹. It has also been suggested that the risk of developing a cancer of the aero-digestive tract is less when alcohol is consumed with food³⁰. A recent comprehensive review of more than 7,000 peer-reviewed papers on the association of lifestyle factors and cancer undertaken by the World Cancer Research Fund, in cooperation with the American Institute for Cancer Research (2007)³¹, reports that there are alcohol threshold effects for cancers of the colon and rectum. The review reports that an increased risk for cancers of the colon and rectum is only apparent above a threshold of 30 g alcohol/day for both men and women. The fact that not all heavy drinkers develop cancer and that some light-to-moderate drinkers develop cancer, suggests that an individual's genetics also influences their risk of developing cancer. A recent analysis of 27 cohort and 34 case-control studies by Fedirko et al. (2011)³² also suggested that there is an increase in risk (21%) for consumers averaging up to 49.9 g alcohol/day, but that the increase in risk was significantly greater (52%) for consumers of more than 50 g alcohol/day or five standard drinks/day. In addition, only approximately 10 to 15% of alcohol dependent drinkers develop cirrhosis of the liver and, of those, only 10% develop liver cancer³³.

Recent case-control analyses by Anantharaman et al. (2011)³⁴ and Szymańska et al. (2011)³⁵ of alcohol and the risk of cancers of the upper aero-digestive tract (UADT) also suggest that tobacco use is the most important factor in the risk of these cancers, and that the risk is enhanced among those who also consume two or more alcoholic drinks per day. Alcohol consumption alone among non-smokers had little effect on the risk, except for oesophageal cancer. An important observation was that among former alcohol consumers and former smokers, the increased risks associated with alcohol and tobacco use

decreased steadily as the time since quitting increased. For example, from Anantharaman et al. (2011)³⁴ concurrent tobacco use and alcohol consumption accounted for 73% of total UADT cancer burden in the European Union. This can be broken down to tobacco use alone accounted for 28.7%, alcohol consumption alone accounted for only 0.4%, but the combination of smoking and drinking accounted for 43.9% of the population attributable risk.

Concerning the relationship between alcohol and breast cancer, it has been suggested that the relationship is linear^{36,37,38} or that the relative risk of breast cancer always increases (monotonically increases)^{39,40,38} for the average daily amount of alcohol consumed. It has also been suggested that consumption patterns may modify risk⁴¹, such that the consumption of four to five drinks consumed per session may increase/double risk by 50% compared to only one drink consumed per session. Paradoxically, alcohol dependence does not increase the risk of breast cancer⁴². Alcohol consumption is also more strongly associated with hormone sensitive (estrogen receptor positive) breast cancers than those insensitive to hormones (estrogen receptor negative)^{43,44,45,46}. The concurrent consumption of alcohol and folate (at least 300 mg/day of folate) has been observed to reduce the relative risk of alcohol-induced breast cancer from 1.24 to 1.05 for women consuming greater than 15 g alcohol/day or one and a half standard drinks, and was reduced to 0.55 for women consuming greater than 600 mg/day of folate. This implies that folate protects against developing breast cancer. Indeed, the concurrent consumption of folate-containing vitamin supplements reduces the relative risk to 0.74 for women consuming greater than 15 g alcohol/day compared to those not using vitamins⁴⁷. The interaction between alcohol and folate has been observed to be primarily limited to estrogen receptor negative breast cancer tumors^{43,44,45}. This observation is consistent with an interaction of alcohol and folate on breast tissue tumors being mainly through the primary metabolite of alcohol, acetaldehyde, which is directly carcinogenic as well as indirectly carcinogenic by depleting folate, independent of circulating estrogens and estrogen receptor-mediated events. Furthermore, a recent multivariable-adjusted analysis of 2,944 invasive breast cancer cases, suggested that alcohol consumption was associated with an increase in the risk of lobular carcinoma (which comprises approximately 15-20% of breast cancers), but was

not necessarily associated with the more-common ductal carcinoma⁴⁸. For women consuming up to 12 g alcohol/day, the risk of developing breast cancer was lower for wine consumers than for consumers of other alcoholic beverages.

A relatively recent review of alcohol and cancer stated that drinking, especially heavy drinking, increases cancer risk⁴⁹. It concluded that "Total avoidance of alcohol, although optimum for cancer control, cannot be recommended in terms of a broad perspective of public health, in particular in countries with high incidence of cardiovascular disease."

Concluding thoughts...

Population ageing is occurring on a global scale, with faster ageing projected for the coming decades than has occurred in the past. Globally, the population aged 60 years and over is projected to nearly triple by 2050, while the population aged 80 years and over is projected to experience a more than five-fold increase.

Life expectancy for Australians has also increased significantly, and between now and 2050 the number of older individuals (65 to 84 years) is expected to more than double; and very old individuals (85 and over) are expected to more than quadruple from 0.4 million people today to 1.8 million in 2050[3]. Increased numbers of older individuals may have implications for associated expenditure on income support, housing and health services, although a healthy, independent older population can also form a valued social resource, for example in providing care for others, sharing skills and knowledge and engaging in volunteer activities. Evidence is mounting that older people can also increase the quality of later life.

Established in 1987, the Dubbo Study is Australia's first and longest running longitudinal study of healthy ageing, involving 2,805 non-institutionalised Dubbo residents (1,233 men and 1,572 women). Mean age at entry was approximately 70 years. The study investigated risk factors for mortality, hospitalisation and institutional or nursing home care, including cardiovascular disease and dementia, in order to provide a template for 'healthy ageing'. Interestingly, the study has observed that one alcoholic drink per day may reduce the risk of dementia by 35% for both men and women, and that independent risk factors for mortality include diabetes, very high blood pressure, cholesterol imbalances and zero intake of alcohol⁵⁰. Indeed, managing blood pressure and cholesterol in

older Australians has been shown in clinical studies to reduce the risk of cardiovascular disease and stroke and consequently the risk of all cause mortality. The results showed that alcohol consumption amongst the study subjects was moderate, less than 14 drinks/week, which was found to be associated with significantly longer survival in men up to the age of 74 years and in all elderly women. Men drinking any alcohol lived on average 7.6 months longer, and women on average 2.7 months, compared with non-drinkers. Interestingly, in men there was no evidence of a differential effect between one to two drinks on a given day and an intake of five or more drinks on a given day.

Another, but little publicised, Australian study similarly followed 7,989 individuals aged 65-83 years for five years⁵¹. One of eight selected low-risk behaviours was having no more than two alcoholic (total 20 g alcohol) drinks/day. Individuals with five or more of the selected low-risk behaviours, including light-to-moderate alcohol consumption had a lower risk of death from any cause within five years compared with those having less than five low-risk behaviours. More importantly, the study showed that while most individuals already have some healthy habits, almost all could make changes to their diet and lifestyle to improve their health.

Consequently, simple dietary measures such as light-to-moderate alcohol and wine consumption to supplement a healthy exercise and nutrition routine, or as an adjunct to prescription medicines when appropriate, may thus be needed to maintain an ageing population.

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Heart disease or mortality among moderate drinkers who occasionally binge drink in Denmark

Skov-Ettrup LS, Eliassen M, Ekholm O, Grønbaek M, Tolstrup JS. Binge drinking, drinking frequency, and risk of ischaemic heart disease: A population-based cohort study. *Scandinavian Journal of Public Health* 2011;39:880–887.

Authors' Abstract

Introduction: Light-to-moderate alcohol drinking is associated with a decreased risk of ischaemic heart disease (IHD). However, drinking heavily and in binges has been suggested to increase IHD risk. This complexity makes the issue of binge drinking within the light-to-moderate alcohol range an important area for further investigation.

Methods: This population-based cohort study included 26,786 men and women who participated in the Danish National Cohort Study in 1994, 2000, and 2005. Binge drinking (defined 4–5 drinks/day) and risk of IHD and all-cause mortality was investigated among light-to-moderate drinkers (defined ≤ 21 and ≤ 14 drinks/week for men and women, respectively). In the entire study population, we investigated the association between drinking frequency, separately and combined with total weekly alcohol intake, and risk of IHD and all-cause mortality.

Results: 1,136 individuals developed IHD during a mean follow up of 6.9 years. Among male light-to-moderate drinkers reporting occasional binge drinking, the hazard ratio (HR) of IHD was 0.81 (95% CI 0.61–1.08) compared to male light-to-moderate drinkers reporting no binge drinking. Corresponding HR for women was 0.97 (95% CI 0.54–1.76). For women drinking 5–6 days/week, the risk of IHD was lower than for women drinking 1–2 days/week (HR 0.54, 95% CI 0.32–0.90). We did not observe any patterns when looking at combinations of total weekly alcohol intake and drinking frequency.

Conclusions: Among light-to-moderate alcohol drinkers, binge drinking was not associated with risk of IHD and all-cause mortality. Overall, drinking frequency did not appear to be an important determinant of the risk of IHD and all-cause mortality.

Forum Comments

Most observational epidemiologic studies have found that binge drinking is associated with a loss of alcohol's protective effect against ischemic heart disease (IHD), with some studies finding an increase in risk among binge drinkers. This study from Denmark sought to determine if binge drinking related to IHD or all-cause mortality among what they define as 'light-to-moderate' drinkers: up to 21 drinks/week for men and up to 14 drinks/week for women. A 'drink' was considered to contain approximately 12 grams of alcohol.

Comments on study: This appears to be a well-done population-based study with good follow up and excellent ascertainment of outcomes: IHD and all-cause mortality. This was made possible by the unique civil registry number allocated to each Danish citizen at birth. This number is used in any sort of business with the authorities such as tax, social security, and health, and a social security card with the number must be presented with any contact with the national health system – a failsafe method of securing exact follow-up of all diagnoses or death.

The assessments of alcohol were based on consumption in the week prior to the examination, and binge drinking was defined as more than 5 drinks/occasion. Given that the assessment was from only one week, data were not available to judge whether or not binge-drinking episodes occurred rarely or regularly.

Data were available on the usual covariates related to IHD: smoking, education, physical activity, BMI, and self-reported hypertension and diabetes. There was a strong correlation between binge drinking and the total amount of alcohol consumed, but the authors controlled for total alcohol intake when comparing binge and non-binge drinkers.

When comparing outcomes in binge vs. non-binge drinkers, the analyses were restricted to subjects in the 'light-to-moderate' categories. Here, there were no significant differences noted between subjects who binged and those who did not. In all comparisons, the relative risk of IHD and all-cause mortality was higher for non-drinkers than for all categories of drinkers.

When relating frequency of drinking (the number of days of the week when subjects consumed alcohol) to IHD and total mortality, all subjects (not just the light-to-moderate drinkers) were included. Here, again, there were no significant differences in outcomes comparing people consuming alcohol on 1–2, 3–4, 5–6, or 7 days/week (although, once again, the highest risk was always among the non-drinkers). These results differ from those of Mukamal et al¹ and Tolstrup et al,² studies showing that frequency of consumption was a key determinant of health outcomes.

Thus, these findings do not show differences in effects of binge vs. non-binge drinking in terms of IHD or mortality. Further, the study does not show a significant effect according to the number of days per week that subjects consumed alcohol. As one reviewer

stated: "The present paper suggests that, within the group of persons following sensible drinking limits of weekly amount of alcohol intake, there does not appear to be adverse effects on the heart when not following the recommendation to avoid having more than five drinks on a single occasion."

Specific comments on the results of the present study: As a Forum reviewer commented: "The sensible drinking limits of up to 21 drinks/week for men or up to 14 drinks/week for women (1 drink = 12 grams of alcohol) proposed by the Danish National Board of Health are well known in Denmark. It is estimated that, overall, 20% of the population over 16 years of age drink in excess of the proposed drinking limits.³ However, by limiting the study of the effect of binge drinking to subjects who follow the weekly drinking limits (83.7% of the male and 90.4% of the female participants), you have restricted the analysis of binge drinking effects to a population of genuine moderate drinkers." If binge drinking among all drinkers were evaluated, the results may well have been different.

In the present analyses, a very high percentage of the 'light-to-moderate drinkers' reported binge drinking: up to 61% of men in the 14-21 drinks/week category and 35% of the women in the 7-14 drinks/week category. The median number of drinks on a binge was 9 for men and 7 for women. Despite reporting binge drinking, the overall average intake of the subjects in these analyses remained in the light-to-moderate category. Hence, although they reported binge drinking on at least one occasion in the preceding week, they were not overall heavy drinkers.

As one reviewer commented, "The combination of moderate drinking with occasional parties with intake of >5 drinks is a normal pattern of drinking in Denmark. It is assumed that many were in the habit of sharing some bottles of wine with friends on a Saturday evening and then drink very little during work days, while others prefer the daily glass of wine or beer with their meals. However, they would be very similar in other choices of lifestyle." While the type of beverage consumed was not reported in this paper, a reviewer comments: "Based on data from earlier reports from the Danish National Cohort Study, you would expect that most of the female participants are wine drinkers and that many of the moderate male consumers also prefer wine." Previous studies from Copenhagen have shown better health outcomes for wine drinkers than for consumers of other beverages.⁴ In this study, non-drinkers tended to have lower levels

of education than the moderate drinkers, as has been found commonly in other studies..

Forum comments on 'binge drinking' and health outcomes: The results of this study appear to be at odds with some previous reports. For example, Mukamal et al⁵ showed that the risk of myocardial infarction was lower for moderate drinkers than for abstainers, but that subjects reporting binge drinking lost such a putative protective effect. Some of the differences between the results of the present study and some earlier ones may reflect problems that scientists have when defining 'binge drinking.' Investigators at Harvard have suggested that the rate at which alcohol is consumed (such as the consumption of 3 or more drinks within 1 to 2 hours), rather than the total amount consumed, may be a better definition of binge drinking. Drinking over several hours while consuming food will surely have different effects than the rapid consumption of similar amounts of alcohol on an empty stomach.

One Forum reviewer suggested that the circumstances of consumption may play a major role in the health effects. He considered the concept that just counting up the number of drinks on an occasion is not adequate to diagnose binge drinking. He challenged the Forum reviewers to consider the following: "Ask yourself how many drinks you might often consume during an evening with friends, starting with a glass or two of sparkling wine, some glasses of white wine with the fish and a glass or two of red wine with the meat, and even perhaps a sweet dessert wine and maybe a tiny glass of brandy with your coffee. Count these up, and many of you might agree with a paraphrase of a famous Pogo quote by Walt Kelly: *We have met the binge drinker, and he is us*".

How to define 'sensible drinking': A European Forum member stated: "The general accepted limit of no more than 2 drinks/day for men and 1 for women may be overly conservative, especially for IHD and in European adults." Said another reviewer, "It is possible that in this selected population with a relatively small overall intake of alcohol ('genuine moderate drinkers'), the category of binge drinkers was simply a proxy for subjects with a higher amount of alcohol intake, but still within a range of alcohol that is protective. The paper states that the mean intake was 2 drinks/day for subjects with a binge pattern and 1 drink/day for non binge drinkers. Although the authors provided analysis adjusted for total alcohol intake, this fact may at least in part explain their findings."

Another Forum reviewer points out that the term binge drinking “is inconsistently defined in the literature and the definition is hence quite arbitrary. In Australia, previous alcohol drinking guidelines ‘permitted’ the occasional up to 6 standard drinks per day for men and 4 for women as not being particularly harmful; the current guideline has dropped that to 4 and 4. Further, the definition of a standard drink varies widely between countries as well, between 8 and 14 g at least, which also needs to be considered.” Referring to the ‘J-shaped curve,’ an American reviewer stated: “Many meta-analyses suggest that the risks of coronary disease and total mortality remain lower than those of non-drinkers extending out to 5 to 6 drinks/day,⁶⁻⁸ a level that most, if not all, would consider excessive. This is not often reported, as it is countered by a propensity to adverse health effects, and more importantly, is not politically correct.”

The Forum does not take the results of this single study to support binge drinking. What the Danish results suggest is that the occasional ‘dinner-binge’ embedded in a moderate consumption pattern is not harmful. As stated in the Guide to Sensible Drinking from the UK in 1995, occasional episodes of consumption greater than the recommended levels do not necessarily change the classification of a normally moderate drinker into that of an abuser.⁹

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Potentially important new mechanisms found for the anti-aging effects of resveratrol, a phenolic compound found in red wine

Park S-J, Ahmad F, Philp A, Baar K, Williams T, Luo H, Ke H, Rehmann H, Taussig R, Brown AL, Kim MK, Beaven MA, Burgin AB, Manganiello V, Chung JH. Resveratrol ameliorates aging-related metabolic phenotypes by inhibiting cAMP phosphodiesterases. *Cell* 2012;148:421-433. DOI 10.1016/j.cell.2012.01.017.

Authors' Abstract

Resveratrol, a polyphenol in red wine, has been reported as a calorie restriction mimetic with potential antiaging and antidiabetogenic properties. It is widely consumed as a nutritional supplement, but its mechanism of action remains a mystery.

Here, we report that the metabolic effects of resveratrol result from competitive inhibition of cAMP-degrading phosphodiesterases, leading to elevated cAMP levels. The resulting activation of Epac1, a cAMP effector protein, increases intracellular Ca²⁺ levels and activates the CamKb-AMPK pathway via phospholipase C and the ryanodine receptor Ca²⁺-release channel. As a consequence, resveratrol increases NAD⁺ and the activity of Sirt1. Inhibiting PDE4 with rolipram reproduces all of the metabolic benefits of resveratrol, including prevention of diet-induced obesity and an increase in mitochondrial function, physical stamina, and glucose tolerance in mice. Therefore, administration of PDE4 inhibitors may also protect against and ameliorate the symptoms of metabolic diseases associated with aging.

Forum Comments

Background: More than two decades ago, particularly through publicity related to the so-called 'French Paradox', the public became aware of the potential reduction in the risk of coronary heart disease from the moderate consumption of red wine. Initially, the media focused on a single constituent in red wine, resveratrol, as being the "key" factor. Very extensive research since then has shown that (1) resveratrol is only one of hundreds of phenolic compounds in wine, many of which have been shown to have beneficial effects on vascular function; (2) alcohol itself (present in wine, beer or spirits) provides considerable protection against heart disease; and (3) in many experimental settings, resveratrol and like compounds improve the longevity of life.

Extensive scientific research on resveratrol and other substances that stimulate sirtuins has shown in many laboratory models to increase longevity of life and reduce metabolic diseases of aging. These have led to human trials of high concentrations of

resveratrol or other sirtuin-stimulating chemicals, the final results of which are not yet known. Further, the particular biologic pathways by which resveratrol and similar substances could improve health outcomes remain unclear.

The present paper by Park et al,¹ and an accompanying comment by Tennen et al,² provide potentially important new insights into the association of the intake of resveratrol and like compounds with health benefits. Tennen et al² conclude that the paper shows that "resveratrol directly inhibits cAMP-dependent phosphodiesterases, triggering a cascade of events that converge on the important energy-sensing metabolic regulators AMPK, SIRT1, and PGC-1a." Such mechanisms could provide key new approaches for the prevention or treatment of a number of chronic diseases in humans.

Comments on specific aspects of the study: Forum reviewers had very favorable comments on this experimental study in mice, thinking that the design, implementation, and analysis were well done. As one reviewer commented: "In this paper, the signaling pathway, alleged to produce the beneficial effects of resveratrol on major metabolic phenotypes previously described, has been dissected in detail. Apparently, the increase of cAMP, due to the inhibition of cAMP phosphodiesterase, primes the series of events leading to (welcome) activation of Sirt1 and AMPkinase.

"Moreover, this study further supports the concept that resveratrol, apparently protecting plants by mimicking (or signaling) a stress condition and thus activating the response, also protects animals by the same or similar mechanism. In fact, the notion that cAMP signaling is involved in response to stress is corroborated by this study, and expands the significance of xeno-hormesis." Said another reviewer: "This paper provides cell signaling measurements for a previously described pathway. Hypothetically, 'better aging' would be a necessary consequence. Indeed, a number of studies have shown that such a pathway may relate to better physiological states."³⁻⁵

Concerns about the paper: On the other hand, other reviewers had some problems with the paper. Stated one reviewer: "It doesn't seem credible that resveratrol could act as a PDE inhibitor in vivo after oral consumption. Where is the in vivo data to support this mechanism of action? The only data seem to be an increase in mitochondrial DNA after 14 weeks treatment

with resveratrol at 400 mg/kg/day and an increase in fasting core temperature and GLP-1. It appears that groups of mice were treated in parallel with resveratrol or rolipram, but while the rolipram data are shown in full there is only selective inclusion of resveratrol data when it supports the alleged mechanism of action. The question we should be asking is: where are the missing resveratrol data from these in vivo studies?"

Another reviewer states: "From a biochemical point of view, I feel the absence of a stronger evidence of specificity. The competitive inhibition of the esterase indicates a similarity between resveratrol and cAMP and docking calculations support the interaction between resveratrol and the enzyme. However, there are not controls ruling out the option that other phenolic compounds can do the same. This could be of some relevance since different polyphenols have been shown inhibiting several protein kinases by competing with ATP (similar H bonding network in polyphenols and adenine), and this minimises, instead of demonstrating, their actual relevance as pharmacologically (or nutritionally) relevant kinase inhibitors."

Implications of the results: The media, in particular, have suggested that this study relates to the effects on health of red wine consumption. Forum reviewers were worried that the dosages used in the experiment were not in the physiological range, and thus implications for human effects are limited. "In relation to nutritional (or pharmacological) importance of resveratrol, in this study the usual conundrum emerges: the concentration used in vitro would correspond to an intake of several liters of wine per day. About this, we must recall that the effects are produced by interactions among macromolecules and ligands, and thus on the rate of this interaction. Lower concentration produces a slower rate of interaction and thus more time to get the effect. Provided a continuous supply of the ligand, we could expect effects in vivo at a concentration much lower than suggested by in vitro studies.

"Finally, on the basis of the described molecular mechanism (inhibition of PDE), we would expect a similar protective mechanism for coffee or tea, containing methylxanthines that also inhibit PDE. Incidentally, the structure of the reference PDE inhibiting compound used in the study (rolipram) is much closer to methylxanthine than to resveratrol." The results of this study relate primarily to the use of resveratrol as a pharmaceutical, not as a nutraceutical from wine or other components of the diet.

Another reviewer added: "I would like to emphasise that the dose used in these experiments is far beyond the physiological concentration from the consumption of wine or other nutrients. Is this concentration not being an activator of salvage pathways that wouldn't be recruited in any other conditions? It seems that concentrations of 0.1 and 1 μM (more likely to be physiological) have very low activity on PDE (although a statistically non-significant trend in the displacement of 8-azido-[DY-547]-cAMP bound to PDE3 is observed in this study). Furthermore, a number of studies have demonstrated that resveratrol has very low bioavailability, leading to concern that many of the beneficial effects observed in either cells or biochemical assays may not be achievable in humans due to rapid metabolism. Indeed, following consumption resveratrol is mainly metabolised into glucuronide and sulphate derivatives. The question about the bio-activity of such metabolites remains unanswered and future work is needed to fully understand the role of such derivatives in vivo."

Do the results relate the consumption of red wine or other constituents in the diet?: "With regard to wine and health, any link to resveratrol seems exceedingly unlikely if 30 g mice have to consume the equivalent of several liters of resveratrol-rich wine (typically 2 – 5 mg/L) per day for these effects." **Another reviewer stated:** "I agree with the other comments regarding the paucity of resveratrol available to tissues. These amounts may be accessible with pharmaceutical doses, but not with wine consumption: the connection with red wine is misleading."

Another reviewer: "Functional foods work synergistically with other micronutrients, and it is not possible to isolate one specific compound responsible for a specific metabolic effect. The in vivo effect may be the response to a metabolite of resveratrol interacting with other chemicals to achieve an effect. Whole plant extracts consists of many active and inactive micronutrients that may play a role in health and disease. To ascribe a specific effect to one chemical found in wine could be misleading. In the post-modern approach, we must take the whole picture into consideration; there are just too many confounding variables in in vivo studies complicating matters" **Another adds:** "I have always supported the view that we should analyze food patterns and relate them to health. As soon as we go into much detail of individual constituents of the diet we lose the thread because the thousands of nutrients confuse us and we get lost."

As a reviewer summarised: "There is, indeed, a major gap between concentration of resveratrol active in in vitro tests and concentration measurable in plasma. However, is this enough to rule out any 'nutraceutical' relevance of resveratrol? If so, also a vast majority of 'health protecting' compounds in fruit and vegetables identified by epidemiology and studied in vitro would be rated as inefficient. It is very common, indeed, observing such a gap."

Said another reviewer: "Dietary resveratrol, nutritionally supplemented resveratrol, and therapeutic levels of resveratrol are three completely distinct molecules in medicine." Said another, "The point is that the experimental condition in vitro and in vivo are extremely different. The time scale, the effect of accumulation, the synergy with other compounds, and the concentration in specific microenvironments are extremely different. While considering all this, a different effective concentration by one order of magnitude is not so dramatic. My message is that what has been reported in the current paper 'could be' relevant, although it cannot be the final word on the topic." A Forum biochemist concludes: "Even though not all the biochemical evidence conclusively fits epidemiologic findings (for example, of protection against cardiovascular disease and the risk of mortality by wine and other beverages containing alcohol), we must remember what F.G. Hopkins said: 'The biochemist may not be the last word in the description of life, but without his help the last word will never be said.'"

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Forum Summary

A well-conducted experimental study in mice has provided potentially important new insights into the association of the intake of resveratrol and like compounds with health benefits. Resveratrol is a constituent of red wine and other vegetable products, and is being evaluated in high-doses as a pharmaceutical. The biologic mechanisms demonstrated in this study could provide key new approaches for the prevention or treatment of a number of chronic diseases in humans, especially those related to vascular and metabolic diseases and to the risk of mortality.

More than two decades ago, particularly through publicity related to the so-called 'French Paradox', the public became aware of the potential reduction in the risk of coronary heart disease from the moderate consumption of red wine, and the media focused on a single constituent in red wine, resveratrol, as being the 'key' factor. We now know that resveratrol is only one of hundreds of phenolic compounds in wine, many of which have been shown to have beneficial effects on vascular function, and that alcohol itself (present in wine, beer or spirits) also provides considerable protection against heart disease. Still, there has remained considerable attention paid to resveratrol, and extensive scientific research on resveratrol and related substances have shown that, in high doses, they may increase longevity of life and reduce metabolic diseases of aging.

In general, Forum reviewers thought that this was a very well-done study. Their concerns related to the dose used in these experiments; while the levels of resveratrol and like compounds might be accessible with pharmaceutical doses, the suggestion that similar levels could be connected with wine consumption is misleading. Further, in humans, resveratrol in the diet will interact with many other chemicals to achieve an effect, as whole plant extracts consist of many active and inactive micronutrients that may play a role in health and disease. To ascribe a specific effect on health from one chemical found in wine or other plant products could be misleading."

Still, the reviewers believed that this paper was an important contribution to our knowledge about the mechanisms by which resveratrol and other chemicals may play a role in cardiovascular and other diseases. Such knowledge could help develop approaches for the prevention and treatment of human disease and for increasing the longevity of a healthy life.

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

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Dietary factors and lung function in the general population: wine and resveratrol intake

According to authors of a study published in the European Respiratory Journal, 'Wine intake is associated with a better lung function in the general population, yet the source of this effect is unknown'. Resveratrol, a polyphenol in wine, has anti-inflammatory properties in the lung, its effects being partially mediated via induction of Sirtuin 1 (SIRT1) activity.

Study researchers assessed the impact of wine and resveratrol intake and SIRT1 SNPs on lung function in the general population. Effects of red and white wine and resveratrol intake on FEV1, FVC and FEV1/FVC were analysed in the population-based Doetinchem cohort (n=3,224). Associations of four tagging SIRT1 SNPs with lung function were analysed in the Doetinchem (n=1,152) and Vlagtwedde-Vlaardingen (n=1,390) cohorts.

Resveratrol intake was associated with higher FVC levels and white wine intake with higher FEV1 levels and lower risk of airway obstruction. SIRT1 SNPs were not significantly associated with level or course of lung function, neither directly nor indirectly via wine or resveratrol intake.

The authors state that this study shows a positive association of resveratrol intake with lung function in the general population, confirming the previously reported positive association of white wine intake with higher levels of FEV1, and additionally shows an association with a higher FEV1/FVC ratio. These effects do not likely run via SNPs in SIRT1.

Source: Dietary factors and lung function in the general population: wine and resveratrol intake. Siedlinski M; Boer JM; Smit HA; Postma DS; Boezen HM. European Respiratory Journal Vol 39, No 2, 2012, pp385-391

Impact of alcohol use on mortality in the elderly

In order to examine the effects of problematic drinking, alcohol use and binge drinking on all-cause mortality in the elderly, researchers investigated 45-month all-cause mortality of 997 randomly sampled community-dwelling elderly Koreans aged 65 years or older who participated in the Korean Longitudinal Study on Health and Aging. Problematic drinking was defined as having alcohol use disorders according to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition criteria or having 8 or higher of the Alcohol Use Disorders Identification Test. Light drinking was defined as drinking 7 alcoholic drinks or less, and heavy drinking as having 14 alcoholic drinks more per week during past 12 months. Binge drinking was defined as having 6 or more drinks on a single occasion at least monthly.

During the 45 month follow-up period, one hundred and thirteen participants (11.3%) died. Heavy drinking (>14 alcoholic drinks per week) increased the all-cause mortality risk when in association with problematic drinking (hazard ratio [HR] = 2.604, 95% confidence interval [CI] = 1.221-5.553, p = 0.012) or binge drinking (HR = 2.823, 95% CI = 1.259-6.328, p = 0.013). Light drinking (< / = 7 alcoholic drinks per week) was associated with decreased all-cause mortality (HR = 0.114, 95% CI = 0.015-0.833, p = 0.032).

The authors conclude that problematic drinking, but not light drinking, is associated with increased all-cause mortality in elderly Koreans, particularly when it is heavy and/or combined with binge drinking.

Source: Impact of alcohol use on mortality in the elderly: results from the Korean Longitudinal Study. Drug and Alcohol Dependence. Vol 121, No 1-2, 2012, pp133-139

Interaction between alcohol drinking and obesity in relation to colorectal cancer risk

While substantive epidemiological literature suggests that alcohol drinking and obesity are potential risk factors of colorectal cancer (CRC), the possible interaction between the two has not been adequately explored. A study published in BMC Public Health, used a case-control study to examine if alcohol drinking is associated with an increased risk of CRC and if such risk differs in people with and without obesity.

Newly diagnosed CRC cases were identified between 1999 and 2003 in Newfoundland and Labrador (NL). Cases were frequency-matched by age and sex with controls. 702 cases and 717 controls completed self-administered questionnaires assessing health and lifestyle variables. Estimates of alcohol intake included types of beverage, years of drinking, and average number of alcohol drinks per day. Odds ratios were estimated to investigate the associations of alcohol independently and when stratified by obesity status on the risk of CRC.

Results indicate that among obese participants (BMI [greater than or equal to] 30), alcohol was associated with higher risk of CRC (OR: 2.2; 95% CI: 1.2-4.0) relative to the non-alcohol category. Among obese individuals, 3 or more different types of drinks were associated with a 3.4-fold higher risk of CRC relative to non-drinkers. The risk of CRC also increased with drinking years and drinks daily among obese participants. However, no increased risk was observed in people without obesity. The authors conclude that the effect of alcohol of drinking on CRC seems to be modified by obesity.

Source: Interaction between alcohol drinking and obesity in relation to colorectal cancer risk: a case-control study in Newfoundland and Labrador, Canada. Zhao J; Zhu Y; Wang P; West R; Buehler S; Sun Z; Squires J; Roebathan B; McLaughlin JR; Campbell PT; Parfrey PS. BMC Public Health, published early online 1 February 2012

Alcohol consumption and mortality risks in the USA

A study published in Alcohol and Alcoholism estimated all-cause and cause-specific mortality risks by alcohol consumption level for the US population.

National Health Interview Survey participants from 1997 to 2004 were followed for mortality through 2006. Hazard ratios (HRs) were adjusted for available demographic and health characteristics and were calculated by alcohol consumption level for all-cause mortality and for mortality from circulatory and external causes. Alcohol consumption levels were generally defined as 'never drinker' (< 12 drinks in life), 'former drinker' (0 drinks during last year), 'infrequent drinker' (< 12 drinks in any year), 'light drinker' (1 drink per drinking day), 'moderate drinker' (2 drinks) and 'heavy drinker' (3+ drinks).

Adjusted mortality hazards for lifetime infrequent drinkers were much lower than the hazards for never drinkers among women, so lifetime infrequent drinkers were used as the reference category in

survival analysis to estimate the mortality effects of alcohol consumption. Estimated all-cause mortality HRs for moderate drinkers were generally lower when compared with infrequent drinkers [HR for male moderate drinkers = 0.87, 95% confidence interval (CI) = 0.75-1.01 and HR for female occasional moderate drinkers = 0.80, 95% CI = 0.69-0.93]. Former drinkers and regular heavy drinkers had higher mortality hazards among both men and women.

The authors conclude that US light to moderate drinkers may have reduced mortality risks, but some portion of their previously observed lower mortality may be due to factors other than alcohol consumption such as medical care and social integration, particularly among women. Alcohol consumption among former and heavy drinkers appears to have increased their mortality risks.

Source: Alcohol Consumption and Mortality Risks in the USA. Brian Rostron. Alcohol and Alcoholism (2012). First published online: January 25, 2012

Chinese herbal medicine may treat alcohol abuse

Researchers from the University of California, Los Angeles have identified that a component of an ancient Chinese herbal anti-hangover medicine called dihydromyricetin, isolated from the plant *Hovenia*, counteracts acute alcohol intoxication and withdrawal symptoms. An early study with rats suggests that dihydromyricetin blocks the action of alcohol on the brain and neurons and also reduces voluntary alcohol consumption with no major side effects.

Dihydromyricetin was seen to decrease withdrawal signs in rats including tolerance, increased anxiety, and seizure susceptibility, along with significantly reducing the voluntary drinking of the rats. Specifically, dihydromyricetin inhibited alcohol's effect on the brain's GABAA receptors, specific sites

targeted by chemicals from brain cells. Alcohol normally enhances the GABAA receptors' influence in slowing brain cell activity, reducing the ability to communicate and increasing sleepiness - common symptoms of drunkenness.

Investigators suggest that dihydromyricetin may provide a molecular target and cellular mechanism to counteract alcohol intoxication and dependence, leading to new therapeutic treatments based on an ancient medicine that has been used by humans for at least 500 years.

Source: Dihydromyricetin As a Novel Anti-Alcohol Intoxication Medication. Yi Shen¹, A. Kerstin Lindemeyer, Claudia Gonzalez, Xuesi M. Shao, Igor Spigelman, Richard W. Olsen, and Jing Liang *The Journal of Neuroscience*, 4 January 2012, 32(1): 390-401

Study finds alcohol consumption most damaging in late first trimester of pregnancy

A new study pinpoints the latter half of the first trimester as a critical time in pregnancy for the vulnerability to Fetal Alcohol Syndrome (FAS). The authors say their study is one of the first to examine the impact of quantity, frequency and timing of alcohol exposure on FAS, which is thought to affect about 1% of the US population and can result in physical, behavioural and learning problems. People with the syndrome may have abnormal facial features, such as a smooth ridge between the nose and upper lip, small head size, unusually small-set eyes and shorter-than-average height.

The 992 women in the study were enrolled in the California Teratogen Information Service and Clinical Research Program between 1978 and 2005, which provided confidential risk assessments for any potential toxin exposures during pregnancy. Every three months during the remainder of their pregnancies, they were asked about their use of alcohol and other substances, including specific dates of use, drinks per day, number of binge episodes and maximum number of drinks.

Information about their babies' development was collected after birth, and each newborn was then examined by a dysmorphologist, a specialist in structural birth defects, to look for evidence of fetal alcohol syndrome as well as other conditions.

While higher levels of alcohol exposure were strongly linked to a greater risk of infants born smaller and lighter, with small heads and a smooth ridge between the nose and upper lip, the most significant associations were observed during the second half of

the first trimester of pregnancy - defined as 43 to 84 days after conception.

For every one-drink increase in the daily average number of drinks consumed during this stage of pregnancy, there was a 25% higher risk for having a smooth ridge between the nose and upper lip; a 22% higher chance of having an abnormally thin upper lip; a 12% elevated risk of having a smaller-than-normal head; a 16% greater risk of reduced birth weight; and an 18% higher chance of reduced birth length. Drinking in any trimester was associated with greater likelihood of shorter birth length, the study found.

Study authors stressed that their research illustrates there is no safe amount of drinking during pregnancy, since the amount of drinking that produced these features in infants varied from woman to woman.

Study author Christina Chambers, an associate professor of pediatrics and family and preventive medicine at the University of California, San Diego commented. "Not every child of women who drink (even very heavily) has all the features, so there are certain susceptibility factors that we don't know."

Chambers and her colleagues theorised that alcohol exposure in the first six weeks of pregnancy, when many women don't yet know they're pregnant, may result in higher miscarriage rates, although the study did not include women who had miscarriages or stillbirths.

The study appears online Jan. 16 ahead of print publication in the April issue of the journal *Alcoholism: Clinical & Experimental Research*

Heavier alcohol consumption may increase risk of colon cancer in people with a family history of such cancer

Cho E, Lee JE, Rimm EB, Fuchs CS, Giovannucci EL. Alcohol consumption and the risk of colon cancer by family history of colorectal cancer. *Am J Clin Nutr* 2012;95:413–419.

Authors' Abstract

Background:

Individuals with a family history of colorectal cancer may be more susceptible to adverse effects of alcohol consumption.

Objective: We investigated whether the association between alcohol consumption and colon cancer risk differed by family history of colorectal cancer.

Design: We conducted prospective studies in women and men in the Nurses' Health Study and Health Professionals Follow-Up Study, respectively. Alcohol consumption was first assessed in 1980 in women and in 1986 in men. Results: During a follow-up of 26 y among 87,861 women and 20 y among 47,290 men, we documented 1,801 cases of colon cancer (1,094 women and 707 men). Higher alcohol consumption was associated with an elevated risk of colon cancer, although the association was significant only for the highest intake category of ≥ 30 g/d, with no significant linear trend. The association between alcohol consumption and colon cancer risk differed by family history of colorectal cancer; in comparison with nondrinkers, the pooled multivariate RRs for alcohol consumption of ≥ 30 g/d were 1.23 (95% CI: 0.96, 1.57; NS) among those with no family history and 2.02 (95% CI: 1.30, 3.13) among those with a family history of colorectal cancer (P value test for difference = 0.05). In comparison with nondrinkers with no family history, the RR for colon cancer was 2.80 (95% CI: 2.00, 3.91) for individuals who consumed ≥ 30 g/d and who had a family history of colorectal cancer.

Conclusion: Reducing alcohol consumption may decrease the incidence of colon cancer, especially among those with a family history of colorectal cancer.

Forum Comments

Background: Data are inconsistent as to whether alcohol consumption increases the risk of colon cancer and, if so, if there is a threshold level of drinking for such an effect. The present analysis combined data from two large cohort studies, seeking to determine the association between alcohol consumption and the risk of colon cancer by whether or not there is a family history of such cancer. The study was based on more than 87,000 women and 47,000 men in the Nurses' Health Study and the Health Professionals Follow-up

Study, respectively. A total of 1,801 cases of colon cancer were documented among these cohorts during follow-up periods averaging more than 20 years.

Comments on the results of the study: Significant increases in risk of colon cancer were reported for the highest category of alcohol consumption, but the average intake among such subjects was not given. As for interpreting their conclusions, it is of some concern that there was not a dose-response relation between alcohol and colon cancer. In fact, the Nurses' Health Study showed higher risks for the women in the lightest drinking group (0.1–<5 g/day) than for most other drinking categories except for the top category of 30 g/day or more of alcohol per day. This pattern was not seen in the Health Professionals' Follow-up Study.

The highest alcohol groups of subjects reported a cumulative average of ≥ 30 grams of alcohol per day, which suggests that they were long-term rather heavy drinkers. Further, subjects in this group were shown to have the greatest intake of red meat, smoke the most, and have the lowest intake of folate. There is a question whether or not multivariate analyses adequately adjusted for these variables; with such large differences in other factors associated with cancer risk, it is difficult to determine the specific role of each factor. The investigators did not allow for a 'lag period' between the time period of alcohol consumption and the diagnosis of colon cancer, which is often done to adjust for potential changes in alcohol intake in a specified period before the diagnosis is made.

Strengths of the study include the availability of frequent updates of alcohol consumption and good assessment of disease, with confirmation of the diagnosis of colon cancer. On the other hand, Forum reviewers were concerned that only limited data were available on the pattern of drinking. The authors state that "there was an insignificant increase in risk from 1–2 drinking days to 5 or more drinking days per week," but the authors do not say if they controlled for total alcohol; also they do not mention whether or not subjects reported binge drinking.

As one Forum reviewer commented: "This paper supports the existence of a limit of intake below which an association of alcohol and colon cancer has not been shown, and confirms the dangers of the combination of a low folate intake and a high alcohol

intake in relation to cancer risk." The reviewer added: "The problems of residual confounding are always present in observational studies, but the present paper seems to have adjusted for multiple risk factors as well as it is possible to do."

Other comments on the paper by Forum reviewers:

One Forum reviewer commented: "It is useful to have data such as these on alcohol and colon cancer. At first thought it might seem obvious that a personal family history of cancer would increase the risk of consuming alcohol for that person. However, in a recent case-control study of 1,925 matched pairs of women who carry a BRCA1 or a BRCA2 mutation, a modest inverse association between reported current alcohol consumption and breast cancer was observed among women with a BRCA1 mutation (OR= 0.82, 95% CI 0.70 – 0.96), but not among women with a BRCA2 mutation (OR= 1.00; 95% CI 0.71 -1.41).¹" Hence, differences in the association of alcohol and colon cancer according to a positive family history of such cancer are of particular interest.

Another Forum reviewer stated: "The groups with the highest alcohol intake had by far the highest percentage of current smokers, and had the lowest folate intake (which should indicate a lower intake of fruits and vegetables). Thus, these people have the most unhealthy lifestyles of the populations studied, and it is not strange that their colorectal cancer incidence is the highest. I do not think that any adjustment for these confounding factors is sufficient to conclude that higher alcohol consumption per se is so important in the pathogenesis of colorectal cancer, or that the authors conclusion that reducing alcohol consumption may have a large effect on decreasing the incidence of colorectal cancer."

Relation of results of paper to current cancer screening guidelines:

A Forum reviewer commented: "The study does not stratify subjects with a positive family history into Lynch 1 or Lynch 2 categories, which might be more helpful in determining a subset association. Further, the study does not take into account that endoscopy was less common in the early eighties and subjects in the at-risk group were probably not receiving consistent screenings in the decade of life (the forties) that we now know may be when they are at highest risk for diagnosis; the at-risk group appears to have been observed in their 50s. I would argue, using data

based on current American Cancer Society guidelines for colon cancer screening in first degree relatives of index cases, that the results may not be the same if the associations were evaluated now, because many cancers might have been prevented.

"Thus, I think that it is very hard to create conclusions on data for colon cancer that is 30 years old, because the new recommendation for screening frequency and age at initiation of screening is so different now. At least some of these cases would probably have been prevented if managed according to current guidelines."

Reference from Forum comments

1. Dennis J et al. Alcohol consumption and the risk of breast cancer among BRCA1 and BRCA2 mutation carriers. *The Breast* 2010;19:479-83.

Forum Summary

This paper presents an analysis based on a large number of subjects being followed in the Nurses' Health Study and the Health Professionals Follow-up Study, relating alcohol consumption to the risk of colon cancer according to whether or not the subjects had a positive family history of colon cancer. Their results indicate that subjects with a family history whose average alcohol intake was 30 or more grams per day (about 2 _ typical drinks by US standards) have an increase in their risk of colon cancer; there was not a significant association between alcohol and colon cancer among subjects without a positive family history.

Forum reviewers were somewhat concerned that the pattern of drinking (regularly or binge drinking) was not assessed, and that there was not a clear dose-response curve between the level of alcohol consumption and the risk of cancer (i.e., there was not a consistent increase in risk of cancer with greater alcohol intake). Further, folate intake was found to modify the association, with the highest risk for subjects with a positive family history of colon cancer, low levels of folate, and in the highest category of alcohol consumption.

The present study provides some support for an association between higher levels of alcohol intake and the risk of colon cancer among subjects with a positive family history of such cancer. However, there have been changes in the guidelines for screening for cancer (by endoscopy, with removal of pre-malignant tumors) and other preventive measures for people

with a positive family history of colon cancer. Such measures could modify the effects of all risk factors for colon cancer in future analyses.

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

Harvey Finkel, MD, Hematology/Oncology, Boston University Medical Center, Boston, MA, USA

Lynn Gretkowski, MD, Obstetrics/Gynecology, Mountainview, CA, Stanford University, Stanford, CA, USA

Dee Blackhurst, PhD, Lipid Laboratory, University of Cape Town Health Sciences Faculty, Cape Town, South Africa

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

Erik Skovenborg, MD, Scandinavian Medical Alcohol Board, Practitioner, Aarhus, Denmark

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Prostate cancer linked to heavy alcohol intake

A Paper presented at annual Genitourinary Cancers Symposium gave evidence that heavy ethanol intake is associated with an increased risk of prostate cancer (PCa) among low-risk men with at least one prior negative prostate biopsy. Heavy alcohol consumption is also associated with an elevated risk for high-grade PCa.

The findings come from a study of data from 6,729 men who had at least one on-study biopsy while participating in the REDUCE (Reduction by Dutasteride of Prostate Cancer Events) trial. Of these, 49% were moderate drinkers and 26% were heavy drinkers.

The researchers, led by Lionel L. Bañez, MD, of Duke University Medical Center in Durham, NC, found that as ethanol intake increased, so did the risk for PCa overall and for high-grade disease. Dutasteride decreased overall PCa risk significantly by 27% and

ethanol intake did not interfere with the risk-reducing effect of dutasteride.

Compared with non-drinkers, heavy drinkers had a 21% greater risk of PCa overall and a 34% greater risk of high-grade PCa (Gleason score of 7 or higher).

For the study, the investigators defined ethanol intake in terms of units (half pint of beer, glass of wine, for example). They classified subjects as nondrinkers, moderate drinkers (seven units or less per week), and heavy drinkers (more than seven units per week).

The symposium is cosponsored by the American Society of Clinical Oncology, the American Society of Radiation Oncology, and the Society of Urologic Oncology.

www.ons.gov.uk/ons/dcp171778_254061.pdf

New yeast strain produce tasty low alcohol beer

Researchers from University College, Cork report that they have developed a new strain of yeast that produces less alcohol for lower alcohol by volume (ABV) beers, while retaining taste.

According to researchers, advances in microbiology, genomics, and computational technology made it possible to develop the yeast strain, which could lead to a reduction in processing costs generally associated with low ABV beer production.

Outlining his research with Rob Karreman and other UCC colleagues, Morrissey said: "What we want to do is take the same starting ingredients, follow the same process, and end up with a product that has less ethanol, but everything else is the same."

He added: "The hypothesis of the project was that when we look at different yeasts, some are capable

of fermenting sugars and making a lot of ethanol, whereas others that are broadly very similar don't make ethanol.

Looking at gene sequences allowed the team to discover which genes were responsible for difference in metabolism, Morrissey said. "We identified some genes that appeared important to us, and we then swapped genes from non-producing yeast into producing yeast".

The yeast strains are being reviewed for protection under patent. The researchers estimate that commercial production of low ABV beers from the yeast could occur within three years.

www.ucc.ie

Draft Australian dietary guidelines issued

The National Health and Medical Research Council (NHMRC) has released the draft Australian Dietary Guidelines and Australian Guide to Healthy Eating for public consultation.

The Guidelines are based on the best available scientific evidence linking diet and health. They provide information for health professionals and the general population to reduce the risk of diet-

related disease. The Dietary Guidelines encourage healthy dietary patterns to promote and maintain the nutrition-related health and wellbeing of the Australian population.

Submissions can be made to the NHMRC via http://consultations.nhmrc.gov.au/open_public_consultations/dietary-guidelines. The public Consultation Closes on 29 February 2012

Comments on proposed new dietary guidelines for Australia

Comments by the International Scientific Forum on Alcohol Research on the draft critique of the chapter regarding alcohol

“A review of the evidence to address targeted questions to inform the revision of the Australian Dietary Guidelines”

Australian Government Department of Health and Ageing and National Health and Medical Research Council (NHMRC) November 2011, ISBN Online 1864965304

Summary: In 2008, the NHMRC commissioned the Dietitians Association of Australia to undertake systematic literature reviews to support the revision of the Dietary Guidelines for Australians. The primary aim was to undertake a series of systematic reviews of the national and international literature from the year 2002 on the food-diet-health-disease inter-relationship for different population subgroups. One of the 29 sections in the report (pp 613-678) covered the evidence for the risks and benefits of alcohol drinking. This critique is only of the alcohol section.

Forum Comments:

On balance the authors should be commended on their work. Our criticisms are primarily about the restriction in the time frame of the review, and minimal consideration of key nuances, such as quantity of alcohol consumed and its relation to risk or benefit, patterns of drinking, the balance between risks and benefits, and making statements at all when the evidence is too weak. More details (e.g. considering cardiovascular mechanisms to widen the search) would have added weight to the conclusions.

Specific comments:

1. The search methodology used to create this review is well done and fits with best practice.
2. The authors need to be commended on adopting a balanced view toward alcohol by considering both positive and negative health effects of alcohol.

3. This lack of overt bias may have been due to the fact that all reviewers appear to have been dietitians. That may of course have introduced an inherent unknown bias from the fact that no other health disciplines had input into the process.

4. An unintended bias may have been introduced by the reliance on the 2007 WCRF/ACIR study. Although the methodology and process may have appeared the same, without the reviewers of this study's direct involvement there is always a risk that that assumption is incorrect.

5. The review only considered literature from 2002 to 2009. Although this mostly applied to all conditions and should be applauded for consistency purposes, it has ignored seminal studies from outside that time frame that alter the quality of evidence grade and evidence statement.

6. Evidence quality grades of D and possibly C suggest that the evidence for those statements may be so unreliable that it would be better to make no evidence statement at all for those conditions.

7. We note that only health benefits and risks were considered. Alcohol is a complex subject and this review misses commentary on social benefits and risks.

8. Some of the evidence statements are too simplistic. They ignore the fact that some benefits or risks of alcohol may only become relevant at high alcohol use levels, that there is a balance between risk and benefit that for any condition has to be considered in the context of any individuals non alcohol based risk factors, and that in some conditions the benefit or risk is very small in absolute terms. Indeed, throughout the text there is no clear delineation between the effects of light-to-moderate and heavy alcohol consumption, especially regarding increased risks of adverse health effects – the text refers throughout to “alcohol use or alcohol consumption”, where amount and pattern are not considered.

9. A dual relationship exists between alcohol consumption and diabetes mellitus. Light to moderate drinking may be beneficial while heavy drinking is detrimental. (Baliunas et al., 2009 and cited in the World Health Organisation Global Status report on Alcohol and Health 2011). The grade of D for the evidence statement about alcohol and diabetes assigned in this review appears incorrect in light of these references and may reflect the fact that predominantly the review does not cover literature reported after 2009.

10. The authors appear to have assumed any cardioprotective effect of the alcohol component was due only to the reduction in the concentration of HDL cholesterol observed following alcohol consumption. This could argue their search strategy for the cardioprotective effect of alcohol was too narrow as alcohol is also observed to produce a cardioprotective effect by a reduction in platelet stickiness and in the production of blood clotting proteins that reduces the potential for blood clots to form, as well as facilitating the breakdown of blood clots that have already formed. In addition alcohol has an endothelial anti-inflammatory effect on for example, C-reactive protein (CRP). (Rimm E et al 1999. Wannamethee S et al 2003. Booyse F et al 2007. Pai J et al 2006. Imhof A et al 2001.)

11. The evidence quality for risk of oesophageal cancer, especially in heavy alcohol drinkers appears correctly rated as B. The evidence quality for risk of oropharyngeal cancer, again especially in heavy alcohol drinkers, appears to be incorrectly rated as C, and should be rated as B. Again this review has not considered more recent literature, (World Health Organisation International Agency for Research on Cancer (IARC). 2012)

12. There is a balance between the risks and benefits of alcohol for any individual. The benefits appear to outweigh the risks for light to moderate drinkers older than the mid 50s. The risks (predominantly due to accidents and binge patterns of drinking both of which were not considered in this review) outweigh the benefits in youth. (Connor et al 2005).

Comments prepared by selected members of the International Scientific Forum on Alcohol Research

Lead author:

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Input from the following members of the Forum:

Creina Stockley, Clinical Pharmacology, Health and Regulatory Information Manager, Australian Wine Research Institute, Glen Osmond, South Australia, Australia;

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Andrew L. Waterhouse, PhD, Marvin Sands Professor, University of California, Davis; Davis, CA, USA

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

Helena Conibear, Executive and Editorial Director, Alcohol-in-Moderation (AIM), Dorset, United Kingdom, and Co-Director, International Scientific Forum on Alcohol Research:

For the detailed critique of this paper by the International Scientific Forum on Alcohol Research and a listing of references, go to www.bu.edu/alcohol-forum/critique-071-forum-comments-on-proposed-new-dietary-guidelines-for-australia-16-february-2012/

New online tool for drug education at school in Australia

The Australian Drug Foundation has launched a new website for Australia's most extensive range of drug educational tools.

"Our new ADF Shop website is a place where educators, health workers or parents can access the largest collection of educational materials in Australia with ease," said CEO Australian Drug Foundation, John Rogerson. "Providing people (especially young people) with the tools to make informed decisions about their alcohol or drug use is a proven means of harm reduction," he added.

Every secondary school in Australia is required to teach drug education, so it's important that schools

and health workers have access to the latest, quality-checked information and learning tools.

Popular products include: Beware of S.I.D. (Seemingly Irrelevant Decisions); Take Control of Your Drinking and you may not need to quit; the Standard Drinks Kit.

"As a community, we need to better equip young people to challenge the role that alcohol and other drugs plays in their lives. If we can achieve this then young people will have the chance to make educated and informed decisions about when and how they drink or use drugs."

The new ADF Shop website is now live at www.shop.adf.org.au

The majority of Spanish adolescents state they do not take drugs and rarely drink alcohol

The results of a study by the University of Seville show that most young people do not fit the risk profile of taking substances. 60% of Spaniards aged 13 to 18 say they do not take drugs and rarely drink alcohol – only in moderation – and less than 10% admit to have taken some form of illegal drug.

The research by Pilar Ramos, teacher and researcher at University of Seville forms part of the 2006 edition of the study Health Behaviour in School-aged Children (HBSC), and presents data for drug use from a sample of 15,942 Spanish adolescents, 46.7% of which were male, aged 13 to 18, from 375 different educational institutions.

The researchers conducted a questionnaire about substance use, bio psychosocial adjustments and the contexts of development. They were asked about the frequency of tobacco, alcohol and cannabis use, intoxication and consumption of other illegal drugs, such as designer ones (ecstasy or 'pills', LSD, acid) amphetamines or speed, opiates (heroin, methadone) medication to 'get high', cocaine, glue and others.

The project shows that after alcohol and tobacco, the substance most popular amongst adolescents is cannabis. In fact, Spain, joint with Wales, is the country with the third highest rate of cannabis use by young people, after Canada and Switzerland.

Pilar Ramos stated that **"Although it is important that society, the media, the experts involved and young people themselves change the stereotype of adolescents taking drugs, the data from our study should not be seen as an excuse not to prevent substance use"**.

The study also investigated drug use in friendship groups. Findings suggest that teenagers who take drugs are less satisfied at school and with their families, but they are most satisfied in the friendship environment. In this respect, this project also verifies the direct relationship between the level of substance use by young people and their friends, therefore analysing their friendship groups is important when studying youth substance use.

A study carried out within the same research project has compared the influence of the social environment in tobacco consumption amongst Spanish and English adolescents. The conclusions show that the fact that their best friend smokes is considerably more relevant than any other person in the adolescent's development, such as parents or siblings.

There were no significant differences between provinces, although adolescents from the Balearic Islands are more likely to have consumed alcohol more frequently, followed by those from Aragón and Catalonia.

According to the Ramos and colleagues, the measures to reduce drug use could be grouped into three areas of intervention: putting in place better and further reaching measures to regulate and control access to these substances (especially alcohol) for the younger population, extending prevention programmes and promoting responsible consumption; and finally, improve the coherence and continuity in different environments where young people grow and develop. They conclude that **"in other words, there should be good relationships in different contexts of development: family, school and friends."**

Source: Can we still be friends if I don't smoke: an asset based analysis of adolescent smoking behaviour in England and Spain. Morgan, A., Rivera, F., Jiménez-Iglesias, A., Owen, L., Moreno, C. & Haglund, B. (en revisión). Journal of Health Psychology.

Voluntary after school programme may help reduce alcohol use among young teens

An evaluation of a voluntary afterschool programme teaching middle school students about substance abuse prevention suggests that the programme helps to reduce alcohol use.

The CHOICE programme includes five 30-minute sessions designed to be non-confrontational and non-judgmental and challenges unrealistic beliefs about substance abuse, dispels myths about the prevalence of alcohol use, gives teens ideas about how to resist pressure to use substances, and teaches them about the benefits of reducing or stopping substance use.

The evaluation included 9,528 students at 16 middle schools in Southern California. Half of the schools ran the CHOICE programme. The researchers found that at schools where the programme was offered, one teen out of 15 was prevented from initiating alcohol use during the school year.

The study found that African American and multi-ethnic students, as well as alcohol and marijuana users, were more likely to attend CHOICE. Most students surveyed after completing the programme said they liked the style of the programme and found the facilitators helpful.

There was a school-wide effect on alcohol use for all students at schools where the programme was offered, regardless of whether they attended the programme. Students at the eight schools that offered the programme were less likely to start drinking compared with those at the schools that did not.

The researchers acknowledged the results of the study were modest. *“But our findings suggest that adolescents will voluntarily attend an after-school programme that specifically provides information on alcohol and drugs, and that this type of programme can reduce alcohol use at the school level”*. Elizabeth D’Amico, the study’s lead author said that this study is the next step in understanding how voluntary after-school programmes can help younger adolescents make healthier choices.

Source: Elizabeth J. D’Amico, Joan S. Tucker, Jeremy N. V. Miles, Annie J. Zhou, Regina A. Shih, Harold D. Green. Preventing Alcohol Use with a Voluntary After-School Programme for Middle School Students: Results from a Cluster Randomized Controlled Trial of CHOICE. *Prevention Science*, 2012; DOI: 10.1007/s11121-011-0269-7

Engaging parents in the Family Check-Up in middle school

A recent study reports on the results of a randomised controlled trial of the Family Check-Up (FCU), a family-centered, school-based intervention designed to forestall the escalation of adolescent problem behaviour by promoting and motivating skillful parenting through the transition to high school. The authors state that *“adolescence is a time of significant developmental change; levels of problem behaviour that had been relatively innocuous may escalate in the company of peers, with simultaneous reductions in parental monitoring and involvement”*.

593 ethnically diverse families were randomised to be offered the FCU when their youth were in seventh and eighth grades of middle school. A complier average causal effect analysis was used to examine change in family conflict, antisocial behaviour, involvement with deviant peers, and alcohol use from sixth through ninth grades.

Analyses revealed that when compared with a matched control group, youths whose parents had engaged in the FCU demonstrated significantly lower rates of growth in family conflict ($p = .052$), antisocial behaviour, involvement with deviant peers, and alcohol use.

The authors state that the results extend current research on the FCU and provide support for theory that links family conflict with a variety of youth problem behaviour. These results and the extant research on the FCU suggest that traditional school-based service delivery models that focus on the individual child may benefit from a shift in perspective to engage parents and families.

Source: *Engaging Parents in the Family Check-Up in Middle School: Longitudinal Effects on Family Conflict and Problem Behaviour Through the High School Transition*. Mark J. Van Ryzin, Ph.D, Elizabeth A. Stormshak, PhD, Thomas J. Dishion, PhD. *Journal of Adolescent Health*, available online 16 January 2012.

London to trial alcohol monitors for offenders

Mayor Boris Johnson has announced that London will be the first city in England to test electronic monitoring in order to force persistent alcohol offenders to stop drinking.

The trial programme is expected to start later in 2012. The mayor's office says that alcohol is a factor in a million violent crimes in Britain annually and the London Ambulance Service responded to nearly 52,000 incidents last year involving alcohol.

Electronic devices that continuously monitor alcohol are used in several US states. Offenders who break their no-drink order can be sent to jail. Legislation to permit such testing is now before Britain's Parliament.

Details of the devices to be used in the trial have not been disclosed, but existing systems check at regular intervals for ethanol vapour in low levels of perspiration on the skin. From this, it is possible to establish whether the bracelet wearer has consumed a small, moderate or large amount of alcohol.

UK convenience stores launch instore responsible drinking radio adverts

Spar UK is urging its retailers to show their commitment to responsible alcohol sales, by promoting government initiatives with an in store radio advert.

An awareness campaign aimed to educate consumers on the average alcohol content of a bottle or can of beer, glass of wine and measure of spirits was launched in Spar stores at the end of January.

This is the first such initiative in the convenience sector. Spar retailers will also be expected to prohibit cross merchandising or linked display of alcohol with products that appeal to children, and also the cross promotion of alcohol with pharmaceutical products or branded 'hangover' remedies, as laid out in new initiatives suggested as part of the government's Responsibility Deal.

Barry Wallis, Spar UK retail development controller, said: "Through the medium of our in store radio and POS programme, we are urging our members to demonstrate that they are responsible Spar retailers by supporting these initiatives to promote responsible drinking amongst their consumers."

How many units in your drink? - Consumer campaign launched in UK

Retailers have unveiled a national campaign to raise consumer understanding about the number of units in their favourite drinks.

The campaign forms part of retailer's commitment to the Public Health Responsibility Deal and is

currently being rolled out in stores across the UK. It is supported by major retailer members of the Wine & Spirit Trade Association, British Retail Consortium and the Association of Convenience Stores.

The 'How many units in your drink?' message are being displayed on posters, shelf barkers and till screen adverts.

The '2-2-2-1' message, which ties in with that currently on display in pubs and bars, shows the number of units in a typical can of 4% abv lager, 330ml bottle of 5% lager, 175 ml glass of 12% ABV wine and a single measure of a 40% ABV spirit.

www.dh.gov.uk/health/2012/02/howmanyunits/

Unit measures based on the following typical servings: 440ml can of 4% abv lager, 330ml bottle of 5% abv lager, 175ml glass of 12% abv wine, 25ml single of 40% abv spirit rounded to nearest units.

UK Chief Medical Officers' recommendation adults do not regularly exceed	
Men	3-4 units a day
Women	2-3 units a day

drinkaware.co.uk

Heineken sponsors 80,000 PASS training cards

Heineken has sponsored the printing and distribution of 80,000 PASS training cards to raise awareness of the proof-of-age scheme to pubs across the UK.

Cards will be distributed to training providers, licensees, pub companies and security firms supplying door supervisors for the late-night sector.

The training cards are intended to help staff recognise the PASS hologram, which shows that the card is genuine. The cards can also be ordered from PASS.

Heineken's head of public affairs Fenella Tyler said: "Heineken saw this initiative as another great way to raise awareness of underage drinking and to help retailers be confident that they are not selling alcohol to any underage customers."

Robert Humphreys, chairman of the PASS board, added: "PASS is extremely grateful to Heineken for sponsoring this much needed training tool. We encourage all pubs and clubs to redouble their efforts to ensure that all staff, and especially any door supervisors employed at their premises, are trained to accept PASS cards".



Small rise in alcohol-related deaths in 2010

The Office of National Statistics reported a slight rise in alcohol-related deaths for 2010 up by 126 to 8,790 from 8,664 in 2009. There are more alcohol-related deaths in males (67%) than in females (33%), and alcohol-related death rates were highest for those aged 55-74 and lowest for those aged under 35 over the last ten years.

UK males aged 55-74 years showed a sharp and statistically significant increase in alcohol-related death rate from 41.8 per 100,000 in 2009 to 45.2 per 100,000 in 2010. Alcohol-related death rates varied between the regions and over the last ten years were highest in the North and lowest in the East of England.

British Liver Trust launches new report

A British Liver Trust report, 'Tackling alcohol misuse: Should abstinence be our preferred approach?', launched in February argues that people with alcohol problems must be offered effective support and treatment to meet their individual needs. The report suggests that it is vital that people who misuse alcohol are not treated by a one-size fits all abstinence approach; but, in order to be as successful as possible, healthcare professionals must work with patients to understand their preferences in setting goals to reduce their alcohol harm.

According to the report, the core focus of alcohol policy debates should be on preventing liver disease. This means that GPs, nurses and other health professionals should screen for alcohol misuse more widely, to ensure that those drinking at harmful levels are identified and offered appropriate support, advice and treatment.

The report is available from www.britishlivertrust.org.uk

Call for compulsory school alcohol education in Australia

In Western Australia, The Commissioner for Children and Young People, Michelle Scott, is calling on the State Government to introduce compulsory alcohol education in schools for nine and ten-year-olds.

According to Scott, "In WA, there are some excellent programmes already in schools but they are totally voluntary; that means very few children and young people participate in education programmes about alcohol," she said. "Last year, I did a consultation with over 300 young people in WA. They said they wanted more education and they said they wanted it to start before they were actually the age they started to participate in drinking... The earlier we start talking to children and young people, the earlier we have the chance to influence their behaviour."

Ms Scott has written to the Education Minister, Liz Constable, requesting that compulsory alcohol education be given a matter of priority. Dr Constable responded that it is up to schools to decide how to use the available resources and emphasised that the issue must also be dealt with in the home. "It is first and foremost an issue for parents and the community at large so it's everybody's issue." She said

Alcohol Behaviour Change campaign in Scotland

The Scottish Government's latest Alcohol Behaviour Change campaign, encouraging Scots to think about the health effects of regularly drinking above the recommended alcohol guidelines, began on 7 February. It encourages people to make small changes to the way they drink such as alternating alcohol with soft drinks or water and having two alcohol-free days a week.

This year's campaign encourages women to 'Drop a Glass Size' and features three different sized wine glasses to highlight that by making a small change, opting for a smaller glass size, women can see and feel a big difference in their health and well-being now and in the long term.

As part of the campaign a new 'drinking time machine' smart phone app has been developed to show people the affects of regularly drinking too much. The app is available exclusively from the Scottish Government free for one month and will show users how alcohol speeds up the ageing process.

App designer Auriole Price said: "The main aim of the app is to shock people into drinking just a little bit less. We are appealing to people's vanity as the effects of alcohol can include red broken veins on the cheeks, bloodshot eyes, a bloated face and deeper wrinkles."

www.drinksarter.org/handy-tools/drop-a-glass-size/drop-a-glass-size



UK Responsibility Deal website

A website has been created to give up-to-date information on the Responsibility Deal, including information on all the pledges and how they can be delivered, partners, and details on how to sign up.

<http://www.dh.gov.uk/health/2012/02/phrd-launch/>

Adult Drinking Patterns Survey in Northern Ireland 2011

A survey, conducted on behalf of the Department of Health, Social Services and Public Safety, examines drinking habits in Northern Ireland and identifies how drinking behaviours vary across different sections of the public, the proportion of people who binge drink, problem drinking, and perceptions of drinking.

Key Findings

- 74% adults drink alcohol, (78% males and 72% females) and younger adults (18-29 years) are more likely to drink than older adults (60-75 years).
- 52% of drinkers reported drinking alcohol at least once a week or more frequently (6% of respondents reported drinking on an almost daily basis).
- Most drinking occurs over the weekend and peaks on Saturdays, with the most common drinks being wine (48%) and beer (47%).
- Most of those who drank in the week prior to the survey had either consumed alcohol at home (64%), in the pub (20%) or at someone else's home (20%).
- 78% reported having reached or exceeded the recommended daily limit for drinking on at least one occasion in the week prior to the survey and 18% of male drinkers reached or exceeded the recommended daily limits on three or more days that week, compared to 16% of female drinkers.
- The recommended daily limits are exceeded most often on a Saturday (53% of drinkers) and on a Friday (31% of drinkers).
- More females (80%) compared to males (74%) stayed within the weekly guidelines for sensible drinking limits.
- 30% of those who drank in the week before the survey had engaged in at least one binge drinking session (35% males and 25% females). For the youngest age group (18-29) the figure was 50% and for the oldest age group (60-75) the figure was 13%.
- CAGE question analysis (clinical interview questions) indicated that 9% of those who drank in the week prior to the survey are likely to have a problem with alcohol
- 61% of those who consumed alcohol in the week prior to the survey consider themselves to be light drinkers and 36% consider themselves to be moderate drinkers. Only 3% consider themselves to be heavy drinkers.

www.northernireland.gov.uk/index/media-centre/news-departments/news-dhssps/news-dhssps-180112-adult-drinking-patterns.htm

EFRD launches web campaign to promote responsible alcoholic drinks marketing

The European Forum for Responsible Drinking (EFRD) has launched a web-campaign to promote responsible marketing practices for alcoholic beverages. The objective is to explain how EU-wide codes of advertising should be applied.

Following the recent revision of the marketing rules in late 2011 to adjust to the growing prevalence of digital media, this campaign is aimed at marketers and advertising executives to explain the industry's vision of responsible marketing on and offline. Creative departments and advertising agencies working with spirits producers will be able to gain practical knowledge of how the industry's voluntary rules should be applied from www.marketresponsibly.eu.

The site provides advice on the use of registration data to prevent underage social network users (e.g. Facebook) from accessing alcohol marketing content; using Age Affirmation Pages (AAP) whenever possible to only reach those above 18 years old; Monitoring

and moderating user-generated content; Promoting responsible drinking messages to consumers; Appropriate content to only appeal to those above 18 years old by avoiding depiction of elements of 'teen culture' or associating alcohol with a 'rite of passage'.

"Responsible marketing practices, agreed and enforced by EFRD members, must be understood and applied by everyone associated with the marketing of their brands", said Carole Brigaudeau, EFRD manager. "We are currently spreading this message throughout training road shows held with producers and advertising agencies across Europe as a commitment to the European Alcohol & Health Forum to run until 2013. The online training tool comes to support this 'live' training and provides readily accessible information to agencies and marketers 24/7," she said.

Drinkaware.ie launch Hen and Stag party Survival Guides

Drinkaware in Ireland has produced a Survival Guide for Hen and Stag Parties.

The guides have 'valuable tips on planning the ideal hen or stag do including 10 original party ideas, reviews of various hen and stag party locations both home and abroad, advice on transport for the weekend, tips on how to pace yourself to ensure you remember the party for all the right reasons plus a handy checklist to ensure everything goes smoothly in the run up to the Big Day'.

Compiled by editor of Irish Brides Magazine, award-winning journalist Jillian Bolger the guides are available to download free on the drinkaware.ie website.



European Commission response to Scotland's minimum pricing plan

Since first being raised, opponents have argued the measure will breach EU rules on free trade. But, following a visit to meet European Commission health chiefs in early February, a spokesman for Nicola Sturgeon stated: "The very clear message from the commission was confirmation that minimum pricing for alcohol is entirely compatible in principle with EU law." But, despite getting apparent EU support, a few days later the EU health commissioner whom Sturgeon had met, John Dalli, declared: "We will have to see first if Scotland's minimum pricing law on alcohol is compatible with EU law." The Scottish Whisky Association has since argued that Sturgeon should settle the doubts over the legality of the plan by officially 'notifying' the European Commission. This is the formal procedure when one member state decides to change its rules on a product which could affect the free movement of goods.

Sturgeon has so far declined to take this course of action, telling MSPs in January that "our firm view is that we are not obliged to give notification of the measure". As a minimum price does not set a new 'standard' on alcohol content, it is therefore not changing the nature of alcoholic products, she argues. However, in a letter to the SWA last week, the EU's Enterprise Directorate comments that "the proposal seems, in principle, notifiable".

Should the World Health Organization Regulate Alcohol Use?

A University of Oxford researcher is calling on the World Health Organization to put in place policies that would regulate alcohol use.

Devi Sridhar, a lecturer in global health politics, wrote in the journal *Nature*, that WHO should treat dangerous drinking as a global public health crisis, just as the agency treats disease outbreaks and tobacco use. WHO, she said, requires countries to report outbreaks of certain diseases and also institutes policies requiring member nations to take measures designed to curb tobacco's supply and demand.

"About 2.5 million deaths a year, almost 4 percent of all deaths worldwide, are attributed to alcohol — more than the number of deaths caused by HIV/AIDS, tuberculosis or malaria," Sridhar wrote in her commentary,.

In 2010, WHO published a document, the WHO Global Strategy to Reduce Harmful Use of Alcohol, that included strategies such as prohibiting 'unlimited drinks' promotions and instituting a minimum age to purchase alcohol. These recommendations, Sridhar argued, should become legal requirements.

Sridhar argues that *"WHO must move forward with efforts to make safer consumption of alcohol a public health priority... The WHO is the only body with the legitimacy and authority to proactively promote health through the use of international law."*

Source: Health policy: Regulate alcohol for global health. Devi Sridhar. *Nature* Vol. 482, P. 30216 Published online 15 February 2012

In a response Raymond Scalettar, MD Former American Medical Association Chair and Medical Advisor to the Distilled Spirits Council stated

'The alcohol industry is strongly opposed to abusive alcohol consumption in any form. We support the World Health Organisation's (WHO) ongoing Global Alcohol Strategy on the Harmful Use of Alcohol, which was adopted unanimously in 2010 by its 193 member states. They decided not to pursue a tobacco-like framework

convention on alcohol because one size does not fit all, and most individuals around the world drink moderately and responsibly. Thus, we strongly disagree with the Nature commentary by University of Oxford professor Devi Sridhar calling for a simplistic prescription to address all alcohol problems in different countries in the same manner.

As WHO points out, illegal and potentially poisonous unregulated alcohol in places such as Russia and some developing countries are responsible for much of the harm. Raising taxes on legitimate products will only increase this dangerous consumption of illicit alcohol. The population-based control measures advocated by Sridhar are also clearly not appropriate for countries like the United States. Here, underage drinking and drunk driving rates have reached historic lows levels through tough law enforcement, education and targeted interventions.

Further, according to the US Dietary Guidelines, moderate alcohol consumption is associated with a lower risk of heart disease, the leading cause of death among women and men in the United States. Many studies also show moderate alcohol consumption is associated with the lowest all-cause mortality among middle-aged and older adults. In fact, a recent report from the US Centers for Disease Control and Prevention cited moderate alcohol consumption as one of four key healthy lifestyle behaviours.

Even WHO acknowledges the beneficial health effects of moderate alcohol consumption and that most of the adult population drinks at low-risk levels or abstains altogether. To the extent, that moderate consumers would be most affected by this heavy-handed, one-size-fits-all approach, those benefits would be lost. Far better is WHO's current Global Alcohol Strategy where all stakeholders are working together. It's time that anti-alcohol advocates stop undermining this process that is working well.

US Drunk drivers: Congress gets behind breath-test ignition devices

A House transportation bill that would offer additional highway funds to states that require ignition interlock devices for Drinking under the influence (DUI) offenders is gaining support in Congress and a similar measure is expected to come before the Senate. Presently, fifteen states require all convicted drunk drivers, including first-time offenders, to use the devices, according to MADD.

In a pilot project running 2010-2016, DUI offenders in Los Angeles County and three other California counties are required to install the devices in their cars.

South Africa - You Decide campaign

The South African Breweries Limited (SAB) has partnered with the Department of Trade and Industry (DTI), the National Youth Development Agency (NYDA) and provincial Departments of Education to launch a comprehensive programme to tackle underage drinking.

The programme encompasses a series of interactive initiatives aimed at teens, but with strong links to parents, peers, teachers, liquor traders and the community. The programme, called You Decide, is a multi-faceted intervention grounded in the latest thinking on the clinical and psychological facets of this complex problem. The initial phase of the programme will run in Kwazulu-Natal, the North West, Free State and Mpumalanga, reaching some 360 schools, targeting an estimated 400,000 learners in 2012. The programme will be run for a number of years, expanding its reach annually until all provinces in the country have been covered.

The campaign will include an interactive roadshow on underage drinking, an inter-school competition, several school lessons and a guide for parents. It also has several resources for teens including counselling, reading material, a website, a Facebook page and an interactive game.



Alcohol-free February Charity Challenge 2012

South Africans Against Drunk Driving (SADD) is running its 2012 campaign Alco Free Feb, encouraging the public to sign up for the challenge of not drinking in the month of February. (There is also a 10 day challenge and the opportunity for teenagers to sign up for 'Alco Free teen'). SADD started this initiative in 2010 following a similar successful campaign was started in Australia in 2008.

Past participants have told the organisation that they have lost weight, saved money, found more time, energy and productivity in their day and have slept better. In addition, many people found it increased awareness around their own family's consumption, as well as making them feel good about raising funds for charity, in a fun way.

In 2011 'Zero Heroes' for the campaign included Rory Elliot of the band PLUSH and endorsements have come in from all over the country from Members of Parliament, to the CEO of major companies.

For more information and to sign up (the cost to sign up for the month of February is R 100), visit www.alcofreefeb.co.za

Pregnant women not hearing or heeding safe drinking guidelines

The Foundation for Alcohol Research and Education in Australia (FARE) released a report on 14 February that suggests one in five Australian women continue drinking once they know they are pregnant.

Key Findings include:

- 47.3% of women drank while pregnant, before knowledge of their pregnancy;
- 19.5% of women drank while pregnant, after knowledge of their pregnancy;
- rates of drinking after knowledge of pregnancy increases with age and a range of socioeconomic variables; and
- age is thought to be the driving force in this trend. Over 90% of those aged 25 or under who were drinking before their knowledge of pregnancy stopped drinking when they became aware of their pregnancy.

www.fare.org.au/wp-content/uploads/2011/07/Alcohol-Consumption-During-Pregnancy-Final.pdf

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

AIM Mission Statement

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

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