

Beverage Guidance Council blames hidden calories in soft drinks for obesity rises in US

Following last edition's focus on how just 6% of the Western adult population chooses to adhere to the heart healthy maxims of staying slim, not smoking, exercising regularly, eating a Mediterranean style diet and drinking alcohol moderately, a new study proposes guidance system of beverage type consumption in the US. The authors blame sucrose and corn syrup laden drinks for 50% of the increased daily calorific intake across all age groups and ethnicities in the US of 150-300Kcal a day (an increase of up to 15%).

Although the focus of the US Dietary Guidelines for Americans has been on food - energy intake from beverages currently represents 21% of the total energy intake of the population. Between 1977 and 2001, the proportion of energy obtained from calorific sweetened soft drinks and fruit drinks (not pure juices) has increased three fold (50-144 kcal a day) - at the expense of milk intake.

It is important to note that the Beverage Guidance Council is self

appointed, but its key recommendations are that 'potable water should fulfil the fluid needs of healthy individuals..' and recognises that 'healthful diets may include several other types of beverages' - including alcohol.

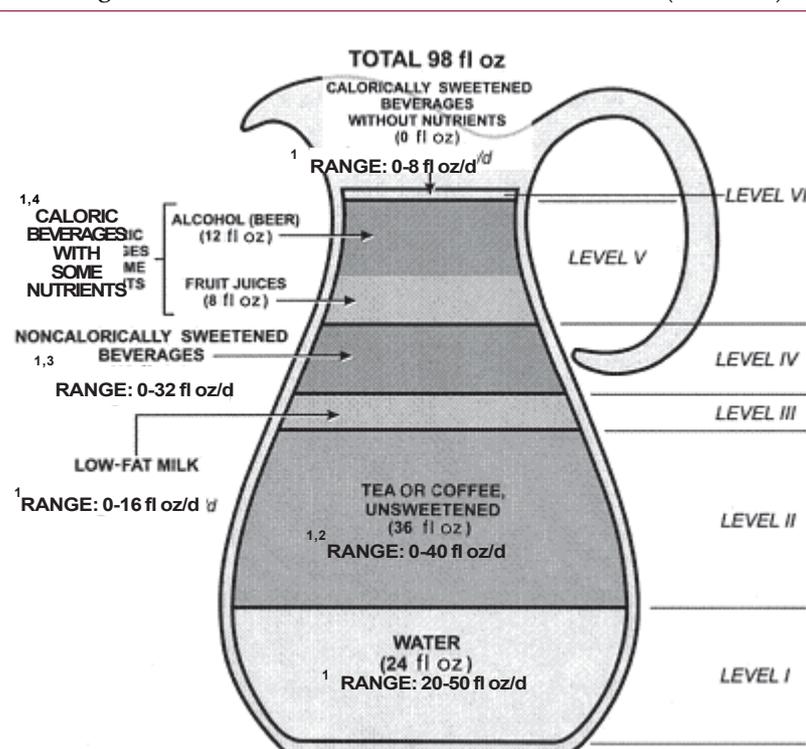
An adequate daily intake of fluid is estimated to be 3.7 litres for men and 2.7 litres for women (80% derived from beverages, 20% from food sources). The panel ranks beverages in 6 levels with the least preferred at level 6 to water at level 1.

The report recognises that 'alcoholic beverages consumed in moderation have some health benefits for adults'. Moderate intake is defined as the daily consumption of no more than one drink for women and 2 for men. A standard alcoholic drink is defined as one that contains 14 g alcohol and provides 7 kcal/g (100 kcal) per standard alcoholic drink. The report warns however that wine-, malt-, and spirit-based coolers containing 3-7% alcohol may also contain added sugars. An 8-fl oz (237-mL) cooler may

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contain more alcohol than an 8-fl oz of beer, and some coolers contain >250 kcal (compared with 104 kcal in a 8-fl oz soft drink).

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- Level 1 - water (20/30fl oz day)
 - Level 2 - tea and coffee (0-40 fl oz day)
 - Level 3 - low fat and skimmed milk and soy beverages (0-16fl oz day)
 - Level 4 - artificially sweetened drinks (0-32 fl oz)
 - Level 5 -100% fruit and vegetable juices (0-8fl oz day)
Alcohol 0- 1 unit (14g) a day women, 0-2 units (14g) a day men
 - Level 6 - calorific sweetened juices (0-8fl oz day max) carbonated soadas.
- Acceptable beverage consumption patterns (14% of energy from beverages) for a person with a 2200-kcal daily energy requirement. The values 24, 36, 6, 12, 8, and 12 fl oz are shown for illustrative purposes only; the total should sum to 98 fl oz, as shown at the top of the figure. ¹The Beverage Guidance Panel's suggested range for each beverage. ²Range: caffeine is a limiting factor up to 400 mg/d, or 32 fl oz coffee/d (can replace water). ³Can substitute for tea and coffee with the same limitations regarding caffeine. ⁴100% fruit juices, 0-8 fl oz/d, alcoholic beverages, 0-1 drink/d for women and 0-2 drinks/d for men; whole milk, 0 fl oz/d. 1 fl oz = 29.57 mL.

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Annual Subscriptions to AIM
Single subscription to AIM Digest on-line (published bi-monthly) £150, \$350 or E200

Corporate subscription level of £500, \$1000 or E800 for AIM Digest on-line and the monthly highlights.

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Published by: AIM Digest,
PO Box 2282, BATH, BA1 2QY.

Australia

Winemakers claim proposed reforms to taxes on alcoholic drinks could wipe out one-third of Australia's grape producers.

The Australian Medical Association (AMA) is one of a number of health groups which want to see a volumetric tax scale, whereby alcoholic drinks are taxed according to the volume of alcohol they contain. The AMA says beverages such as cask wine and pre-mixed spirits are not taxed very highly. President of the Vineyards Association of Tasmania, Stuart Bryce, says his group supports and promotes responsible drinking, but argued that raising taxes on wine and other drinks will not stop alcohol abuse. He also commented that the proposed reforms could wipe out one-third of the nation's grape producers.

The AMA has defended its push to raise the level of tax. "The problem with cask wine is currently that it is quite cheap but also quite potent and is a very significant source of alcohol abuse," Federal AMA President Dr Mukesh Haikawal said. He also suggested that any increase in revenue should be funnelled into alcohol education programs.

Scotland

Children are to be used in a pilot to prosecute traders who sell to under 18's before the planned introduction of test purchasing under the new Licensing (Scotland) Act 2005. Despite being used to crack down on retailers selling products such as fireworks and tobacco following the revised prosecution policy in 2004, test purchasing has yet to be used in Scotland for alcohol. This is due to it being against the law for a minor to attempt to buy alcohol in licensed premises, under current legislation. A spokeswoman for the Scottish Executive confirmed that the Executive was looking into what provisions of the new Act would have to be brought forward in order to allow the pilot to proceed.

Netherlands

A research study carried out by the Dutch Foundation for Alcohol Prevention (STAP) concluded that age limits for the sales of alcoholic drinks are not respected in the Netherlands.

Young mystery shoppers visited 300 supermarkets and liquor shops in the Netherlands over and 86% of the teenagers managed to buy alcohol.

Under the 'Alcohol and Catering Law', it is forbidden to sell alcoholic products to children below the age of 16; the age-limit for selling distilled spirits is 18 years. Alcohol sellers are required to check the age of the youngsters. Only 1 out of 7 teenagers were asked to prove their age.

The Director of STAP, Mr Van Dalen concludes that "educational campaigns of the alcohol industry to their personnel have failed." STAP therefore urges the Dutch government to enforce the 'Alcohol and Catering Law' in order to better protect children and young people. They suggest that mystery shoppers could be used to detect alcohol sellers that fail to comply with the law.

France

For the first time in its history, the French Spirits Federation has commissioned research into spirits drinking patterns in France. A survey conducted in February by IPSOS revealed that 38% of the French never drink spirits, 19% drink them up to three times a week and 20% are more marginal drinkers. Only 2% of respondents said they drank spirits daily or almost daily. Nearly 70% said that spirits were an integral part of their lifestyle although 44% of those questioned were not sure what the term 'spirit' actually meant.

According to the Federation, lack of knowledge encourages a number of myths, one of which is that the alcohol contained in spirits is stronger than in other alcoholic drinks. Researchers found that the French are generally sensible spirits drinkers, taking time to savour them, in small quantities and in a cosy, relaxed atmosphere. 82% of the sample population said they always kept spirits at home for guests. (Source: *Journee Vinicole*)

(Continued from front page)

The health effect of coolers has not been studied. The authors then carry out a balanced analysis of the health risks and benefits of drinking alcohol.

Level 6: calorically sweetened beverages

The least recommended beverages by the Panel are calorically sweetened beverages with a high energy density with no, or very small amounts of, other nutrients. These include carbonated (fizzy) and noncarbonated (still) beverages, which are usually sweetened with high-fructose corn syrup or sucrose. The authors state “Our recommendation is to consume calorically sweetened soft drinks and juice drinks sparingly. Caloric sweeteners have been linked to dental caries, increased energy intake, weight gain, and type 2 diabetes”.

The authors state; “In the quantities consumed today, soft drinks and fruit

drinks most likely contribute to the obesity epidemic by facilitating excess energy intake.” At the same time, the Panel recommends a significantly reduced intake of calorically sweetened beverages (including smoothies).

What is the proportion of energy from beverages a person should consume? A summary of the beverage intake pattern of adults aged 19 y in the United States from the 1999–2002 NHANES, conducted in a nationally representative population sample, shows the pattern of energy obtained from the different categories of beverages .

The pattern for adults aged 19 is that water, tea, and coffee intakes—the unsweetened beverages—accounted for 70% of the total volume but contributed only 2% of the calories. In contrast, the calorically sweetened soft drinks and

fruit drinks provided 46% of the calories. As noted earlier, the proportion of energy from beverages for the average American aged >2 y was 21%. Hence, US adults aged 19 y consumed 464 calories/d from beverages. “A reduced intake of caloric beverages that provide no nutritional benefit is needed to reduce this high energy intake from beverages; these beverages are not needed to fulfill the daily energy intake of any individual,” concludes the report.

EFRD revises code of conduct on marketing

The European Forum for Responsible Drinking (EFRD) has revised its code of conduct on marketing.

The Forum issued the revisions to its so-called ‘Common Standards’ in March. The Common Standards on commercial communications set standards for drinks industry marketers across the EU. They apply in addition to relevant national laws and codes. The code includes specific provisions on minors, misuse, drink-driving, health aspects, pregnancy and social and sexual success.

The most notable changes include a minimum age of 18 (or relevant national drinking age limit if higher) as the general age limit for commercial communications for all products in EU countries, even where the legal purchase age is lower.

The adult audience threshold for media audiences in print and broadcast media has also been set at 70%. If more than 30% of an audience is below 18, subscribers to the Common Standards will not advertise. The same provision now specifies that models used in advertisements should be above 25 years of age.

“We will now work to ensure that other companies will be informed about these changes and provide the industry with support on how to apply the new rules,” added Philippe Mouton, head of EFRD’s task force on responsible marketing.

Distributor Responsibility Efforts Highlighted at National Forum

The recent “Responsible Retailing Forum” in Washington, D.C investigated issues of responsible retailing at the level of store, chain, community and state.

The panel discussion, called “Responsible Retailing Systems Project,” was centered around the community roll-out of a new model of responsible retailing which was derived from the Center for Substance Abuse Prevention “Report on Best Practices for Responsible Retailing.” The model, which applies “enforcement + assistance,” is currently being evaluated in Albuquerque, New Mexico and in two other pilot sites. The discussion included insight from New Mexico representatives from both the public and private sector.

Much of the discussion surrounded America’s beer distributors’ ability to reach chain as well as independent retailers when promoting responsible retailing best practices. Small retailers don’t fear that distributors will put them out of business, whereas they are often wary of government and law enforcement officials. Therefore

distributors play a critical role in facilitating responsible retailing.

Dave Mosher of Maloof Distributing Company emphasised the distributor’s role in accessing the independent retailers. “When information comes down, we bring it to the weekly sales meeting,” he said. “Our salesmen then go to the decision maker at the store and make sure he has the information.”

NBWA and its members provide numerous materials to help retailers practice responsible retailing. Beer distributors also sponsor a variety of programmes to fight underage drinking, including public service announcements, publications that help parents talk to their children about not drinking, educational speakers in schools that encourage students to stand up to peer pressure, and alcohol-free prom and graduation parties. These efforts, along with those of teachers, parents and community leaders, have contributed to the steady decline of underage drinking over the past twenty years.

For more information visit: http://www.nbwa.org/public/promote_resp/index.aspx

“UK adults use alcohol to deal with stress, anxiety and depression” study claims

Many people “self medicate” with alcohol to make themselves feel better, according to research from the Mental Health Foundation (MHF). The survey found that 88% of people would find it difficult to give up alcohol completely while 77% said it made them feel relaxed. 63% of more than 1,000 people questioned said alcohol made them feel happy, 51% felt less inhibited and 41% felt more confident while drinking. 44% felt consuming alcohol made them “able to fit in socially”, 40% felt less anxious and 31% felt they could make friends more easily.

The poll, accompanies a MHF report into alcohol and mental health called Cheers? The report finds evidence that many adults in the UK are using alcohol to deal with feelings of stress, anxiety and depression.

The report authors warn that excessive drinking increases vulnerability to a range of mental health problems - because regular drinking changes the chemistry of the brain. Alcohol depletes the neurotransmitters that the

brain needs to prevent anxiety and depression naturally, they said. They also argued that while the physical impact of alcohol is reflected in Government policy, not enough is being done about the link to mental health.

Dr Andrew McCulloch, chief executive of the foundation, said: “The research confirms our worries that people are drinking to cope with emotions and situations they can’t otherwise manage, to deal with feelings of anxiety and depression....Drinking alcohol is a very common and accepted way of coping - our culture allows us to use alcohol for ‘medicinal purposes’ or ‘dutch courage’ from an early age. But using alcohol to deal with anxiety and depression doesn’t work as alcohol can weaken the neurotransmitters that the brain needs to reduce anxiety and depressive thoughts.”

The foundation believes that health warnings should be introduced on packaging for alcoholic drinks, with the warning: “Excessive use of alcohol can damage your mental health.”

US legislation levies fines on adults who supply alcohol to minors

Legislation aimed at punishing adults who provide alcohol to those under the legal drinking age has been passed by the Connecticut House of Representatives. The bill now goes to the Senate for consideration.

Connecticut-based Diageo called for quick passage of the bill (HB 5211). If passed, adults who host an event on public or private property where underage consumption occurs will be heavily fined.

Diageo has also led passage of similar bills to fight underage drinking by suspending the driver’s license of adults who knowingly provide alcohol to under 21s. Bills have been introduced in nearly 20 states and signed into law in Arizona, Colorado, Louisiana, Texas and Virginia.

According to authorities, adults are by far the main source of alcohol for underage drinkers. The research

organisation, The Century Council, found that 65% of underage drinkers get their alcohol from family and adult friends.

A report to Congress by the National Academy of Sciences identified friends and adult purchasers as the most frequent sources of alcohol among college students and older adolescents. Family members were cited as the most frequent source for younger adolescents.

“Diageo and its employees strongly endorse zero tolerance when it comes to underage drinking,” Joe Luppino, Director of State Government Relations for Diageo said “It is crystal clear that when you enable law enforcement to target the locations where most underage drinking takes place, you make our kids safer.”

Tougher standards on alcohol in Russia

The Russian government is set to introduce tougher standards on imported and domestically produced alcoholic beverages.

“The tougher regulations will apply to Russian producers and importers under the new law on the alcohol trade,” health minister Mikhail Zurabov said.

The news comes as repercussions continue over Russia’s decision to suspend imports of Moldovan and Georgian wine on March 27 after chief medical officer Gennady Onishchenko suggested the wines failed to meet current health and safety standards. As many as 35,000 people die in Russia each year from alcohol poisoning and Zurabov said the government was determined to tackle the problem.

Portman Group backs product placement for drinks brands

The Portman Group has told Ofcom the drinks suppliers should be allowed to use product placement in TV shows, if rules on such marketing activity are relaxed for other advertisers, but stated that it would be concerned if the alcohol product placement was allowed to undermine the careful safeguards applied to alcohol advertising.

Ofcom launched a consultation into the potential for product placement in the UK last year, and the process closed at the end of April. Paid for product placement is out-lawed in the UK although the unpaid use of brands as props to add to the realism of dramas is allowed. The National Consumer Council described product placement as a “stealth advertising tactic too far”.

Product placement is viewed as a route to more screen time by advertisers in the face of new technology which allows viewers to avoid ad breaks. Findings from the consultation will shape government policy in talks in Europe over future broadcast guidelines. Any new rules would be unlikely to come into force before 2008.

Alcohol branded products and their effect on drinking for the young

Middle-school children who wear alcohol-branded T-shirts and caps may start to drink sooner than their peers, according to a new study.

The findings, researchers point out, are similar to those of studies from the 1990s that linked cigarette-branded merchandise to a greater risk of adolescent smoking.

It's uncertain whether clothes or bags with beer logos encourage some young people to start drinking. But the study results are concerning enough that parents and schools should consider keeping the merchandise out of children's hands, said lead author Dr. Auden McClure of Dartmouth Medical School in Lebanon, New Hampshire.

Besides possibly swaying a child's own attitude toward drinking, alcohol-branded gear turns children into "walking advertisements" aimed at their peers, McClure noted in an interview.

The study followed 2,400 middle school students, ages 10 to 14, who said during an initial survey that they

had never used alcohol. The students were surveyed again one to two years later, at which time they were asked if they owned any alcohol-branded merchandise and if they had ever tried drinking.

Overall, 14% said they had some alcohol-related item, usually T-shirts, caps or jackets. These children were 50% more likely than their peers to have started drinking — even with factors such as school performance and friends' drinking habits taken into account.

The study has its limits, McClure said, and it cannot establish beer-bearing T-shirts as the cause of some children's drinking. But, she added, the findings "are strong enough that we're saying, 'Let's be cautious.'"

For parents, she and her colleagues add, that means keeping alcohol-branded gear out of the home, while schools can do their part by restricting students from wearing or carrying such items.

Source: *American Journal of Preventive Medicine*, April 2006

Ethnic groups need specialist services to tackle alcohol misuse

Ethnic minorities may have particular problems with alcohol use, yet may not be seeking help, warns a senior psychiatrist in the BMJ. Rahul Rao of the South London and Maudsley NHS Trust believes that these hidden populations need specific services - and more research.

In the United Kingdom, several ethnic minorities have higher levels of alcohol use and resulting health problems than the general population, writes the author.

For example, 34% of Irish men drink above the weekly recommended limit of 21 units of alcohol, compared with 29% of the general Irish population and 27% of the general British population. A similar problem exists in south Asian (Sikh) male migrants to the UK and Hispanic men in the United States.

Both alcohol misuse and ethnicity are bound to social disadvantage, says the author. Considerable stigma also surrounds alcohol misuse in minority ethnic groups, particularly for Asian communities in the UK, where people from an older generation are unwilling to recognise alcohol misuse within their communities.

As a result, people with alcohol problems may try to cope on their own rather than use alcohol services, or they may be unaware of alcohol services. In turn, health providers may avoid developing services for ethnic minorities.

Alcohol misuse cannot simply be tackled using a broad population approach without culturally appropriate services to meet the needs of minority ethnic groups, he writes. This in turn cannot be achieved without a knowledge base drawn from high quality research within specific populations.

Some progress has been made in developing culturally appropriate services over the past 10 years. But at present, such knowledge remains patchy, the research concludes.

Source: Rao R. Alcohol misuse and ethnicity. *BMJ* 2006;332:682.

UK Violent Crime Reduction Bill

The Violent Crime Reduction Bill includes two key proposals for the wine and spirit trades: Alcohol Disorder Zones and the offence of persistently selling alcohol to children. The Bill will give local authorities the power to designate an area as an Alcohol Disorder Zone which will enable them to levy charges for additional services within that area to prevent alcohol-related disorder, such as policing.

The Bill is currently making its way through the House of Lords. The WSTA has drafted amendments that have been supported by the British Retail Consortium and the Association of Convenience Stores; these have been tabled by the Opposition Spokesman and will be debated at Committee.

The guidance and regulation to accompany the bill will set out the details of what the government intends to achieve and how.

Jeremy Beadle WSTA commented "Of critical concern to our members are questions such as: who will the ADZ's apply to and how? Will licensees who close before night-time disorder starts be expected to pay the same amount as late night venues? How will the area be defined? Will specialist alcohol retailers be charged any differently to supermarkets and convenience stores".

The WSTA is lobbying for exemptions based on opening hours and recognition of responsible trading and good practice.

High depression rates linked to alcohol in Eastern Europe

In one of the first assessments of the incidence of depressive illness in former Warsaw Pact countries, researchers have found the prevalence of depressive symptoms among urban populations of three countries to be relatively high.

Dr Martin Bobak and Dr Hynek Pikhart of the International Centre for Health and Society, University College London, UK, and colleagues found that, as in other countries, depression is associated with alcohol consumption as well as certain socio-demographic factors. The study, conducted in Russia, Poland and the Czech Republic, showed that twice as many women suffered from depression as men, and that their depressive symptoms were linked to binge drinking, deprivation and being divorced or widowed.

This research was based on data from the pilot for the Health, Alcohol and Psycho-social factors in Eastern Europe study, a cross-sectional study of urban population samples in Novosibirsk in Russia, Krakow in Poland and the twin Czech city of Karvina-Havirov. The researchers randomly selected more than 2,000 men and women aged 45-64 and measured depressive symptoms in the previous week.

The survey revealed that the prevalence of depressive symptoms in Russia was 23% in men and 44% in women. The rates were similar in Poland, at 21% for men and 40% for women, while in the Czech Republic the corresponding figures were 19% and 34%.

Roughly 60% of Russians rated the changes in their income and material circumstances after 1989 as "bad" or "very bad". This proportion was substantially lower in Poland and the Czech Republic. Higher levels of education were associated with lower rates of depression in the Czech Republic and Poland, but with higher rates in Russia. The report's authors suggest more research is needed to clarify this paradoxical finding.

Source: Bobak M et al, *British Journal of Psychiatry* 2006; 188: 359-365

New initiatives from the Portman Group

A new survey from the Portman Group has shown the negative effects of drinking too much on men aged between 18 and 30 and how a small minority of these men are still behaving violently after binge drinking. The survey, "Out of Order", was carried out amongst a sample of 1,000 18-30 year old men throughout the United Kingdom from a range of backgrounds. Respondents ranged from those who never drank and occasional light drinkers to regular moderate and heavy drinkers.

The results show that that after drinking a lot of alcohol: 32% felt more aggressive (in London the figure was 47%); 36% said they felt more confident; 89% said they had felt or been sick; 18% said they had really embarrassed themselves; 12% said they had been involved in a fight and 84% said they had been in an argument with their friends or girlfriend; 20% said they had ended up in a police cell and 11% said they had ended up in hospital.

Of those who had been involved in a fight after drinking too much, a third said their friends thought they were an idiot.

The Drinkaware Trust, the charitable arm of the Portman Group funded by the industry, has launched a new advertising campaign. The ad will be shown in cinemas throughout the country with Mission Impossible 3 from the beginning of May and aims to raise awareness amongst men of excessive drinking and its potential consequences.



A second programme 'Streetwise' which is aimed at students aged 11-16 has also been launched following results of a survey commissioned by The Drinkaware Trust. The survey found that over 55% of 11-16 year olds questioned receive more teaching about drugs than alcohol at school and

43% receive more teaching on sex education than drugs.

Government statistics show that over the last ten years, weekly consumption amongst 11-15 year olds who drink (i.e. around 22%) has doubled and around 1,000 under 15s need emergency treatment for alcohol poisoning each year.

The survey also found that 36% didn't receive any information or advice about alcohol outside of school; 55% thought it important for children their age to receive more alcohol education in schools; the average age of first drink (a whole drink) in the sample was 11. 24% said they had done something they later regretted as a result of drinking.

'Streetwise' was developed by teachers, parents, police representatives and students. It consists of an interactive CD-Rom containing videos and a "virtual" town allowing students to learn about the role of alcohol use and misuse in an engaging and informative way and activities to reinforce and aid students' learning supported by teachers' notes, lesson plans and curriculum references.

A flyer sent to PSHE heads of secondary schools across the UK last month has already generated over 3400 requests for the resource, showing a real demand for alcohol education resource in secondary schools.

Jean Coussins, from the Portman Group commented "For many years alcohol education has been the Cinderella of the curriculum. Over 50% of the children questioned said that they received more information on drugs than alcohol at school so there is clearly a need for a resource like Streetwise. The overwhelming response from teachers and schools is very encouraging."

It should be noted that the Alcohol Producer's Fund, to include industry and non-industry stakeholders and government observers that may be known as 'Drink Aware' is still in formation. A Chief Executive and Trustees are yet to be appointed.

US teen drinking unchanged

A report by the U.S. Substance Abuse and Mental Health Services Administration, based on interviews of 135,500 people, is the first to document state-by-state drug and alcohol use from 2002 to 2004.

It found that in 2004, 10.9% of young people age 12 to 17 reported that they had used an illegal drug in the past month, a drop from 11.4% in 2002. At the same time, teen alcohol use remained basically unchanged from 17.67% in 2002 to 17.65% in 2004. Among the youths age 12 to 20, California drinkers rose from 24.7% to 26.3 %, while Wisconsin increased from 34.7% to 38.3%.

The report showed wide disparities from state to state when it came to tobacco use as well as alcohol use and drugs, including cocaine, marijuana and the non-medical use of pain relievers.

Alaska and New Mexico topped the list among those ages 12 and older who reported using an illegal drug in the past month, at 11.8% and 11.3%, respectively, compared to a national average of 8.1%. The most drug-free were Mississippi (5.8%) and Iowa (6.5%).

Among teens, tobacco-producing state Kentucky as well as South Dakota had the most tobacco use at 24.3 percent and 21.3 %, respectively, compared to a national average of 14.4%. The lowest were Utah (8.7%) and the District of Columbia (9%)

Eight states ranked in the top fifth for underage use of alcohol as well as underage binge use: Iowa, Massachusetts, Montana, New Hampshire, North Dakota, Rhode Island, South Dakota and Wisconsin.

Douglas Wright of SAMHSA, who authored the study, said the results show that states need to review their individual findings carefully so they can tailor anti-drug and alcohol efforts accordingly. In general, colder, more rural states in the north may need to be particularly vigilant, he said.

The report can be found online (<http://www.oas.samhsa.gov/2k4State/toc.htm>).

Datamonitor report on a European night out

Drinkers in the UK consume 6.3 units of alcohol, compared to an average European rate during 'a night out' of 5.1 units. The study also revealed drinking rates across the continent were falling. Datamonitor analyst John Band said people across Europe were starting to spend less time in pubs and bars. "Going out is becoming less and less about drinking, and alcohol consumption is becoming something that people do at home".

He also believes that binge drinking in the UK is declining; "It's clear that the culture of binge drinking is on its way out, with British consumption per occasion falling closer in line with the levels seen on the continent." Average UK nightly drinking levels fell by 0.5 of a unit since 2000. But the rate of 6.3 units was still higher than in

Germany at 5.5 units, Spain, 5.3 units and France, 4.9 units. The Netherlands and Sweden were at the bottom of the drinking league, consuming 3.9 and 3.1 units per night out.

Other research suggests UK drinking habits could change in the future. A study from the University of the West of England suggests that when the smoke ban starts in summer 2007 pubs and bars will attract more female drinkers and research by the department for Work and Pensions revealed mothers who are working or in the most affluent households drink more than mothers from poorer families - one in five mothers from the top income group said they drank three or four times a week, compared to just 6.5% in the lowest.

Efficacy of server training questioned

Alcohol-server training programmes have no measurable effect on reducing alcohol-related injuries, according to a review led by researcher Katherine Ker of the London School of Hygiene and Tropical Medicine examining 20 previously published studies.

The programmes, which educate bartenders and liquor store clerks to prevent underage sales and drunk driving, are usually too limited to be effective. Ker said that server-training programmes were as short as one or two hours, and are not delivered to all employees. "There were some interventions that sounded promising, but if you're only able to train 50 percent or 60 percent of the people, you can't tell if the intervention doesn't work or if it's because of lack of compliance...If you could address the issue of compliance, you might be able to get more favorable results."

Ker did not dismiss the concept of server training, however, stating that "implementing such interventions in server settings is a good way of reaching a large number of people who need it".

Source: Ker K. Interventions in the alcohol server setting for preventing injuries. The Cochrane Database of Systematic Reviews 2006; Issue 2.

Diageo launch new low alcohol fruit drink

Diageo have launched a new product that combines a low alcohol content (ABV 4%), mixed with pure fruit juice.

The product, Quinns, was launched in the UK in March. Stephen White, Diageo UK's innovation marketing manager explained that research showed an emerging trend within the mid- to late-20s and early-30s group away from higher tempo drinking occasions - big nights out - while there was a corresponding increase in lower tempo occasions, such as a drink in the early evening, coming home from work, or relaxing with friends.

"Looking particularly at women in this target audience, it became apparent that their needs weren't being met. There was a genuine need for a product that had the maturity and sophistication that wine has, but actually had a lower ABV" he said. There was a strong positive response from the idea of a 100% fruit product.

Diageo plan a European roll-out following a successful UK trial.

US researcher collaborate on genetics of alcoholism research

Research centers across the United States have compiled a list of thousands of genes associated with alcohol consumption in mice that may have important implications for the understanding and treatment of human drinking problems.

Some 3,800 mouse genes whose activity “significantly and consistently changed between all models of high or low amounts of alcohol consumption” have been identified in the multi-centre effort.

“A prime goal of this research would be a test for a panel of genes that could indicate an inborn vulnerability to alcoholism,” said researcher Susan E. Bergeson, assistant professor of neurobiology at the University of Texas at Austin.

“This could also be important in knowing how one goes about treating it,” she said. “If someone is an alcoholic, it may be helpful to know the genetic makeup of that person. Treatment could ultimately be geared

toward the genetic mechanism of that form of alcoholism.”

The studies used three lines of mice bred for high and low amounts of alcohol drinking, five inbred strains known to differ in alcohol intake and a hybrid strain with the highest alcohol intake of any known mouse.

One particularly significant finding was identification of 20 genes on chromosome 9 that are associated with high alcohol intake. Similar genes have been found on the same chromosome in humans, Bergeson said.

The discoveries were made possible by a program sponsored by the U.S. National Institute on Alcohol Abuse and Alcoholism that has allowed researchers across the country to pool their findings, she said. “We are all collaborating with one another. Most of the studies in this paper have not been published before,” she added.

Research on the genetics of alcoholism in humans is at an early stage, with

much work still to be done in animals. The first steps already are being taken.

There are a variety of ways to test the role of individual genes, she said. Mice can be bred to lack a specific gene, or the performance of a gene can be lowered or raised to see how it affects alcohol consumption.

The role of specific genes will remain unclear until those experiments are done, Bergeson said. “Many of these genes have not even been characterized yet,” she said. “It’s hard to generate hypotheses at this stage.”

Research in humans will come next, after the role of specific genes is defined. “We don’t expect to find the same mutation in humans, but we hope to identify a pathway involved in the genes that mediates drinking in humans,” Bergeson said.

Source: Susan E. Bergeson, Ph.D, assistant professor, neurobiology, University of Texas at Austin; April 17-21, 2006 Proceedings of the National Academy of Sciences

Alcohol and ovarian cancer risk

Authors of a study examining alcohol consumption and ovarian cancer risk have concluded that their pooled analysis does not support an association between moderate alcohol intake and ovarian cancer risk.

It has been suggested that alcohol may promote ovarian cancer by its potential to increase circulating levels of estrogen and other hormones; through its oxidation by product, acetaldehyde, which may act as a co-carcinogen; and by depletion of folate and other nutrients. Case-control and cohort studies have reported conflicting results relating alcohol intake to ovarian cancer risk.

The study was published in the UK journal ‘Cancer’. The authors conducted a pooled analysis of the primary data from ten prospective cohort studies. The analysis included 529,638 women among whom 2,001 incident epithelial ovarian cases were

documented. After study-specific relative risks (RR) and 95% confidence intervals (CI) were calculated by Cox proportional hazards models, and then were pooled using a random effects model, no associations were observed for intakes of total alcohol (pooled multivariate RR = 1.12, 95% CI 0.86–1.44 comparing e^{30} to 0 g/day of alcohol) or alcohol from wine, beer or spirits and ovarian cancer risk.

The association with alcohol consumption was not modified by oral contraceptive use, hormone replacement therapy, parity, menopausal status, folate intake, body mass index, or smoking. Associations for endometrioid, mucinous, and serous ovarian cancer were similar to the overall findings.

The authors combined results from 10 prospective studies for a pooled analysis (rather than a meta-analysis) to evaluate the relation of alcohol

intake to the risk of ovarian cancer. The previous individual results had led to suggestions of slight increases or slight decreases in the risk of ovarian cancer with alcohol consumption, so the combination of results into a pooled analysis is particularly useful. In the combined results, for 5 – 14.9 g/d (up to a little over one drink, the recommend level for women) the RR was 0.96; even at more than 30 g/day, the RR was only 1.12, and not statistically significant. Further, there was no evidence of a trend for increasing risk of cancer for increasing alcohol consumption; results were similar for each type of beverage. Also, unlike breast cancer, there was apparently no effect on risk from levels of folate intake.

Article: Genkinger JM, et al Alcohol intake and ovarian cancer risk: a pooled analysis of 10 cohort studies. *Brit J Cancer* 2006;94:757 – 762.

Folate intake, alcohol and risk of breast cancer

The authors of a recent study evaluated the possible interaction between alcohol and folate in a paired nested case-control study among postmenopausal women. A total of 24,697 postmenopausal women were included in the 'Diet, Cancer and Health' follow-up study between December 1993 and May 1997. The cohort was followed until December, 2000. The study included 388 cases of breast cancer, and 388 randomly selected controls were used to estimate the breast cancer incidence rate ratio (IRR) in conditional logistic regression analysis.

Results showed that a previously established association between alcohol intake and risk of breast cancer was present mainly among women with

low folate intake. An IRR of 1.19 (95% CI: 0.99–1.42) per 10 g average daily alcohol intake was found for women with a daily folate intake below 300 ug, while among women with a folate intake higher than 350 ug, they could not show an association between the alcohol intake and the breast cancer incidence rate [e.g., folate intake > 400 ug; IRR of 1.01 (95% CI: 0.85–1.20)]. The authors conclude that the findings support the evidence that adequate folate intake may attenuate the risk of breast cancer associated with high alcohol intake.

Article: Tjønneland A, Christensen J, Olsen A, Stripp C, Nissen SB, Overvad K, Thomsen BL. Folate intake, alcohol and risk of breast cancer among post menopausal women in Denmark *Eur J Clin Nutr* 2006;60:280-286.

Does binge drinking affect prognosis after myocardial infarction?

This study found that the risk of death among patients with MI was twice as high in binge drinkers than in nonbinge drinkers. It also showed that binge drinking, which was relatively common (occurring in approximately 25% of drinkers) and often unrecognized, completely negated any protective effect of moderate alcohol intake against mortality.

Although binge drinking may increase the risk of myocardial infarction (MI), its effect on prognosis after MI is unclear. To determine whether binge drinking after MI is associated with death, researchers studied 1919 patients who had been hospitalized with MI. At baseline, 250 subjects (almost all men) reported binge drinking* in the past year (median of once per week); 3% of these binge drinkers had evidence of alcohol abuse recorded in their medical records. During 4 years of follow-up, 318 subjects died.

Binge drinkers had a significantly higher risk of death than did nonbinge drinkers (hazard ratio [HR] 2.0) in analyses adjusted for potential confounders. Results were similar regardless of the amount of usual intake, number of binge episodes, or beverage type.

Light drinkers (consumed approximately < 8 drinks per week) and heavier drinkers (> = 8 drinks per week) who did not binge had a lower risk of death than did abstainers (HRs 0.8 and 0.6, respectively; *P* for trend = 0.009). Light and heavier drinkers who binged did not have a lower risk.

Source: Mukamal KJ, Maclure M, Muller JE, et al. Binge drinking and mortality after acute myocardial infarction. *Circulation*. 2005;112(25):3839–3845.

Alcohol consumption and risk of coronary heart disease in older adults

This study by Mukamal et al. found that the highest category of alcohol intake had the lowest relative risk of Myocardial Infarction; the average weekly intake of these subjects (20.8 drinks) is slightly less than 3 drinks per day.

The study evaluated several aspects of the relationship between alcohol use and coronary heart disease in older adults, including beverage type, mediating factors, and type of outcome. Researchers carried out analyses from a prospective cohort study in four U.S. communities of 4,410 adults aged 65 and older and free of cardiovascular disease at baseline. The primary outcome was the risk of incident myocardial infarction or coronary death according to self-reported consumption of beer, wine, and spirits ascertained yearly.

During an average follow-up period of 9.2 years, 675 cases of incident myocardial infarction or coronary death occurred. Compared with long-term abstainers, multivariate relative risks of 0.90 (95% confidence interval [CI] = 0.71–1.14), 0.93 (95% CI =

0.73–1.20), 0.76 (95% CI = 0.53–1.10), and 0.58 (95% CI = 0.39–0.86) were found in consumers of less than one, one to six, seven to 13, and 14 or more drinks per week, respectively. Associations were similar for secondary coronary outcomes, including nonfatal and fatal events. No strong mediators of the association were identified, although fibrinogen appeared to account for 9% to 10% of the relationship. The associations were statistically similar for intake of wine, beer, and liquor and generally similar in subgroups, including those with and without an apolipoprotein E4 allele.

Further, when they separated this group into groups reporting 14–20 and < 21 drinks/week, the relative risks were 0.55 and 0.61, respectively; the exact number of subjects in the higher category is not reported.

Article: Mukamal KJ, Chung H, Jenny NS, Kuller LH, Longstreth Jr WT, Mittleman MA, Burke GL, Cushman M, Psaty BM, Siscovick DS. Alcohol consumption and risk of coronary heart disease in older adults: The Cardiovascular Health Study. *J Am Geriatr Soc* 54:30–37, 2006.

Moderate drinking associated with better cognition in women

An ongoing study of New York City residents published in the rapid access issue of *Stroke: Journal of the American Heart Association* has found improved cognition in moderate drinking women.

Women consuming up to two drinks a day scored about 20 percent higher on the Mini Mental State Exam (MMSE) than women who didn't drink at all or who consumed less than one drink a week according to Clinton Wright, M.D., M.S., lead author of the study and assistant professor of neurology at the College of Physicians and surgeons of Columbia University in New York. "The difference remained after adjusting for risk factors such as income, marital status, race or ethnicity and other vascular risk factors such as high blood pressure and cardiac disease."

The researchers said they were surprised by the lack of association

between carotid plaque and alcohol consumption. Other research had suggested that alcohol consumption might slow the progression of plaque, the fatty material that builds up in arteries and increases the risk of heart attack and stroke.

"This study suggests that the relationship between alcohol and cognition was not mediated by large vessel atherosclerosis," Wright said. "Future studies previous studies have included blacks or Hispanics, who have higher rates of cerebrovascular disease, dementia and Alzheimer's disease."

Researchers assessed alcohol intake in structured interviews, while carotid artery plaque was measured by carotid ultrasound.

The participants were divided into five groups based on alcohol consumption: Never drinkers (509), Past drinkers (494), Seldom drinkers, less than one

drink a week (300), Moderate drinkers, up to two drinks a day (796) and those who had more than two drinks a day (116)

Wright cautioned that the study is limited by the use of the MMSE, which "is not a very sensitive test and doesn't address a number of cognitive domains that would be assessed by a more sensitive neuropsychiatric evaluation. Such a study is currently ongoing in this cohort." Despite study limitations, the results support observations that moderate drinking is protective in women and do not support large vessel atherosclerosis as a mediating factor.

Source: Wright CB et al. Alcohol Intake, Carotid Plaque, and Cognition. The Northern Manhattan Study. *Stroke* 2006. <http://stroke.ahajournals.org/cgi/content/abstract/01.STR.0000217439.73041.b>

Mediterranean Diet may lower the risk of developing Alzheimer's

A Mediterranean-style diet that appears to cut the risk of heart disease also may help protect against Alzheimer's disease, a new study suggests. People who followed the diet were up to 40 percent less likely than those who largely avoided it to develop Alzheimer's during the course of the research, scientists reported.

Still, more research must be done before the diet can be recommended to reduce their risk of Alzheimer's, said Dr. Nikolaos Scarmeas of the Columbia University Medical Center in New York, lead author of the research.

Scarmeas and colleagues followed 2,258 elderly residents of northern Manhattan for an average of four years. The participants were asked in detail about their dietary habits and evaluated every 18 months or so for signs of dementia. None showed any dementia at the start of the study, but by the end, 262 had developed Alzheimer's.

To look for an effect of diet, the researchers gave each participant a score of 0 to 9 on a scale that measured how closely they followed the Mediterranean diet. Compared to those showing the lowest adherence, those who scored 4 or 5 showed 15 percent to 25 percent less risk of developing Alzheimer's during the study, while those with higher scores had about 40 percent less risk.

The diet tested included eating lots of vegetables, legumes, fruits, cereals and fish, while limiting intake of meat and dairy products, drinking moderate amounts of alcohol and emphasizing monounsaturated fats, such as in olive oil, over saturated fats. Previous research has suggested that such an approach can reduce the risk of heart disease and overall mortality.

In addition it has been suggested that certain components of the Mediterranean diet can reduce the risk of developing Alzheimer's, Scarmeas said. But he said the previous work has tended to focus on individual nutrients like vitamin C or foods like

fish. By studying a comprehensive diet instead, the new research could take possible interactions between specific foods and nutrients into account, he said.

The idea that a heart-healthy diet could also help fight Alzheimer's fits in with growing evidence that "the kinds of things we associate with being bad for our heart turn out to be bad for our brain," said Dr. Marilyn Albert, a Johns Hopkins neurology professor and spokeswoman for the Alzheimer's Association. The list includes high cholesterol, high blood pressure, obesity, smoking and uncontrolled diabetes, she said.

The new work is among the most convincing so far to show an effect of diet on Alzheimer's risk, she said. Such large studies are important, she said, "to add to the body of evidence to help persuade people they really can do something in their daily lives to reduce risk."

Source: Scarmeas N et al. Mediterranean diet and risk for Alzheimer's disease (p NA). *Annals of Neurology* 2006.

Research suggests systematic error in prospective studies relating to moderate alcohol use and reduced mortality

Source: Fillmore KM, Kerr WC, Stockwell T, Chikritzhs T, Bostrom A. Moderate alcohol use and reduced mortality risk: Systematic error in prospective studies. *Addiction Research and Theory* 2006; preprint.

Comments: R. Curtis Ellison, MD, Luc Djoussé, MD, ScD, Kenneth J. Rothman, DrPH, Yuqing Zhang, MD, ScD, Institute on Lifestyle & Health, Boston University School of Medicine.

Summary: The authors of this article state that the majority of prospective studies on alcohol use and mortality risk indicate that abstainers are at increased risk of mortality from both all causes and coronary heart disease (CHD). This meta-analysis of 54 published studies tested the extent to which a systematic misclassification error was committed by including as “abstainers” many people who had reduced or stopped drinking, a phenomenon associated with ageing and ill health. The studies judged to be error free found no significant all-cause or cardiac protection, suggesting that the cardiac protection afforded by alcohol may have been over-estimated. Estimates of mortality from heavier drinking may also be higher than previously estimated.

Comments: There have been a large number of “meta-analyses” evaluating the relation of alcohol consumption to the risk of CHD. Essentially all previous ones have concluded that, despite the high probability of some residual confounding (inherent in observational studies), the overwhelming evidence supports an inverse association between light-to-moderate alcohol intake and CHD. Such a finding has been strongly supported by hundreds of intervention studies in humans showing how alcohol can block the development of atherosclerosis, reduce most cardiovascular risk factors, and improve ventricular and endothelial function; further, studies in animals have shown dramatic lowering of risk of the development of atherosclerosis and myocardial infarction from the administration of alcohol. For heavy or abusive drinking, in addition to the known adverse results on a number of non-cardiac conditions (cirrhosis, increase in accidents, etc.), some epidemiologic studies suggest that there may also be an increase in risk of heart disease, but this may be primarily from cardiomyopathy, arrhythmias, etc., and not necessarily from atherosclerotic heart disease.

The present paper has made a number of assumptions and carried out analyses that do not support a protective role of moderate drinking against coronary disease. The primary reason that we question the results of the study is that there have been, especially in recent years, a number of prospective epidemiologic studies that have avoided the errors used by the authors to exclude studies from their analyses; i.e. they have used “lifetime abstainers” as the referent group, and have included occasional drinkers within specific “low-intake” categories, and not mixed them into categories of abstainers or regular consumers of small amounts. One could use such studies to test the hypotheses the authors present and avoid the two types of errors that the authors have sought to evaluate: former drinker

misclassification error (failure to separate former drinkers . . . from complete abstainers) and occasional drinker misclassification error (failure to separate occasional drinkers . . . from complete abstainers). A review of all recent studies that have avoided the two errors described above, and accounted for the pattern of drinking as well, is needed to fully test the hypotheses proposed by the authors of the present paper. Only 2 studies for cardiovascular mortality and 7 studies for total mortality were used as a basis for the final conclusions of the authors in this paper, and we do not believe that they were in any way “representative” of the general population.

There are a number of specific concerns that we have about the analyses in the present paper. These are outlined briefly below:

(1) In the analyses the authors appear to have included studies that did not adjust for smoking. Including an indicator variable that “adjusts” for this failure is inadequate, since smoking is such an important risk factor for CHD, and it is well known that cigarette smoking is much more common in people who consume alcohol.

(2) The decline of alcohol consumption with age appears to be irrelevant as long as there is control for age. The authors do not provide any support for their statement that “Statistical controls for age in these studies are insufficient to control for a strong bias toward less healthy individuals being more likely to reduce or quit drinking.” While in the past physicians may have advised their patients with many diseases to stop alcohol consumption, the reverse is beginning to happen for subjects with coronary disease: more and more, such patients are being encouraged by their physicians to consume small amounts of red wine or other beverage on a regular basis. Further, a number of prospective studies have repeated assessments of alcohol intake, so changes over time in the intake of alcohol can be appropriately evaluated in the analysis.

(3) It is unclear why the authors chose the “light” and “moderate” categories to be so broad, given that they are assuming a J-shaped relation. Their category of “light” drinking combines subjects reporting alcohol intake ranging from one drink/month up to 24 g/day (equivalent to 2 typical drinks), which is up to the maximum limit advised for men, and includes up to double the officially recommended limit of 1 drink/day for women. The “moderate” range goes up to almost 4 drinks/day. In many studies, maximum benefits are seen in the range of ½ to 1 drink/day for women and 1 to 2 drinks/day for men. Creating such broad categories may dilute any putative effects of moderate drinking. The authors could have used many more categories (given the large number of subjects) and perhaps used a spline analysis to determine the shape of the association across models without pre-specified levels. This may have helped avoid exposure misclassification. If there is any benefit among light drinkers, combining them with near-abstainers or with only

occasional or heavier drinkers could mask the true relation between alcohol and CHD.

(4) There are problems in adjusting for intermediate variables in seeking to judge the effects of alcohol on CHD. For example, about 15% of studies adjusted for HDL cholesterol, considered to be the most important biological mechanism of alcohol's effects on CHD. Other factors adjusted for in the analysis included diabetes and body mass index, both of which have been postulated as intermediary factors. It would be important to see the results both before and after adjustments for such factors.

(5) There are ample data to permit stratified analyses, such as according to geographic location, whether or not smoking was adequately adjusted for, and quality of alcohol intake data. A number of studies had information on the pattern of drinking (frequency, quantity, binge drinking, etc.), which has been demonstrated to markedly modify the health effects of alcohol intake. Combining all studies into a single analysis may be inadequate to answer the questions posed by the authors.

The very few studies that were not excluded for total mortality included two reports from one small study of African-Americans initially aged 18-23 and two reports from Japan. There was one paper of Americans aged 18 and older from the general US population (Rehm et al, 2001, *Am J Epidemiol*) and one of middle-aged adults from the UK (Wannamethee & Shaper, 1997, *Int J Epidemiol*). The largest study included was from a population survey in the US (Liao et al, 2000, *Am J Epidemiol*) in which the authors concluded: "Data from these representative US cohorts demonstrated that less than 2 drinks per day for men and less than 1 drink per day for women are associated with the lowest all-cause mortality." For CHD mortality, there were only two studies included in the analysis. Apparently the authors have based their conclusions only on these few studies, which may or may not reflect the general situation. A more deductive meta-analytic approach, such as that used by Maclure (1993, *Epidemiol Rev*), may be a preferable approach to utilize the very large amount of data available on this topic.

(6) The analysis inappropriately used significance testing for inference, and has ignored quantification for possible biases, e.g., from misclassification or residual confounding.

In summary, while we welcome analyses on this topic, we are concerned that the above described problems in methodology, and especially limiting the number of studies included in the final analysis to so few, raise questions about the conclusions of the authors. We agree with the authors that there is a need for further analyses limiting the referent group to lifetime abstainers and with appropriate categorization of intake (especially including pattern of drinking) to provide better estimates of alcohol's effects on CHD. There should soon be enough well-done studies available to permit such an analysis.

Just looking over the papers that our Institute has critiqued in the last few months, we find examples where neither type of "error" studied by Fillmore et al was present. For example, the recent report on a large group of older adults by Mukamal et al¹ was able to separate lifetime abstainers from former drinkers, and separated occasional drinkers from regular light drinkers. These authors demonstrated reductions in the risk of a variety of CHD outcomes from moderate drinking. In another recent paper on older people by Tolvanen et al,² data permitted the separation of ex-drinkers from lifetime abstainers. In their analyses total mortality was highest in the ex-drinkers and lifetime abstainers and 30-40% lower in current drinkers. In a very-large population study in California by Klatsky et al,³ information was available to identify lifetime abstainers, and the investigators were able to separate occasional drinkers from regular light drinkers. As in most other studies, these investigators showed that consumption of 1 to 2 drinks/day was associated with 40% less heart failure associated with coronary artery disease.

Lay Summary: The authors have made the assumption that inadequate control for ex-drinkers and for occasional drinkers (including them in the same category as lifetime abstainers) has led to bias in the vast majority of scientific papers showing less coronary disease (CHD) among moderate drinkers. We have found a number of problems in the methodology in this paper that leads us to question their conclusion that the reduced CHD rate among moderate drinkers is due to bias. The number of well-done studies that avoid the misclassification problems described by the authors is rapidly increasing, and recent such studies have shown almost uniformly that moderate drinking is associated with lower rates of CHD.

References:

1. Mukamal KJ, Chung H, Jenny NS, Kuller LH, Longstreth Jr WT, Mittleman MA, Burke GL, Cushman M, Psaty BM, Siscovick DS. Alcohol consumption and risk of coronary heart disease in older adults: The Cardiovascular Health Study. *J Am Geriatr Soc* 2006;54:30-37.
2. Tolvanen E, Seppä K, Lintonen T, Paavilainen P, Jylhä. Old people, alcohol use and mortality. A ten-year prospective study. *Aging Clin Exp Res* 2005; 17:426-433.
3. Klatsky A, Chartier D, Udaltsova N, Gronningen S, Brar S, Friedman GD, Lundstrom RJ. Alcohol drinking and risk of hospitalization for heart failure with and without associated coronary artery disease. *Am J Cardiol* 2005; 96:346-351?

Why the Pattern of Drinking Matters

Emerging Research on Alcohol, Drinking Patterns, Diet Quality and Health by Elisabeth Holmgren

Research, medical and policy experts alike have emphasised that moderation and sensible behaviour is the only responsible choice for those who choose to enjoy wine, beer and spirits. Over the last few years, emerging scientific studies have continually revealed that the moderate pattern of drinking as part of a well balanced diet can have positive lifestyle effects. In fact, a recent US government study on alcohol, drinking patterns and diet quality found that “healthier diets were associated with healthier drinking patterns.” The authors examined associations between alcohol and diet quality (Healthy Eating Index (HEI) scores) using cross-sectional, nationally representative data from the 1999–2000 National Health and Nutrition Examination Survey. Weighted analyses included 3,729 participants aged >20 years. In adjusted analyses among current alcohol drinkers, as quantity increased from 1 to 3 drinks/drinking day, the mean HEI score decreased from 65.3 to 61.9. Specifically, the study reported that those who drank the most alcohol had the poorest diets, while those who drank the least had the best diets. 1

This article will outline some of the prominent medical research findings which underscore the importance of following sensible drinking patterns and enjoying alcohol in moderation as part of a healthy diet and lifestyle.

Moderate and Light Drinking Patterns Found Most Beneficial

Moderate drinkers were found to be in overall better health according to a study conducted by Oregon Health and Science University. The researchers surveyed several thousand men and women members of Kaiser Permanente Northwest and concluded, “*For both genders, light to moderate consumption and more frequent drinking were associated with better health and functioning; relationships were stronger among women than men.*” The study cautioned, however, that individuals and specifically women who drank heavily were in worse health. Furthermore, the investigators suggested that they did not believe that better health is a result of moderate drinking but that it has been reported that moderate drinkers also tend to lead healthier and more balanced lifestyles. Moderate drinking was defined as one to two drinks per occasion, two or three times a week, or 15 to 29 drinks spread out throughout the month. 2

Stable patterns of light drinking contributed to the lowest all-cause mortality rate according to a Dutch study which analysed whether changes in individual alcohol intake contribute to corresponding changes in mortality. Stable drinkers showed U-shaped all-cause mortality; teetotalers who became light drinkers decreased their risk of dying from heart disease while light drinkers who stopped drinking saw a slight increase in heart disease related problems. Cancer mortality was increased in all

heavy drinking groups. Non drinkers were defined as less than once a week, and light drinkers, between 1 and 6 drinks a week. The study also defined moderate drinkers as those who had up to 13 drinks a week and heavy drinkers beyond that. The investigators concluded, “*Persons with stable patterns of light and moderate alcohol intake had the lowest all-cause mortality. Individual changes in alcohol intake were followed by corresponding changes to mortality.*” 3

Another Danish population-based cohort study obtained risk estimates for all-cause mortality for different quantity and frequency of alcohol intake adjusted for various lifestyle factors, including diet. During the follow up, for the same average consumption of alcohol, a less-frequent intake related to a higher risk of death than a more frequent pattern. The researchers wrote, “*Drinking pattern and not just the total amount of alcohol consumed is important for the association between alcohol intake and mortality.*” 4

Life expectancy benefits were observed among moderate drinkers in a UK study which estimated the deaths and person-years of life lost to age 65 that were attributable to various consumption levels. These included any drinking, drinking within limits, or drinking more than the British Royal Colleges’ limits. The latter are 21 units (8g) per week for men and 14 units per week for women. Most interestingly, deaths attributable to alcohol outweighed those prevented by use for men up to age 54 and for women up to age 64. Among men, those aged 16–24 years, and among women, those ages 35–44 years, were at greatest risk of alcohol-related mortality. Men above 75 and women above 85 and older were most likely to benefit. However, the researchers conclude, “*Although overall mortality risks and benefits of alcohol consumption appear roughly equal, drinking above recommended limits remains responsible for many deaths and a large loss of person-years of life.*” 5

Healthier drinking patterns lead to lower risk for coronary heart disease according to an important review article highlighting that modern epidemiologic studies reveal lower risk of both morbidity and mortality among lighter drinkers. The author of this US study also explained that “*when defining ‘heavy’ as greater than or equal to 3 standard drinks per day, the alcohol-mortality relationship is a J-curve with risk highest for heavy drinkers, lowest for light drinkers and intermediate for abstainers.*” The investigators explained that lighter drinking is unrelated to increased risk of any cardiovascular condition and, in observational studies, is consistently related to lower risk of CHD and ischemic stroke. A protective hypothesis for CHD is robustly supported by evidence for plausible biological mechanisms attributable to ethyl alcohol. 6

Other more recent studies also found that the protective effect was more a function of frequency of consumption than of volume. In fact, small amounts consumed several times a week reduced risk to a greater extent than the same amount consumed over fewer occasions. ⁷ Along those lines, a 2004 population-based case control study also focused on the pattern of drinking and myocardial infarction (MI). Participants were selected randomly from two Western New York counties underscored that the results signify that patterns of alcohol use have important cardiovascular health implication, with more frequent consumption giving the greatest protection. ⁸

In a population-based study of subjects in northwestern New York, the lifetime *volume* of alcohol intake was not related to the development of metabolic syndrome (MS), but the average *intensity* (average amount/drink) of alcohol intake showed a *positive* relation. Frequency of alcohol consumption was protective against some critical health parameters in that more frequent moderate drinkers of both genders were less likely to have low-HDL-cholesterol and less abdominal obesity in women. The authors explained that *“while lifetime use of alcohol is somewhat difficult to interpret, these data suggest that frequent drinking of small amounts may protect against many components of the metabolic syndrome.”* The study also indicated that larger amounts or binge drinking per occasion are harmful. In fact, increasing *intensity* of alcohol use increased the risk of the metabolic syndrome in a step-wise fashion. ⁹

Binge drinking has many negative health outcomes according to research studies from around the world. Three studies brought forward some important aspects with respect to binge drinking and health, further underscoring the results from the above mentioned review study. In fact, a Dutch study suggests that binge drinking disrupts the actions of blood platelets by hindering platelet adhesion to fibrinogen. The researchers concluded specifically, *“Rapid intake of alcohol increases platelet aggregation, which might contribute to the increased mortality associated with binge drinking.”* ¹⁰

Another study found that *“subjects reporting binge drinking had an increased risk of dying in comparison with subjects who drank but did not report binging after a myocardial infarction.”* This held true whether the subjects binged less than weekly or more than weekly. The definition of binge drinking used here (3+ drinks within 1-2 hours) is different from the usual of 5+ drinks per occasion, but showed similar adverse effects. ¹¹

The Importance of Overall Healthy Dietary Patterns

Alcohol as part of a healthy diet leads to increased life expectancy in line with several research studies. According to a study published in the *British Medical Journal*, the Mediterranean diet as a well known healthy nutrition concept is associated with longer life expectancy. The major staples of the Mediterranean diet are characterised by a high intake of vegetables, legumes, fruits, and cereals; a moderate to high intake of fish; a low intake of saturated

fats, but high intake of unsaturated fats, particularly olive oil; a low intake of dairy products and meat; and a modest intake of alcohol, mostly as wine. Adherence to a Mediterranean style Diet lead to an up to 14% increase in life expectancy. The authors wrote in the conclusion, *“Adherence to a Mediterranean type diet, which relies on plant foods and unsaturated fats, is associated with a significantly longer life expectancy, and may be particularly appropriate for elderly people, who represent a rapidly increasing group in Europe.”* ¹²

Dietary patterns and lifestyle factors are associated with mortality from all causes, coronary heart disease, cardiovascular diseases, and cancer, but few studies have investigated these factors in combination. Therefore, the objective of another study was to investigate the single and combined health effect of dietary and lifestyle factors in a European population. Adhering to a Mediterranean diet, moderate alcohol use, physical activity, and non-smoking were associated with a lower risk of all-cause mortality. Similar results were observed for mortality from coronary heart disease, cardiovascular diseases, and cancer. The combination of these four favourable traits lowered the all-cause mortality rate significantly. In total, lack of adherence to this low-risk pattern was associated with a population attributable risk of 60% of all deaths, 64% of deaths from coronary heart disease, 61% from cardiovascular diseases, and 60% from cancer. The researchers concluded, *“Among individuals aged 70 to 90 years, adherence to a Mediterranean diet and healthful lifestyle is associated with a more than 50% lower rate of all-causes and cause-specific mortality.”* An accompanying editorial by Harvard University experts also underscored the importance of lifestyle habits in disease prevention and emphasize that dietary factors and physical activity are of major importance. ¹³

Along those lines a further study found that the Mediterranean-style diet improved the functioning of endothelial cells and reduced vascular inflammation in patients with metabolic syndrome, a medical condition that can increase the risk of cardiovascular disease and type 2 diabetes. ¹⁴

Healthy lifestyle habits may decrease risk of developing or dying from cancer among post-menopausal women who followed recommended dietary and lifestyle guidelines, with those in highest compliance experiencing the best outcomes. Conversely, those women who followed one or none of the nine recommended guidelines for diet and lifestyle had a 35 percent higher risk of developing cancer and a 42 percent greater risk of dying from cancer than women who adhered to at least six of the recommendations considered for the study. The investigators evaluated women's cancer risk and other health outcomes based on how many of specific healthy lifestyle categories the women followed as part of their normal lifestyle. Those recommendations included having maximum body mass index less than 25 kg/m²; having gained no more than 11 pounds since age 18; engaging in daily moderate and weekly vigorous physical activity; eating of 5 or more servings of vegetables and fruit daily;

consuming more than 400 grams (about 14 ounces) of complex carbohydrate per day; *limiting alcohol intake to less than 14 grams per day (one drink)*; limiting red meat consumption to less than 80 grams per day (about 3 ounces); limiting daily consumption of fat to no more than 30 percent of total caloric intake; and limiting use of sodium to less than 2,400 milligrams per day. 15

Drinking around Mealtime May be Advisable

Other studies from around the world have reported that drinking with meals or around mealtime may enable the alcohol to counter adverse effects of fatty foods during the critical digestive phase. 16, 17, 8

More recently, Italian investigators studied how the timing of alcohol consumption in relation to meals might affect the risk of myocardial infarction (MI) in an Italian population and concluded, *“Alcohol drinking during meals was inversely related with risk of acute MI, whereas alcohol drinking outside meals only was unrelated to risk.”* 18 In a 2003 *Scientific American* article, Dr Klatsky summarized the data on moderation and health and explained that drinking patterns (e.g. imbibe slowly and regularly with food) or other factors (e.g. type of consumer and lifestyle habits such as exercise) all may effect the health outcome of alcohol. 19

Drinking patterns are important with respect to overall health. It’s not just how much you drink but the pattern of drinking and even when you drink that can determine the amount of damage to the liver. The effect is most striking for women, according to a report by researchers at the State University of New York at Buffalo. The study found that a woman drinking alone and not eating on a weekend is more likely to be causing damage to her liver than a woman drinking the same amount while dining with a friend. However, the results are different with men, with the amount and frequency of drinking more important than the pattern of drinking, with or without food. The study results showed that a safe level for men is 14 to 27 drinks a week; while for women it is 7 to 14 drinks a week (14g of alcohol in one typical drink). According to the investigators, the findings reinforce the recommendations for both sexes for moderate and slow drinking over a long period of time, rather than over a short period, such as a weekend. The researchers wrote in the conclusion, *“These findings support the hypothesis that, in addition to amount, drinking pattern may affect liver function and that difference exist between sexes with regard to the effect of drinking pattern on liver function and potential liver damage.”* 20

Relationship of alcohol drinking pattern to risk of hypertension was analysed in a sample of white men and women from western New York. Compared with lifetime abstainers, participants reporting drinking on a daily basis or mostly without food exhibited significantly higher risk of hypertension. When the analyses were restricted to current drinkers, participants consuming alcohol without food exhibited a significantly higher risk of hypertension compared with those drinking mostly with food. For major beverage preference, no steady association with

hypertension risk was found across the various types of beverages considered which included wine, beer and spirits. Specifically, the investigators summarized, *“In conclusion, drinking outside meals appears to have a significant effect on hypertension risk independent of the amount of alcohol consumed.”* 21

Alcohol consumption with or without meals and reduced acute myocardial infarction (MI) risk has also been reported. Researchers undertook this study to determine whether the apparent favorable effect of alcohol on the risk of acute myocardial infarction (MI) may be related to its hypoinsulinemic effect when consumed with meals. They studied how the timing of alcohol consumption in relation to meals might affect the risk of MI in an Italian population with relatively high regular alcohol consumption. The researchers found that compared to nondrinkers, an inverse trend in risk was observed when alcohol was consumed during meals only. However, no consistent trend in risk was found for subjects drinking outside of meals. They further explained that the pattern of risk was similar when they considered people who drank only wine and concluded, *“Alcohol drinking during meals was inversely related with risk of acute MI, whereas alcohol drinking outside meals only was unrelated to risk.”* 22

The importance of well-balanced and nutritious diets as a potential disease prevention measure has been long acknowledged and featured by leading nutrition and public health experts. 23 These research findings reveal the importance of moderate drinking as an adjunct to healthy meals and a well balanced daily food intake.

Public Health Advice:

Accumulating scientific evidence throughout this past decade suggests that moderate consumption of alcohol beverages does not pose a health risk to the vast majority of healthy individuals around the world who choose to enjoy sensible amounts of spirits, beer and wine. Also, according to the 2005 *Dietary Guidelines for Americans*, *“The consumption of alcohol can have beneficial or harmful effects depending on the amount consumed, age and other characteristics of the person consuming the alcohol and the specifics of the situation.”* 24

This emerging research underscores the importance of moderate alcohol consumption as part of a healthy diet and lifestyle. Public health guidelines around the world emphasise moderation and clearly condemn irresponsible drinking patterns such as binge drinking and abuse. Many public health messages also reiterate the importance of an overall healthy diet and lifestyle for those who choose to drink without recommending the consumption with meals but rather as an adjunct to it. As the scientific debate will continue, more research findings on drinking patterns may lead to revised basic messages on the lifestyle benefits of enjoying moderate amounts of wine, beer, and spirits as part of a well balanced diet.

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AIM launches redesigned Drinking and You website in the US

 **What is moderation?**

The US Government defines sensible drinking as



Men:
2 drinks (14g) per day

Women:
1 drink (14g) per day

Following the launch of the redesigned UK consumer website in 2005, the AIM revised US consumer website on drinking, government guidelines and related issues is now live. Do visit www.drinkingandyou.com or contact helena.conibear@aim-digest.com for further information.

A Drink is defined as

-  5 fluid ounces of wine (100 calories)
-  12 fluid ounces of regular beer (150 calories)
-  1.5 fluid ounce (jigger) of 80-proof distilled spirits (100 calories)

Beverage Preference and Diet by Erik Skovenborg

The problem of trait differences between users of different beverage types is arguably the single most important consideration in attempting to explain possible beverage type differences in coronary heart disease risk (1). Klatsky et al were among the first to describe the traits of persons who choose wine, liquor or beer (2). Persons who preferred wine were likely to be women, temperate, young or middle-aged, non-smokers, better educated and free of symptoms or risk of illness. Persons who preferred liquor were likely to be men, heavier drinkers, middle-aged and older, less educated and afflicted with symptoms or risk factors for major illnesses. Persons who preferred beer were likely to be young men, who were intermediate between wine and liquor preferers for most traits.

Italian wine drinkers

The authors believed that their findings in California were substantially applicable to other regions of the U.S., however, the interest in good health practices in the entire nation might have found disproportionately strong expression among Californians who choose wine. The traits of persons who choose wine might well be different in other nations; the beverage preferences of excessive drinkers generally reflect the prevailing drinking habits in their socio-cultural milieu (3). In Italy higher risks of esophageal cancer were observed for wine-only drinkers, and after allowance for wine intake, no association was observed between beer and spirit drinking and esophageal cancer in a population in which 80% of alcohol came from wine (4). And in no instance did wine drinkers or mixed drinkers, who include a large proportion of wine drinkers, show an association with indicators of healthy diet in a cross-sectional analysis of the relation between wine drinking and intake of selected foods (5).

Mediterranean diet

In the Copenhagen City Heart Study the participants who had a daily intake of 3-5 glasses of wine had a 50% lower risk of dying from all causes compared to non-drinkers of wine, while beer and spirits drinking had a much smaller beneficial effect (6). No significant interactions existed with sex, age, education, income, smoking, or body mass index. During the years prior to the study period Danish drinking patterns had changed dramatically in favour of wine drinking. In 1975 wine contributed to 17.3% of the total alcohol intake, rising to 30.2% in 1992. The change from beer to wine was inspired by the increasingly popular holiday travels to Mediterranean countries. Now could it be that same Copenhagen citizens that so warmly embraced the Mediterranean wine would also be inclined to embrace the Mediterranean diet? An intriguing question of potential confounding no doubt, but a question not possible to answer back in 1995; The Copenhagen City Heart Study had no data on diet.

Four years later results from the Danish Diet, Cancer and Health Study confirmed the Mediterranean diet perspective; wine was associated with a higher intake of fruit, fish, cooked vegetables, salad, and the use of olive oil for cooking in both men and women (7). The healthy dietary habits seemed independent of educational status. A few years later similar results were reported from the cross-sectional UNC Alumni Heart Study: wine drinkers reported eating more servings of fruit and vegetables and fewer servings of red or fried meats (8).

Confounding or measurement error

Accordingly, we have to respect dietary habits as important potential confounders of alcohol-health relations, but one problem that we seem to have neglected over the years is measurement error. If humans represent the most intelligent form of life on this planet, why is it that they find it so difficult to accurately record the food items they consume daily? People misjudge their diet. They tend to overreport "good" foods and are often in denial of their dietary "sins" (9). Self-report of dietary intake may be biased by social desirability, and given the social and psychological value ascribed to diet the reporting of food intake is particularly vulnerable to response set bias. There is need to sharpen tools like the food frequency questionnaire (FFQ); if nutritional epidemiologists neglect to do so they will increasingly produce inconsistent results and loose credibility in the scientific community.

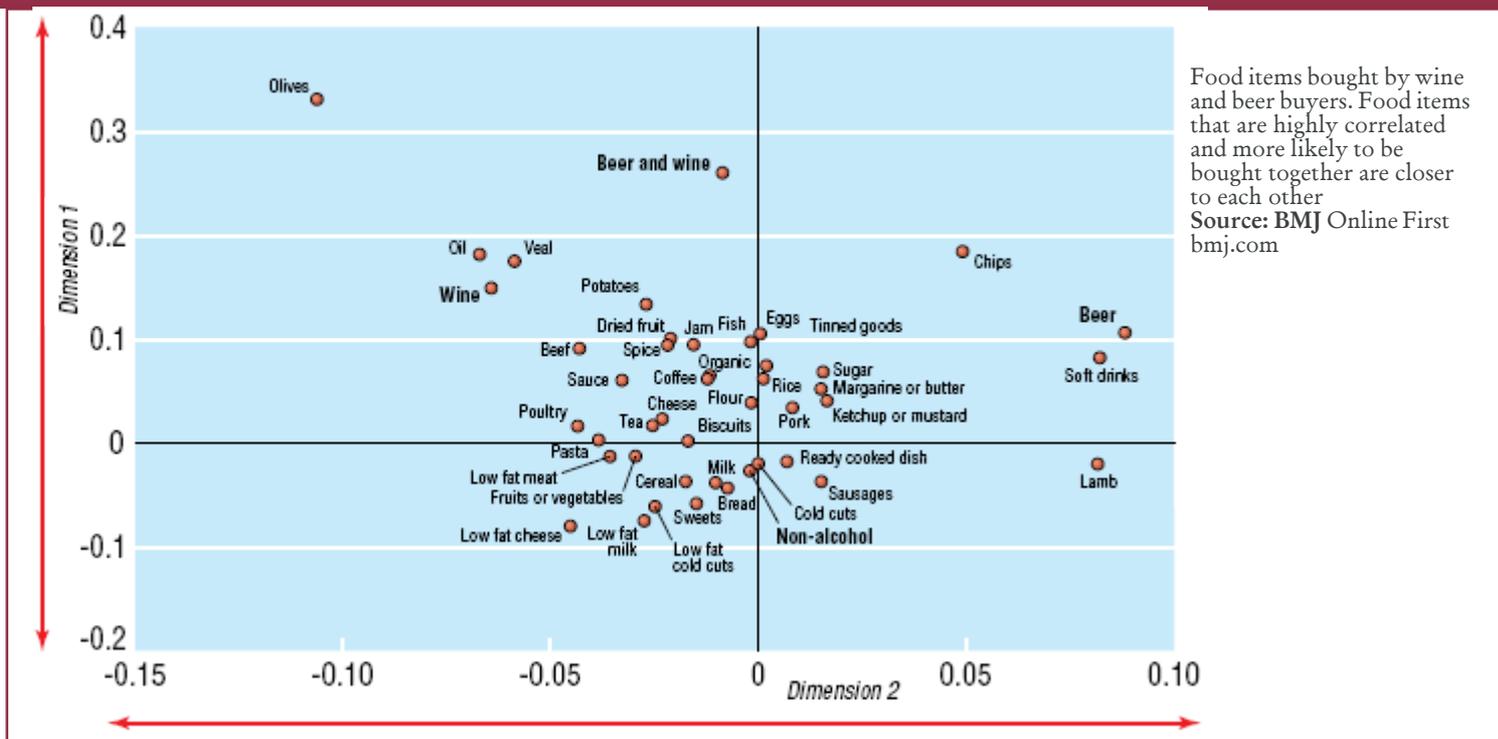
Marine n-3 polyunsaturated fatty acids in fish and fat

Danish scientists studying the association of Heart Rate Variability (HRV) with fish and wine intake found a clever way to verify information of fish intake (10). Fish consumption was positively associated with the level of marine n-3 polyunsaturated fatty acids in human adipose tissue and with HRV. Wine intake was also significantly positively related to HRV, but the patients with the highest wine intake also had the highest intake of fish as documented by a high n-3 polyunsaturated fatty acid content in adipose tissue – no questions asked! The correlation between wine intake and HRV was no longer significant after controlling for the cellular level of n-3 polyunsaturated fatty acids.

Till receipts reveal eating habits

Another alternative to asking people what they eat is to find out what they buy. To study whether people who buy wine also buy healthier food items and therefore have a healthier diet than those who buy beer Johansen et al investigated the relation between the purchase of beer and wine and various food items using data taken from 3.5 million transactions chosen at random from 98 outlets of two large Danish supermarket chains over a period of six months (11). Wine buyers bought more olives, fruit and vegetables, poultry, cooking oil, and low fat cheese, milk

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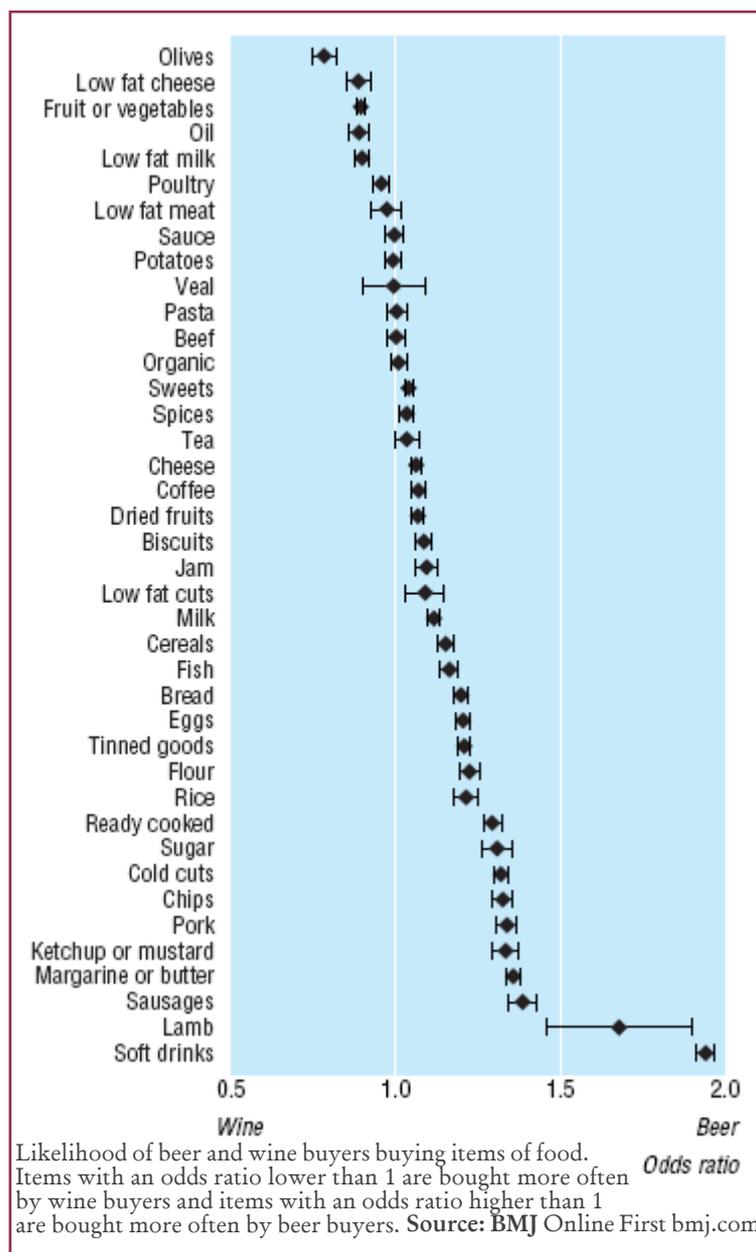
and meat than beer buyers. Beer buyers bought more ready cooked dishes, sugar, cold cuts, chips, pork, butter or margarine, sausages, lamb, and soft drinks than wine buyers. In conclusion wine buyers were more likely to buy Mediterranean food items than beer buyers.

The real confounder: diet or wine?

Is the effect of wine on health fatally confounded by diet? Grønbaek and Sørensen have quantitatively assessed in a theoretical sensitivity analysis whether diet is a plausible confounder of the relation between wine intake and mortality by applying the method to previously reported data from the Copenhagen City Heart Study (12). In the present analysis, the unadjusted odds ratio for the 50 deaths among the 257 exposed (i.e., those who had a daily intake of wine) and the 780 deaths among the 2,553 unexposed (non-wine drinkers) was estimated as 0.6. The odds ratios for the relation between wine intake and mortality, adjusted for a hypothetical confounder, have been calculated for various scenarios. It appears that even a very strong confounder (odds ratio = 0.3 or 0.1) would have to exhibit a very uneven distribution among wine drinkers and non-wine drinkers to fully explain the findings. It seems very unlikely that the previously reported lower mortality among wine drinkers compared to non-wine drinkers can be explained fully by dietary factors. The Mediterranean diet has in six out of 10 cohort studies been found to have a weak protective effect on coronary heart disease (13). However, the dietary studies were not controlled for wine intake, therefore the question still remains: which factor is the real confounder, diet or wine?

Enjoy in moderation

Because food and wine provide some of life's most accessible and potent forms of pleasure, perhaps we should accept that we are dealing with behaviour governed by

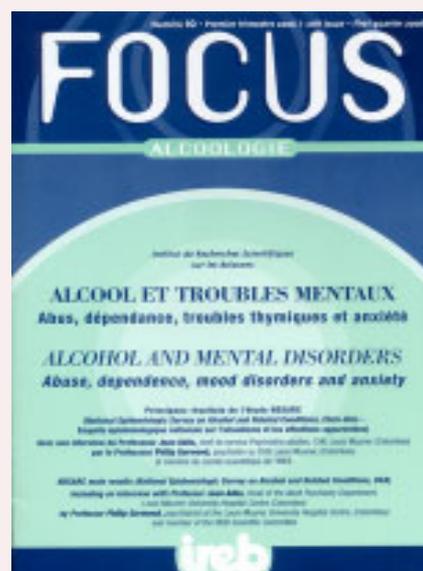


hedonism rather than by rationality (14). We will leave the difficult task of sorting out cause and effect to the epidemiologists. In the meantime, enjoy – though in moderation. It's the smart thing to do – whether you prefer a dry Martini, a bottle of beer or a glass of wine.

Erik Skovenborg is a General Practitioner, a founder member of the Scandinavian Medical Alcohol Board (SMAB), and a valued member of the AIM Medical Council. He was a contributing author to the BMJ study (2006;332:519-22) which analysed the food buying habits of wine and beer drinkers).

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IREB - Alcohol and mental disorders

This issue of “Alcoologie” includes the main results from the National Epidemiologic Survey on Alcohol and Related Conditions, USA and includes an interview with Professor Jean Ades by Professor Philip Gorwood both of the Louis Mourier University Hospital Centre (Colombes).

NESARC was a survey conducted on a sample from more than 43,000 subjects from the general population of the USA. The survey was original because of the way it assessed the prevalence of anxiety or depressive disorder in subjects abusing substances, making a clearer distinction between disorders induced by a substance, and independent disorders.

The survey highlighted two important points:

- one can be dependent on a substance (particularly alcohol) without necessarily abusing the substance;
- mood or anxiety disorders may persist, even after withdrawal, suggesting that the causal relationship between consumption of a substance and mental disorders is not systematic.

For more information visit www.ireb.com

4th European Beer & Health Symposium

The Brewers of Europe symposium on beer and health was held on the 4th May. The session, chaired by Professor Jonathan Powell who is Head of Section at MRC Human Nutrition Research in Cambridge and visiting professor of Medicine at Kings College London. The Keynote address was presented by Mrs Maria Rauch-Kallat Austrian Federal Minister for Health and Women

Speakers on the subject of “Responsible Beer Consumption As Part Of A Healthy Diet” Included:

Dr. Jean-Michel Lecerf of the Pasteur Institute, Lille, (France)

Dr Jean-Michel Lecerf is a Physician in the University Hospital of Lille, in the Internal Medicine Department with a special interest in lipid and metabolic disorders, obesity and diabetes. Head of the Nutrition Department of Pasteur Institute of Lille and Associated Professor at the Sciences University of Lille, he is the author of numerous papers, chapters, and books on nutrition and a member of a numerous scientific societies.

Extracts from ‘Nutrition is there a place for beer?’

‘Beer is not only a source of alcohol. It’s a complex drink which has been brewed for many thousands years. The making of beer needs a cereal (barley,...), hops, malt and a fermentation process that has to be well conducted. The mean nutritional content of beer is: carbohydrates (40 g/l), alcohol (> 38 g/l), proteins (> 5 g/l); but it contains also vitamins (B1, B6, B9, C...), some minerals and phytonutrients (polyphenols, phytoestrogens...).

data on phenolic compounds of barley and hops that are only present in beer. These are pro anthocyanidins (catechins...) and flavonoïds (xanthohumol, isoxanthohumol and 8- prenylnaringenin). They have antioxidant effects, but also phytoestrogenic properties that may be involved in chemo-prevention of cancer, bone protection or cognitive function improvement...

In contrast to the fact that an excessive consumption of beer may induce cancer, osteoporosis and encephalopathy the role of moderate consumption of beer in a good and healthy nutrition is growing. Many studies are needed to determine the place and the amount of beer for a good health, beside a lifestyle including exercise and well-balanced nutrition.

Professor Jonathon Powell (FRSC, PhD)

Professor Jonathon Powell is Head of Section at MRC Human Nutrition Research in Cambridge and visiting professor of Medicine at Kings College London. His MRC Section specialises in micronutrient research and his position at Kings College London is in gastrointestinal science. His major research interests are the biology and biochemistry of iron and silicon and the absorption and immune-potentiating activities of fine and ultrafine dietary particles, including solid phase silicates. Recently his group have also been looking at some aspects of alcohol metabolism. Diseases of interest are Crohn’s disease and osteoporosis.’

Extracts from ‘Beer, silicon and bone’

‘The deleterious impact of abusive alcohol consumption on bone health is well recognised but, in contrast to this, recent evidence consistently indicates that moderate ingestion of alcoholic beverages is positively associated with bone mineral density. Bone mineral density is a proxy for bone health and, at least in population-based studies (i.e. epidemiologically), is currently considered the best relative measure for bone health. Mechanisms are unknown but both ethanol-related and non-ethanol related pathways have been proposed [1].

Recently we have suggested that silicon maybe an especially important non-ethanol component because (a) it is found at high levels in beer and (b) it appears to be an important nutrient in bone health. Our current strategy is to address the alcohol-silicon-bone health issue from a number of angles: (i) we have used acute, human volunteer studies to study the influence that ethanol (2-4.5%) and beer (2-4.5% ethanol) have on the bone resorption marker, CTx. In brief, ingestion of ethanol, and more so beer, acutely decreases CTx in a non-PTH, non-calcitonin dependent fashion. An early calorie-dependent effect (likely mediated by GLP-2) and a late calorie-independent effect appear to exist. (ii) We are using both epidemiological and cellular studies to identify the magnitude and mechanisms of the silicon effect on bone. Thus (iii), in further work, we plan to take these data from (i) and (ii) and see if we can

MICRONUTRIENTS	Per Liter		French Recommended Dietary Allowances (men)	% of RDA for 33 cl
	Range (5°)	Mean (4.6°)		
B1 (µg)	10-150	70	1300	1.8%
B2 (µg)	300-1300	500	1600	10.3%
B6 (µg)	400-1700	600	1800	11%
B9 (µg)	100-130	100	330	10%
B12 (µg)	1.2-2	1.6	2.4	22%
C (mg)	0-6.4	3	110	4%
PP (B3) (mg)	0-20	8	11	24%
B5 (mg)	0.4-1.8	1.5	5	9.9%

Bière, Bruxelles, mai 06

Service de Nutrition - Institut Pasteur de Lille

4

It is proven that an excess of beer consumption, associated with poor nutrition is unfavourable for health but it becomes more and more obvious that a moderate intake may improve some health aspects. The consumption pattern is also a factor in the effects of beer on health.

To add to the growing evidence that moderate consumption of alcohol is beneficial to health there are more and more

construct a 'formula' that describes the mechanisms and epidemiological associations between bone mineral density and the moderate ingestion of the different alcoholic beverages. Finally, we have recently undertaken a very large review of the data in the area of moderate alcohol consumption and bone health and pre-prints will be available.'

Conclusions

- Beer is a potential major source of dietary silicon as absorbable orthosilicic acid.
- Orthosilicic acid is involved in bone **Formation**.
- Moderate Alcohol intake is associated with acute suppression of bone **Resorption**.
- The anti-resorptive effects are in part associated with a simple energy effect (? GLP-2) but also in part due to a novel ethanol-specific effect
- Moderate beer consumption should address bone health from two sides: promotion of bone formation (silicon) and inhibition of bone resorption (ethanol).

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Dr Norbert Frank of the German Cancer Research Centre, Heidelberg, (Germany)

Dr Norbert Frank is working as a senior scientist in the division of Toxicology and Cancer Risk Factors at the German Cancer Research Center (DKFZ) in Heidelberg. Trained as a chemist, his interests are in the field of experimental carcinogenesis by N-nitrosamines. A programme on cancer chemoprevention was established in the division, consisting of three parts: 1) an in vitro/in vivo screening program for chemopreventive activity of natural compounds in co-operation with colleagues from around the world, 2) mechanistic investigations as a prerequisite for the application to humans, and 3) human pilot studies for chemopreventive activity.

Dr Frank's main research interest is the mechanisms of cancer chemoprevention and he has published over 90 papers in refereed scientific journals and book contributions.

Extracts from 'The role of hop compounds in preventing cancer'

'In the last decade, the relationship between isolated hop constituents and specific activities on human health was intensely investigated worldwide. In our search for cancer chemopreventive activities of hop components we found xanthohumol (XN) to be the most active compound after an activity guided fractionation of hop extracts and beer.

XN is a prenylated chalcone found in the female inflorescence of hop cones, and exerts an exceptionally broad spectrum of inhibitory mechanisms at the initiation, promotion, and progression stage of carcinogenesis in our in vitro assay system. Also in mouse mammary organ culture, XN showed cancer preventive properties, prompting us to start in vivo investigations in rats. We could verify antioxidative capacity of XN, of beer, and XN in beer, and we were able to show antiestrogenic activity. In a first experiment, XN had no inhibitory effect on the initiation phase (formation of aberrant crypt foci) of colon carcinogenesis, a second experiment where XN was tested for breast cancer prevention showed promising results.'

Professor Arne Astrup MD, dr.med.sci., Department of Human Nutrition, RVA University, Copenhagen, (Denmark)

Arne Astrup is Head of The Department of Human Nutrition at The Royal Veterinary and Agricultural University in Frederiksberg, Denmark. He was awarded the Chair in Nutrition at the University in 1990. He is also Consultant at the Division of Clinical Nutrition at Hvidovre Hospital, University of Copenhagen.

Extracts from 'Metabolic syndrome and body weight: Where beer fits in'

'The prevalence of obesity in the EU has trebled in the last 20 years. In 2005 20-30 % of men and women were clinically obese (BMI > 30 kg/m²) and a further 50% were overweight (BMI 25-30 kg/m²). Being overweight and obesity are associated with a reduction in life expectancy of between 3 and 14 years, primarily due to the development of a cluster of risk factors named the metabolic syndrome (MS). MS in turn increases the risk of type 2 diabetes, and cardiovascular disease and perhaps certain cancers. It also contributes to a substantial burden of ill health, and impaired quality of life.

The metabolic syndrome is a clustering of risk factors comprising low serum HDL cholesterol, elevated serum triglycerides, hyperglycemia, abdominal obesity, and elevated blood pressure, mediated in part by insulin resistance probably caused by accumulation of visceral and hepatic fat depositions. Whereas MS is associated with lack of physical activity, smoking, and a diet high in saturated fat, the importance of other dietary factors is less well elucidated. Among layman beer consumption is considered to be responsible for causing a beer belly, one of the essential components of MS, but is this relationship supported by scientific evidence?

In observational studies alcohol consumption has generally been found to be inversely associated with cardiovascular disease, and type 2 diabetes, but such findings could actually be due to confounding by other lifestyle factors not accounted for. However, experimental studies support that alcohol increases insulin sensitivity, and increases HDL-cholesterol, so any relation to MS is difficult to predict.

Few studies have examined the association between alcohol consumption and MS, and data are limited on how the relation may be modified by type of alcohol. However, a number of cross-sectional studies have found that alcohol consumption is inversely associated with the prevalence of MS in both gender, and the association remains after other related factors are accounted for. The apparent protective effect of alcohol is particularly seen with beer and wine, and to a lesser degree by spirits. There also seems to be a dose-response relationship, so that smaller doses of alcohol are more protective up to a certain threshold, and above this the risk of MS goes up again.

There is a lack of longitudinal studies, experimental, and intervention studies that have investigated the effect of beer on MS, but the existing evidence suggest that beer consumption exerts a protective effect against MS, and also reduced abdominal fatness.’

Dr Henk Hendricks TNO Nutrition and Food Research, Zeist (The Netherlands)

Dr Henk Hendricks is scientific manager of the clinical studies group investigating efficacy and safety of functional and novel foods mainly. He is interested in various nutritional topics but his main current interest is in “Weight management” and in “Health effects of moderate alcohol consumption”.

Extracts from ‘Moderate alcohol consumption and diabetes mellitus type II’

‘Light to moderate alcohol consumption is associated with a reduced risk for cardiovascular diseases. Epidemiological studies and meta-analyses indicate that light to moderate alcohol consumption is also associated with a reduced risk for diabetes mellitus type II (1,2). In addition, moderate consumption is associated with a reduced risk of CHD in diabetics (3). Mechanisms for such association are currently investigated in randomized controlled trials. Our trials show that moderate alcohol consumption may beneficially affect insulin sensitivity (4, unpublished results), but other mechanisms may also be involved. Fat tissue may mediate some of the effects, either through secretion of adipokines like adiponectin or through modulation of inflammation as reflected in biomarkers like hsCRP and LP-PLA2 (5, unpublished results). Alternatively, intermediary metabolism in muscle may be modulated by moderate alcohol consumption improving insulin sensitivity. Current studies using groups of women homozygous for ADH1C*1 or ADH1C*2 evaluate the role of acetate generated from alcohol in modulating insulin sensitivity.’

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Conclusion

- The present evidence from observational studies suggest an ~30% reduced risk of type 2 diabetes in moderate alcohol consumers
- No risk reduction is observed in consumers of ≥ 48 g alcohol per day
- Alcohol consumption associated with decreased risk of type 2 diabetes among older women
- Three weeks of moderate alcohol consumption did not affect insulin sensitivity, but may improve glucose tolerance
- Changes of adipokines were in line with hypothesis of increases insulin sensitivity with moderate alcohol consumption

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TNO Quality of Life Zeist 4th May 2006



Dr Ramon Estruch Department of Internal Medicine-Alcohol Unit, University of Barcelona (Spain)

Professor Ramon Estruch is Head of Section at the Internal Medicine Department of the Hospital Clinic (Barcelona) in 2002. He is also Associate Professor in the School of Medicine at the Barcelona University. The main research lines developed are the following: 1) Cardiovascular effects of moderate consumption of alcoholic beverages; 2) Effects of the moderate consumption of alcoholic beverages on the expression and function of cellular and endothelial adhesion molecules related to development of atherosclerosis; 3) Effects of different alcoholic beverages on immune system. Prof. Estruch is the leader of the Thematic Network “Mediterranean Diet and Cardiovascular Disease” from the ISCIII.

Professor Estruch reported “The research programme on the effects of alcoholic beverages on the immune system started at 1994 and we have analysed the effects of alcoholic beverages on adhesion molecules related with the development of atherosclerosis (Alcohol Clin Exp Res 1998 and 1999). We have observed that moderate drinkers show lesser serum concentration of adhesion molecules (ICAM, VCAM, E-selectin) than tee-totalers and heavy drinkers (Thromb. Haemost. 2002). In addition, moderate consumption of red wine reduces serum inflammatory markers related to atherosclerosis (Atherosclerosis 2004) and ex-vivo adhesion of human monocytes on an endothelial line (Am J Clin Nutr 2004). Recently, we have started an ambitious study (PREDIMED) to evaluate the effects of a Mediterranean Diet on the primary prevention of cardiovascular disease in high-risk patients, which will enrol 9,000 patients.

All these studies are being performed in collaboration with foreign universities such as: Columbia University in New York, Loma Linda University in California, Harvard School of Public Health in Massachusetts, Human Nutrition Research Centre in Tufts University, Massachusetts, USA and Mario Negri Sud, Santa Maria d’Imbaro, Italy”.

Extracts from 'The role of moderate consumption of fermented drinks in cardiovascular health'

Several epidemiological studies have observed a negative correlation between moderate consumption of alcoholic beverages and the risk of myocardial infarction. However, little is known about the mechanisms by which alcohol may interfere in the development of atherosclerosis and whether the effects are independent or not of the type of alcoholic beverage consumed. A meta-analysis of these studies has shown that fermented drinks, such as beer and wine, have greater protective effects against cardiovascular disease than spirits. Besides ethanol, beer and wine also contains several minor compounds such as polyphenols that may contribute to the differences observed between fermented drinks and distillates.

Although atherosclerosis is considered a chronic low-grade inflammatory disease, few clinical trials have explored the effects of different types of alcoholic beverages on inflammatory markers of atherosclerosis. We have analysed the effects of a fermented drinks (high polyphenolic content) on adhesion molecules, chemokines and other inflammatory biomarkers related to early stages of atherosclerosis, as well as their effect on the adhesion of human monocytes to an endothelial cell line (EA.hy926). Both fermented drinks (ethanol plus polyphenol content) and distillates (ethanol) reduced plasma fibrinogen and interleukin-1 α levels. However, fermented drinks had the additional effect of decreasing high-sensitive C-reactive protein, as well as monocytes and endothelial adhesion molecules. In addition, tumour necrosis factor α - induced adhesion of monocytes to endothelial cells was virtually abolished after fermented drink consumption and was only partially reduced after distillate consumption. This effect may be due to down-regulation of adhesion molecules on the monocytes surface. These results indicate that the fermented drinks have greater benefits than distillates owing to their anti-inflammatory effects, namely decreased serum concentration of high-sensitive C-reactive protein and expression of adhesion molecules related to early stages of atherosclerosis.

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Professor Ascensión Marcos is President of the Spanish Nutrition Society and Research Professor, Head of the Immunonutrition Group at the Department of Metabolism and Nutrition at the Institute of Frío, the High Council of Scientific Research (Consejo Superior de Investigaciones Científicas - CSIC) in Madrid and Guest Lecturer at the Buenos Aires University. She was formerly Head of the Institute of Nutrition and Food Technology at CISC and the Spanish Representative of the Spanish Agency for Food Safety at the European Council in the Food Safety and Health area. She was also Spanish representative of Key Action 1 (Food, Nutrition and Health). She is a member of the Expert Committee on the Strategy on Obesity, Nutrition and Physical Activity and a member of

numerous other high level Scientific Advisory groups. Her main scientific interest is Immunonutrition.

Extracts from 'Moderate beer consumption and the immune system'

'Ethanol abuse has been associated with an increased incidence and severity of infections in human beings and in experimental animals, which have been attributed to the immunosuppression induced by ethanol consumption [1]. Hormones such as GH, PRL and other growth factors are related in the development of the immune system [2]. Chronic ethanol consumption produces hypogonadism, with associated changes in several hormone levels. These changes may be influenced by variations in alcohol quantity, time exposure and type of beverage [3]. On the contrary, moderate alcohol consumption has been shown to induce benefits on the immune system [4]. Furthermore, moderate beer consumption could have an immunomodulatory effect on the inflammatory events involved in cardio vascular disease (CVD), contributing to the protective effect associated with alcohol consumption due partially to its impact on anti-inflammatory cytokines [5,6,7]. Recently we have studied the modulation effects of moderate beer consumption on the immunocompetence of healthy adults, and on the endocrine-immune system of experimental animals.

This research indicated that moderate beer consumption produced an immunomodulation effect in a healthy adult Spanish population which appeared to be more relevant in women than in men. This outcome could mean that healthy adults whose beer consumption is moderate are less prone to get infections. On the other hand, cytokines seem to play an important role as protective agents of cardiovascular pathologies in healthy adults who consume moderate amounts of alcohol. This is evidenced by an increase in the concentration of anti-inflammatory cytokines and a steady concentration of pro-inflammatory cytokines both in men and women after moderate alcohol consumption. The results if the studies in animals were not conclusive. Further research is needed to determine which ingredients in beer are responsible for the documented healthy benefits in humans.'

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Professor Manfred Walzl Md, Graz University, (Austria)

Professor, Dr. Manfred Walzl's main areas of interest are scientific research on the prevention and development of arteriosclerosis, sleep medicine, magnetic field treatment and public health. Professor Walzl is a Fellow of the American College of Angiology, a Fellow of the Royal Society of Medicine in London, a Member of the Permanent Health Conference and a Member of the Health Council of the State of Styria in Austria.

Extracts from 'Cognitive function, Alzheimers' disease and moderate alcohol consumption'

'The past years have seen a rush of new research being published on alcohol and health, the most important referring to the elderly. Epidemiological research shows that moderate alcohol consumption lowers the risk for ischemic stroke as well as dementia, including Alzheimer's disease. In sum, apparently some alcohol can make the brain work better. Different scientific papers have found that those who even drink only two glasses of beer (or one glass of wine) have significantly sharper thought processes than teetotallers.

Two examples out of a growing list which stand out: The Nurses Health Study [1] which involved observation of 12,480 women in the USA showed that the moderate drinkers had better cognitive scores than nondrinkers. Similar results were seen in the Rotterdam Study [2], comprising 7,983 individuals. Light-to-moderate drinking (one to three drinks a day) was significantly associated with lower risk of any dementia, including Alzheimer's disease, which decreased by 58 percent and vascular dementia, which decreased by 29 percent.

All these studies provide insight to recommended consumption levels. But which alcoholic beverage should be used? While the inverse association between red-wine consumption and cardiovascular risk is globally recognized as the French paradox, many epidemiological studies have now concluded that beer and red wine are equally beneficial.

Additionally alcohol in moderation may help in the fight against social problems. It has been found that moderate consumers are happier, commit less suicide, have less health complaints, sick leave, hospitalisations, better recovery from illness, are better educated and enjoy higher incomes and richer social life.

Other studies have shown that elderly drinkers reach higher blood alcohol concentrations at lower levels of consumption than younger drinkers which may indicate that recommended levels may be too high. We have recently undertaken a study to compare the effect of beer with an alcohol content of 5.5 per cent and low-alcohol beer, containing 3 per cent on an empty stomach and after a meal. Following food intake, all breath alcohol content (BAC) values were significantly reduced but a greater reduction was seen with the lower alcohol beer.

In conclusion, all reports emphasise the importance of drinking patterns, where by the message of moderation and the balance of accounting for one's own size, weight, sex, genetic susceptibility, life style factors, metabolic rate and age should be seen in pros and cons of drinking. Protective and detrimental levels of alcohol consumption cannot be generalised across the population but instead should be determined by an individual in consultation with her/his health care provider.'

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