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Dr Geoff Lowe

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Dr Bernard Dixon OBE

for

The Portman Group

Dr Bernard Dixon OBE

Dr Bernard Dixon is a consultant in biomedical sciences, European Editor for the American Society for Microbiology and a regular contributor to *Current Biology* and *Lancet Infectious Diseases*. He was for ten years editor of *New Scientist* and before that deputy editor of *World Medicine*. In recent years he has received both the Charter Award of the Institute of Biology and a honorary DSc from the University of Edinburgh in recognition of his contributions to the public discussion of scientific issues. His books include *Health and the Human Body*, *Society and Science*, *Beyond the Magic Bullet*, *Magnificent Microbes* and *Power Unseen – How Microbes Rule the World*.

Dr Geoff Lowe

Dr Geoff Lowe is Honorary Senior Fellow in the Department of Clinical Psychology at the University of Hull. He carried out his early research at the University of Nottingham and has been Visiting Professor at the University of Tennessee. For six years he was an associate editor on *The Psychologist*, for which he continues to write research reviews. Since 1977 he has been a Fellow of The British Psychological Society, and for ten years was a member of the Society's Press Committee. His publications include *Adolescent Drinking and Family Life*.

The Portman Group

The Group's aims are –

- to promote sensible drinking;
- to reduce alcohol-related harm;
- to develop a better understanding of alcohol misuse;
- to promote responsible marketing.

The Portman Group is not a trade association. It is a pan-industry organisation established to achieve the aims listed above.

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The Portman Group publishes *The Quarterly Review of Alcohol Research* in order to provide people interested in the psycho-social and biomedical aspects of alcohol consumption with a regular, easily-digested summary of recent research in the field. We neither select the topics for Dr Geoff Lowe and Dr Bernard Dixon to review, nor do we edit their copy.

The readership covers a great diversity of professions in many countries, including: the Police, MPs, civil servants and other policy makers, the media, the drinks industry, trade associations, academics in the field and associated fields, and health promotion and alcohol advisory professionals.

If you have any comments on the *Review*, would like to see particular papers or different subject areas covered, would like to receive additional copies each quarter, or have colleagues or associates who you feel would benefit from receiving a copy, please let me know.



David Poley
Chief Executive of The Portman Group

Work-family conflicts and drinking

An imbalance in the demands of paid work and family life may well cause conflicts with adverse consequences for health – particularly if alcohol abuse is linked with such conflicts.

Researchers in Finland have recently been investigating possible links between work-family conflicts and drinking behaviours among middle-aged men and women. Work-to-family conflicts imply that job demands disrupt family life, whereas family-to-work conflicts imply that demands of family life disrupt the job.

Eva Roos and her colleagues at the University of Helsinki examined data from two cross-sectional surveys conducted in 2001 and 2002 on 5,271 municipal workers (aged 40 to 60 years). The researchers looked at three different drinking behaviours. Heavy drinking was defined as more than 140g of pure alcohol – about 12 drinks (for men) per week, and more than 105g – about 9 drinks (for women) per week. Binge drinkers were those who consumed 6 or more drinks in a single session at least once a week. Problem drinking was assessed by means of the CAGE questionnaire, which includes items on cutting down on drinking, feeling bad/guilty about drinking, drinking early in the morning, etc.

Work-to-family conflicts were more common (around 80% of respondents) than family-to-work

conflicts (50%). Heavy drinking was reported by 27% of men and 14% of women, and weekly binge drinking by 24% of men and 7% of women. Problem drinking was also more prevalent in men (39%) than in women (17%).

The Helsinki team found that conflicts between paid work and family life were significantly linked (in men and women) with problem drinking. Those reporting strong conflicts were twice as likely to be problem drinkers, compared with those reporting no such conflicts. Even after taking into account other factors such as socio-economic status, age, education and family structure, women with stronger work-to-family conflicts were over 50% more likely to be heavy drinkers. Such women were also around 30% more likely to be binge drinkers. However, no significant links between work-family conflicts and heavy or binge drinking were found among men.

Work-to-family conflict items such as ‘work involving a lot of travel away from home’

had especially strong links with heavy drinking (in women). Personality factors may also be relevant. Although this was a large survey, we need longitudinal, follow-up studies to determine causal links.

As the authors conclude, “a better balance between family life and work outside the home is likely to promote moderate and healthy drinking behaviours.”

Work-family conflicts and drinking behaviours among employed women and men. *Drug and Alcohol Dependence* (2006), **83**, 49–56. Roos, E., Lahelma, E., & Rahkonen, O., University of Helsinki, Finland.

“...women with stronger work-to-family conflicts were over 50% more likely to be heavy drinkers.”

Influences on adolescents' drinking expectations

Adolescents who believe that drinking alcohol has many positive and few negative consequences are likely to start drinking earlier and more frequently than those with more negative expectancies. Many research studies have shown this. Moreover, positive alcohol expectancies (in early adolescence) predict more likely alcohol problems in later adolescence and in adulthood.

So it's important to find out what factors might influence such drinking expectations. A recent American study has shown that peer and parental influences, as well as social bonding factors, are related consistently to adolescents' alcohol expectancies – among both drinkers and non-drinkers.

Researchers led by Steven Martino, of the RAND organization, Pittsburgh, examined how socio-environmental influences predicted the development of alcohol outcome expectancies over a 1-year period from grade 8 (13 to 14 year-olds) to grade 9 (14 to 15 year-olds). They questioned 1,410 students in 19 middle schools in South Dakota. Their Alcohol Expectancy Questionnaire (AEQ) included 27 items, (such as 'feel happy', 'look cool', 'feel less shy', 'act clumsy', 'have trouble thinking', 'get a hangover').

From this, the researchers assessed (i) alcohol *positivity* – the belief that alcohol affects drinkers more positively than negatively, and (ii) the perceived potency of alcohol – a more global belief that alcohol strongly influences feelings, thinking and behaviour (both good and bad). They also asked 8th graders about their exposure to alcohol advertising. Social bonding measures included items about school bonds (e.g. liking school), family bonds (e.g. perceived parental support), religious beliefs, and deviant behaviours (e.g. carrying a hidden weapon).

Those adolescents with greater exposure to pro-drinking peer and adult influences and with weak bonds to conventional social institutions (e.g. school, religion) had more positive beliefs about alcohol. The perceived potency of alcohol was also less in these adolescents.

“...peer and parental influences, as well as social bonding factors, are related consistently to adolescents' alcohol expectancies – among both drinkers and non-drinkers.”

According to the authors, young adolescents may initially have exaggerated perceptions of the power of alcohol to influence feelings and behaviour. “As they become more familiar with the effects of alcohol, either through their own use or the observed use of others, adolescents may learn that the positive and negative effects of alcohol are more limited than they had believed previously. They may also see that the effects of alcohol vary from person to person and often depend on other factors, such as the context in which alcohol is consumed.”

Amount of exposure to alcohol advertising did not influence alcohol outcome expectancies, after taking into account more immediate social influences. “Although advertisements expose adolescents to social models of drinking, young people are likely to

be influenced more strongly by their peers, parents and important adults with whom they have a relationship than by people they do not know and perhaps do not care about.”

One strength of this study is its longitudinal, prospective design (2 assessments – at grade 8 and grade 9), which enables researchers to highlight directional influences. However, we do not yet know if these findings are generalizable to more urban areas with diverse populations.

The authors recommend that attempts to alter adolescents’ beliefs about the positivity and potency of alcohol need to address these socio-environmental influences, particularly peers and parents/adults who drink or approve of doing so.

Socio-environmental influences on adolescents’ alcohol outcome expectancies: a prospective analysis. *Addiction* (2006), **101**, 971–983. Martino, S.C., Collins, R.L., Ellickson, P.L., Schell, T.L., & McCaffrey, D., RAND, Pittsburgh, PA; RAND, Santa Monica, CA, USA.

‘Blind’ drunk after one stiff drink

Sometimes when we are pre-occupied with something else, we fail to take note of unexpected, but important, objects that appear in our visual fields. This ‘inattentional blindness’ may be a crucial factor in many perceptual ‘malfunctions’ – including driving accidents and near-accidents. Now a recent study has shown that just one stiff drink can worsen such inattentional blindness.

Seema Clifasefi, of the University of Washington, and colleagues recruited 47 adults (aged 21 to 35 years) for their alcohol experiment, which incorporated a ‘balanced placebo design’ (BPD). In the BPD, subjects are either told that they are getting an alcoholic drink (A) or that they are getting a placebo (P). Under each of these two conditions, some subjects get to drink alcohol and others have placebo drinks. So in the full 2 x 2 BPD, subjects are randomly assigned to one of the four conditions: AA (told Alcohol/got Alcohol); AP (told Alcohol/got Placebo); PA (told Placebo/got Alcohol); PP (told Placebo/got Placebo).

The bartender prepared drinks in full view of subjects (usually in small groups) in a simulated cocktail lounge bar. Total volume of liquid was determined by drinkers’ weight and sex. Alcohol drinks contained vodka and tonic equivalent to achieving a blood alcohol level (BAL) of 0.04% – half the legal driving limit in the UK and in most states in the USA. Placebo drinks were tonic beverages.

Participants then watched a short video clip of two teams passing a basketball among their respective team members. Their task was to count the number of passes made by one of the teams. During the game, a woman in a gorilla suit runs between the players, beats her chest, and then walks away. [This scenario stems from an earlier, classic research study of 'inattention blindness'].

Overall, regardless of drink condition, only 33% of subjects noticed the gorilla woman.

So two thirds of them had 'inattention blindness'. Crucially, however, alcohol made this worse. When asked afterwards, only 18% of those given vodka said they'd noticed the gorilla, compared with 46% of those given a placebo drink.

The BPD enabled the researchers to conclude that this wasn't a placebo effect – half the subjects given plain tonic water were told they had been given vodka, and yet 42% of them noticed the gorilla woman. By contrast, half the subjects given vodka were told they'd been given plain tonic, and yet only 18% of them noticed the gorilla.

Such perceptual deficits are also consistent with the notion of 'alcohol myopia' – which happens when intoxicated individuals are less able to allocate sufficient attention to cognitive tasks. Related research shows that as people become more intoxicated, they only attend to salient cues,

at the expense of other perceptual information. In this BPD study, alcohol seems to have had a direct effect – a narrowing of attention to one specific aspect of a scene (counting passes), such that other 'unexpected' information in the scene (gorilla) was more likely to be not even noticed.

This finding leads the authors to recommend lowering the legal alcohol driving limit. "Even at only *half* the legal driving limit in the US, our subjects were at a significantly increased risk of failing to notice an unexpected object compared to their sober counterparts."

Blind drunk: the effects of alcohol on inattention blindness. Applied Cognitive Psychology (2006), 20, 697–704. Clifasefi, S.L., Takarangi, M.K.T., & Bergman, J.S., University of Washington, USA; Victoria University of Wellington, New Zealand.

"...as people become more intoxicated, they only attend to salient cues, at the expense of other perceptual information."

Drink-drivers and passengers in USA

One of the major problems on American roadways is drinking and driving, and approximately 40% of all traffic fatalities have been reported as alcohol-related. Regular surveys of the prevalence of such behaviours have significant implications for public health policy and traffic safety management.

So researchers at the National Institute on Alcohol Abuse and Alcoholism (NIAAA), Bethesda have recently collected data from the National Epidemiological Survey on Alcohol and Related Conditions (NESARC). Using a large (n = 43,093), nationally-representative sample of the USA population, they examined the extent of four drinking and driving behaviours. Two were driver-based (i.e. driving while drinking or driving over the legal alcohol limit), and two were passenger-based (i.e. drinking as a passenger or being driven by a drink-driver).

Patricia Chou and her colleagues examined various driver/passenger characteristics with respect to age, sex, race/ethnicity, place of residence, and related socio-demographics. The NESARC survey was conducted during 2001–2002.

Over 11% of respondents (representing around 23 million of American adults) reported engaging in at

least one of the four driver- or passenger-based drinking and driving behaviours. Prevalences of such drinking and driving indicators based on self-reports of passengers were substantially greater than those reported by the drivers.

Overall, 4.5% (representing about 9.4 million adults) reported more than once (during the previous 12 months) driving while drinking. And men were three times more likely than women to do so. Young adults (18–29 year-olds) had the greatest risk (6.8%) of drink-driving, which declined with increasing age. Drink-drive rates were highest among Native Americans, compared with Blacks, Asians and Hispanics.

“Overall, 4.5% (representing about 9.4 million adults) reported more than once (during the previous 12 months) driving while drinking.”

Regarding passenger-based drinking and driving, 6.6% of respondents (representing nearly 14 million adults) reported more than once (during the previous 12 months) travelling with a drink-driver, with men nearly

twice as likely to do so. As with driver-based drink-driving, younger men were more likely (16%) to be passengers with drink-drivers.

The NIAAA study further identified new risk factors of passenger-based drinking, which could well be seriously distracting – especially for younger male drivers. “The rate among young men was so high that roughly one in five 18–29 year-old males reported drinking while riding in an automobile as a passenger.”

The researchers also observed that an overwhelming majority (over 80%) of those who reported risky drinking and driving practices were also binge drinkers (5 or more drinks per session for men and 4 or more drinks for women, on

several occasions). This rate was substantially higher than the rate of 20% observed in the 2001 National Health Interview Survey. The authors are concerned about this close link between binge drinking and drink-driving behaviours. They recommend a comprehensive approach to reduce alcohol-impaired driving and other risky behaviours by curtailing the occurrence of binge drinking.

The prevalence of drinking and driving in the United States, 2001–2002: results from the national epidemiological survey on alcohol and related conditions. *Drug and Alcohol Dependence* (2006), **83**, 137–146. Chou, S.P., Dawson, D.A., Stinson, F.S., Huang, B., Pickering, R.P., Zhou, Y., & Grant, B.F., National Institute on Alcohol Abuse and Alcoholism, Bethesda, MD, USA.

Drinking in small groups

Social contexts undoubtedly affect alcohol use and misuse, and drinking within groups is a common feature of modern social life. Yet most research has focused mainly on individuals. Group settings offer special opportunities to observe interesting effects of alcohol, and two recent studies of small drinking groups suggest that such drinkers are more careful and attentive than individuals who drink alone. These positive findings are contrary to people's stereotypes of 'unruly' drinking groups.

In the first study, psychologists at the University of Pittsburgh, USA, looked at the effects of alcohol on social interaction in small groups. Thomas Kirchner and his colleagues recruited 54 male social drinkers (aged 21 – 35) and assembled them into 3-person groups of strangers.

Alcohol groups received vodka+juice beverages sufficient (when consumed over a 30-min period) to produce a blood-alcohol concentration (BAC) of .067% (legal driving limit in UK and USA is .08%). Placebo groups consumed tonic+juice drinks, but all participants believed they were alcoholic beverages. The researchers video-recorded the social interactions and analyzed the duration and sequence of smiling and speech behaviours.

In the alcohol groups there was more group-level co-ordination of smiling and speech over time. Alcohol not only affected how much participants smiled and spoke, but it also affected when and with whom they smiled and spoke.

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Such concurrent smiling and balanced speech among group members are typically signs of positive interactions. So these findings suggest that alcohol helped the process of group formation.

Meanwhile, psychologists at the University of Kent, England, have been looking at how group processes combine with alcohol consumption to affect risk attraction. Dominic Abrams and his colleagues asked 120 young men, who were alone or in 4-person groups, to indicate (on a 10-point scale) their attraction to various gambling bets involving personal financial risk. Participants consumed either a placebo, or alcohol in amounts equivalent to the UK legal driving limit (.08%).

Usually, individuals behave more riskily after drinking alcohol, but these researchers found that people in groups did not. For individuals, risk attraction was greater (4.01) after alcohol than after placebo (2.85); but in groups the mean ratings were similar in both conditions (3.38 and 3.31, respectively).

Moreover, in alcohol but not placebo conditions, groups made their decisions significantly more slowly than did individuals. Decision time was not linked to the attractiveness of various risks. Alcohol-drinking groups were taking more time to make decisions at the same level of risk as the placebo-drinking groups. The authors suggest that group members attend to each other and promote more systematic processing of the risks presented. In doing so, they may have overcome the tendency of intoxicated individuals to be attracted to risk.

Both these studies show that with moderate social drinking, groups interact more positively and may provide an informal means of mutual regulation and monitoring. This can offset some of the rashness and decreased awareness often observed in intoxicated individuals.

“...with moderate social drinking, groups interact more positively and may provide an informal means of mutual regulation and monitoring.”

Effects of alcohol on group formation among male social drinkers. *Journal of Studies on Alcohol* (2006), **67**, 785–794. Kirchner, T.R., Sayette, M.A., Cohn, J.F., Moreland, R.L., & Levine, J.M., University of Pittsburgh, PA, USA.

“Groupdrink”? The effect of alcohol on risk attraction among groups versus individuals. *Journal of Studies on Alcohol* (2006), **67**, 628–636. Abrams, D., Hothrow, T., Hulbert, L., & Frings, D. University of Kent, Canterbury, England, UK.

Young teenage drinkers and alcohol dependence

Youngsters who start drinking alcohol before age 14 have a much higher risk of developing alcohol dependence, compared with those who start at age 21 or over. This is the main finding of a large American survey analyzed by researchers at the Boston University School of Public Health.

Ralph Hingson and his colleagues accessed data from the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) which questioned a representative sample of more than 43,000 adults aged 18 years and older. Respondents had to remember how old they were when they first started drinking (i.e. more than tastes or sips). Other questions included items related to diagnostic criteria for alcohol dependence (alcoholism), such as withdrawal symptoms, effects on social life or work, unsuccessful attempts to cut down.

Around 4% of the respondents were alcoholics at the time of interview, but over 12% had reported an alcohol dependency problem at some point in their lives.

The researchers found that the earlier the drinking started before the age of 21, the higher the risk, year-by-year, of alcohol dependency later in life. Nearly half (47%) of the respondents who ever experienced alcohol dependence were first diagnosable by age 21, and two thirds by age 25. Furthermore, the earlier the start of drinking, the stronger the subsequent link with chronic relapsing dependence (e.g. multiple episodes, past-year dependence, longer episodes, and wider range of symptoms).

There are now well-established links between early onset of drinking and diagnosis of alcoholism at some point in lifetime. But it may be that an underlying predisposition for risky behaviour is the crucial factor – at least in some young people.

“There are now well-established links between early onset of drinking and diagnosis of alcoholism at some point in lifetime.”

The researchers took into account some possible risk factors, such as family history of alcoholism, childhood anti-social behaviour and depression, and smoking and drug use. After controlling for these risk factors, together

with age, education and demographics, early-starting drinkers still had a substantially increased risk of alcohol dependence (78% more likely), compared with those who started drinking at 21 years or older.

The authors note the beneficial effects (in terms of reducing alcohol-related deaths and accidents) of raising the legal drinking age to 21 years. “Whether such interventions can delay the onset of alcohol use among adolescents and, in turn, reduce the development of alcohol dependence during adolescence and the adults years and its wide range of adverse consequences is a research question of vast medical, social, and public health importance.”

Age at drinking onset and alcohol dependence.
Archives of Pediatric and Adolescent Medicine
(2006), **160**, 739–746. Hingson, R.W., Heeren, T.,
& Winter, M.R., Youth Alcohol Prevention Center,
Boston University School of Public Health, Boston,
Mass., USA.

Bingers recover more slowly from injury

Heavy drinkers are not only exceptionally likely to hurt themselves in accidents, they also face several different types of risk in terms of injury and its subsequent effects. For example, two years ago a report from Northern Ireland (*Review*, Volume 12, Number 3, Autumn 2004) showed that people attending a hospital accident and emergency department after a fall were more likely to have sustained trauma to the head if they had recently consumed alcohol, as compared with those who had not been drinking. They were correspondingly less likely to have damaged their arms or legs. Now a survey in Los Angeles reveals that road accident victims with a high blood alcohol level are at much greater risk of complications following the incident than those with low or no blood alcohol. These medical problems mean that they also need to stay longer in hospital.

The US investigators began their work in part because of a puzzling contradiction in the results of previous research. While many laboratory studies have indicated that intoxication is likely to prolong recovery from damage to the body's tissues, a few have suggested that alcohol can have a protective effect against the effects of trauma. The aim of the

new investigation was to clarify the matter not by means of experiments at the laboratory bench but through the collation of evidence gathered in the outside world.

For a whole year, researchers studied all road accident victims aged 10 years or more who were ferried to hospital by the Los Angeles County Department of Health Services following a collision with an automobile. All of the patients (who included cyclists as well as pedestrians) had their blood alcohol concentrations determined. Their age, gender, ethnicity and type and severity of injury were also noted. In every case too, the investigators recorded the subsequent effects of the trauma, including complications and deaths.

Of the 1042 patients, 606 (58%) were categorised as alcohol negative (based on a blood alcohol level of at most 50 mg per 100ml). Another 84 (8%) had low alcohol levels ranging from 50 to less than 80 mg/100 ml (the UK limit for driving) while 352 (34%) had high levels (80 mg/100 ml or more). High levels were commoner among males than females, and commoner in the age group 19–64 as compared to either young or older individuals.

When the investigators studied the three groups, they found that both the overall complication rate and the length of hospital stay were significantly greater in the individuals with high blood alcohol levels than in those in the alcohol negative group. The two sets of consequences were linked since many of the complications developing while the patients were in hospital appeared to be directly attributable to alcohol. The death rate was similar in all three groups. However, there was no significant association between blood alcohol

“The overall complication rate and the length of hospital stay were significantly greater in the individuals with high blood alcohol levels.”

concentrations and either the pattern of injury (whether affecting the head, chest or abdomen) or its severity in terms of the area of the body damaged.

The authors of the paper reporting these findings draw particular attention to their implications for the financial costs of medical treatment, whether in a free enterprise system or within a nationalised health service. “Because hospital stay is typically used as a measure of resource use, we feel confident that alcohol independently increases the costs of care,” they write. “Our conclusions can be used for arguments in favour of alcohol intervention programs because we show that the presence of alcohol preferentially consumes more finite health care resources for the same result.”

Pedestrian Injuries: The Association of Alcohol Consumption with the Type and Severity of Injuries and Outcomes, *Journal of the American College of Surgeons* (2006), **202**, 919–927, Plurad D., Demetriades D., Gruzinski G., Preston C., Chan L., Gaspard D., Margulies D., Gill Cryer H., Department of Surgery, University of Southern California; Los Angeles County Department of Health Services; Department of Surgery, Huntington Memorial Hospital; Department of Surgery, Cedars Sinai Medical Center; and Department of Surgery, University of California Los Angeles, CA, USA.

Risks of stroke in drinkers

Observations on more than 37,000 women over an entire decade have strengthened the evidence that alcohol consumed in moderation diminishes the likelihood of the commonest type of stroke (ischaemic stroke, caused by a blood clot in the brain). As well as being unusually large, and thus highly reliable in a statistical sense, the study highlights the importance of a combination of behaviours, including weight control and abstinence from smoking in the avoidance of ischaemic stroke.

Previous work has demonstrated the importance of many individual aspects of lifestyle in lowering the risk of this condition. Very few researchers, however, have tried to determine the effects of these factors together. The subjects for the new investigation were all US health professionals, enrolled in a trial primarily designed to determine the possible value of regular low-dose aspirin in preventing cardiovascular disease. The organisers, however, took advantage of the trial to investigate the causation of stroke as well.

All of the women were aged 45 or older at the commencement of the work, when none of them had a history of cardiovascular disease, cancer or any other major illness. They completed questionnaires regarding their lifestyle at the outset, and this information was updated twice during the first year and then yearly. Alcohol consumption was recorded as numbers of drinks per week – none, one to three, and up to 10.5 drinks or more. Other questions covered matters

such as smoking, physical activity and body mass index (weight in kilograms divided by height in metres squared).

Because they wanted to find out about the combined influence of different aspects of lifestyle, rather than individual behaviours, the researchers recorded each factor as a score of nought to one “health index points”. The higher the number of points, the healthier the behaviour. They then aggregated the points together into a total score.

Healthy behaviour was defined as consuming between four and 10.5 drinks per week, never smoking, exercising four or more times weekly, having a body mass index less than 22 and taking a good diet. This included, for example, a large content of cereal fibre and a high ratio of polyunsaturated to saturated fats. Based on previous evidence about lower cardiovascular risks in light drinkers than teetotallers, women who rarely or never drank alcohol were given low health index points for this aspect of lifestyle.

During the 10 years of follow-up, there were 450 strokes (356 of them ischaemic) among the 37,636 women. The strokes were reported initially by the women themselves, but the diagnoses were then confirmed from clinical records.

Analysis of these findings in relation to the women’s total scores showed that those with 17–20 health index points had a substantially lower likelihood of suffering an ischaemic stroke than those with 0–4 health index points. However, there was no such benefit in the case of haemorrhagic stroke (caused by bleeding in the brain). The benefit of moderate drinking was emphasised by the fact

that the outcome remained the same when, instead of assigning low health points to virtual abstainers, the researchers assigned them to the women with the very highest level of consumption.

The US findings augment our understanding of the protective effect of moderate drinking against ischaemic stroke (Review, Volume 11, Number 2, Summer 2003 and Volume 11, Number 3, Autumn 2003). The authors believe that further work is still required to clarify the relationship between

various aspects of diet and the occurrence of different subtypes of stroke.

“Healthy behaviour was defined as consuming between four and 10.5 drinks per week.”

Healthy Lifestyle and the Risk of Stroke in Women, *Archives of Internal Medicine* (2006), **166**, 1403–1409, Kurth T., Moore S.C., Gaziano J.M., Kase

C.S., Stampfer M.J., Berger K., Buring J.E., Divisions of Preventive Medicine and Aging; Channing Laboratories; Department of Medicine, Brigham and Women’s Hospital, Harvard Medical School; Department of Epidemiology, Harvard School of Public Health; Department of Ambulatory Care and Prevention, Harvard Medical School; Massachusetts Veterans Epidemiology Research and Information Center, Boston Veterans Affairs Healthcare System; Department of Neurology, Boston University School of Medicine, Boston, MS; Department of Epidemiology, Yale School of Public Health, New Haven, CN, USA; and Institute of Epidemiology and Social Medicine, University of Muenster, Muenster, Germany.

Alcohol and diabetes care

A clinical team concerned with diabetes has expressed concern that people with this condition may, if they are also drinkers, overlook the daily self-care that is so important for their wellbeing. While this complements a similar warning about a year ago from another group of medical authors (*Review*, Volume 14, Number 1, Spring 2006), the evidence on which it is based is even more serious. The earlier report focused on heavy consumers of alcohol as an at-risk group, but the latest publication points to similar problems even among light drinkers.

The issue has come to prominence not only because of growing concern in many countries over the medical and social repercussions of drinking, but also because diabetes is an increasing health problem worldwide, especially where it parallels rising obesity. For individual patients, whether they have type 1 (early onset) diabetes requiring insulin injections, or the type 2 disease associated with overweight, self-care is crucial. As well as monitoring their blood glucose levels, and using insulin or other medication on schedule, they need to follow a diet, take regular exercise – and keep appointments for their periodic check-ups.

While each of these behaviours could clearly be compromised by excessive drinking, the authors of the new report wanted to know whether there was any danger for individuals using alcohol in a

more responsible way. The study population consisted of over 65,000 adults with diabetes who received care through a particular medical insurance system. Electronic records provided some of the information required by the researchers, the remainder being obtained directly from patients. This included estimates of the number of days they had consumed alcohol over the past year and the average quantity taken per occasion. The investigators used these data to determine single figures for each person's average daily intake.

The prevalence of drinking in the study group was significantly lower than in the general US population (50.8% as compared with 61.9%). While the proportions of lifetime abstainers were virtually identical, the diabetic group contained 28% of former drinkers, as compared with 15% in the general population.

“...a tendency to overlook self-care measures was apparent at a level as low as one drink per day.”

A comparison of adherence to self-care guidelines with drinking habits showed that their degree of neglect rose in line with alcohol consumption. But, in contrast to last year's report, a tendency to overlook self-care measures was apparent at a level as low as one drink per day. The greatest degree of compliance (except for the avoidance of smoking) was seen in former drinkers.

“Further study is warranted to assess whether physician advice to decrease alcohol consumption among heavy drinkers is associated with improved adherence to self-care recommendations and reduced risk of diabetes complications,” the authors write. They also point out that, in light of evidence that low to moderate alcohol intake may have cardiovascular benefits for patients with diabetes,

research is required into the trade-offs between those benefits and the risk that such individuals will neglect their self-care. Clearly, this is an issue which doctors already need to bear in mind in counselling patients.

Alcohol Consumption is Inversely Associated with Adherence to Diabetes Self-Care Behaviours, Ahmed, A.T., Karter, A.J., Liu, J., *Diabetic Medicine* (2006), **23**, 795–802, Kaiser Permanente Division of Research, Oakland, CA, USA.

Another warning for pregnant women

A group of clinicians based in California has called upon Britain's Royal College of Obstetricians and Gynaecologists (RCOG) to re-evaluate its position regarding the consumption of alcohol during pregnancy. The group argues that the RCOG's 2006 statement, while observing that the safest approach may be for pregnant women to avoid alcohol altogether, still concludes that an intake of up to four units a week is harmless. Similarly, although the statement includes a conversion table for typical drink sizes and brands, it "could easily lead to underestimation by a pregnant woman of the number of units of alcohol actually being consumed on a given occasion".

Bingeing during pregnancy is, of course, already a serious concern. In addition to foetal alcohol syndrome, premature birth and heightened risks of cleft lip/palate and of abortion during the first trimester (*Review*, Volume 10, Number 3, Autumn 2002), recent evidence shows that bingeing is linked with increased dangers of behavioural and mental problems in offspring around the age of seven (*Review*, Volume 13, Number 1, Spring 2005).

Citing data from the Office for National Statistics indicating that 27% of women in the 16–24 age group admit bingeing at least once a week, the authors point out that some attendant dangers can easily be overlooked. "Although most women in this age group are not currently pregnant, it is

important to note that the majority of pregnancies are unplanned,” they write. “Therefore, women often continue their usual pattern of alcohol consumption into the early weeks of an unplanned pregnancy, a period during which the foetus is particularly vulnerable to alcohol exposure.”

The authors commend the RCOG in calling for long-term prospective studies to ascertain beyond question whether there is a level of alcohol that is safe to drink during pregnancy. But they also observe, in the meantime, that “lack of evidence does not equal evidence of safety”. They point out that, though there are no extensive data showing that an intake of below four [UK eight gram] units a week is likely to result in foetal harm, “it is also true that there is no established threshold dose or upper limit of alcohol consumption that is known to be safe”. Yet, in addition to the RCOG advice, the UK government’s advice, while recommending that women should take care over their drinking while pregnant, is that they should limit their intake to no more than one or two units, once or twice a week.

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The simplest and most explicit advice regarding drinking during pregnancy is in the USA. There the Surgeon General has stated that the safest course is abstinence throughout. The authors point out that this same conclusion has been reached by seven of nine countries that have a stated policy about alcohol exposure during pregnancy. “Only the UK, Australia and New Zealand recommend otherwise.”

Alcohol Use in Pregnancy: Inadequate Recommendations for an Increasing Problem, *BJOG An International Journal of Obstetrics and Gynaecology* (2006), 113, 967–968, Jones K., Chambers C.D., Hill L.L., Hull A.D., Riley E.P., Division of Dysmorphology and Teratology, Department of Pediatrics; Department of Family and Preventive Medicine; Department of Reproductive Medicine, University of California, San Diego, La Jolla, CA; and Department of Psychology, San Diego State University, San Diego, CA, USA.

Drinking and non-Hodgkin's lymphoma

A further piece has been put in place to fill out our understanding of lymphomas (Hodgkin's disease and other malignant tumours of the lymph nodes). Following an investigation in Germany which incriminated smoking as a cause, and suggested that alcohol could be protective (Review, Volume 14, Number 3, Autumn 2006), more extensive work has been conducted in Germany plus five other European countries into one specific form of the disease. The results show no link between smoking and the type of lymphoma known as non-Hodgkin's lymphoma (NHL). However, alcohol afforded some protection against this condition in men, and in both men and women in non-Mediterranean countries.

The European team, based in France, Germany, Ireland, Italy, Spain and the Czech Republic, set up the project because the incidence of NHL has been rising rapidly in recent decades, at least in countries where there are dependable statistics. The cause is unknown. Even those viruses which have been identified as risk factors provide only very partial explanations for the disease.

Previous studies launched to probe the possible involvement of alcohol and tobacco smoke have yielded unsatisfactory findings, largely because they

were based on unduly small groups of patients. The new research, by contrast, embraced considerable numbers of individuals. It was a case-control study in which the investigators studied 1742 cases of NHL in six countries, and compared them with 2,465 healthy control subjects to see whether they differed in any ways that might account for the occurrence of the lymphoma.

In each country, the researchers invited patients with confirmed NHL, as well as control individuals, to participate in the work. The methods of enrolling controls differed from country to country, but all were recruited in such a way (for example, being matched for age and sex) that they represented a statistically valid sample with whom the lymphoma patients could be validly compared.

Locally trained interviewers used a uniform questionnaire (translated into the language of each country) to gather information from both patients and controls about a wide range of factors that might be relevant to the development of NHL. These included smoking and drinking habits, sociodemographic characteristics, exposure to ultraviolet light and occupational, reproductive, family and medical histories. Alcohol intake was recorded in several ways, including lifetime consumption and the intake of different types of alcoholic beverage.

“...male drinkers were significantly less likely to develop NHL than male teetotallers.”

When the researchers computed the risk of NHL in relation to the individuals' various characteristics, they found that neither smoking nor drinking had any effect on the overall risk of the disease. However, when they broke their subjects down into various subgroups, they discerned two things. Firstly, male drinkers were significantly less likely to develop NHL than male teetotallers. Secondly, both men

and women from the non-Mediterranean countries were significantly less likely than abstainers in those countries to develop the condition.

Coming from a large survey based on six geographically disparate regions, these findings are thought to be particularly robust and reliable. It now seems that apparent contradictions in previous published claims about the causation of NHL reflect differing characteristics of the populations studied. The authors of the new report do, however, draw attention to one limitation to their work. Though they compared large numbers of cases and controls, 12% and 31% respectively of those originally approached declined to take part in the study. If their drinking habits differed significantly from those of the people who did participate, then this could have led to an under- or over-estimate of the effect of alcohol on the risk of NHL.

Tobacco Smoking, Alcohol Drinking and Non-Hodgkin's Lymphoma: A European Multicenter Case-Control Study (EpiLymph), *International Journal of Cancer* (2006), 119, 901–908, Besson H., Brennan P., Becker N., Nieters A., De Sanjosé S., Font R., Maynadié M., Foretova L., Cocco P.L., Staines A., Vornanen M., Boffetta P., International Agency for Research on Cancer, Lyon; Unit of Biological Haematology, Dijon University Hospital, Dijon, France; Division of Clinical Epidemiology, German Cancer Research Centre, Heidelberg, Germany; Department of Epidemiology and Cancer Registry, Catalan Oncology Institute, Barcelona, Spain; Department of Cancer Epidemiology and Genetics, Masaryk Memorial Cancer Institute, Brno, Czech Republic; Institute of Occupational Medicine, University of Cagliari, Cagliari, Italy; Department of Public Health, University College Dublin, Dublin, Ireland; and Department of Pathology, Tampere University Hospital, Tampere, Finland.

An allergy problem for heavy drinkers?

There's news from Denmark about a possible link between alcohol and the type of allergy typified by hay fever. Although the evidence is limited in scope, and statistically significant only in heavier drinkers, it could help to explain the perplexing rise in allergic conditions that has occurred in many countries during recent years.

Most research into increases in hay fever and asthma has centred on the environment, since allergens such as grass and tree pollens undoubtedly trigger these conditions. Household allergens, including cat fur, dog hair and house mites, also provoke allergies in some persons. However, neither these nor other allergens in outdoor or indoor air seem capable of accounting for the rapid rises observed in the numbers of allergy sufferers.

For this reason, changes in lifestyle have also attracted scientific attention. Could decreasing physical activity, for example, or increasing obesity, be linked somehow with the increasing prevalence of allergies? Heavy drinking has come under suspicion too, since it is known to damage the immune system (*Review*, Volume 12, Number 2, Summer 2004). If alcohol in high concentrations can impair normal immunity, which protects us against infectious microbes, could it also exacerbate the misbehaviour of the immune system that is the basis of allergy?

The Danish investigators cite the dramatic growth of alcohol consumption in their own country as a particular reason for taking this idea seriously. So they turned to the World Health Organization's MONICA project (chiefly focused on cardio-vascular disease) and invited participants who were based in Copenhagen County to take part in the allergy research. Totalling 3317 persons, the sample consisted of both men and women in four age groups: 30, 40, 50 and 60.

In addition to receiving a comprehensive medical examination, all participants answered questions regarding their drinking habits and were tested to determine whether they had become sensitised to various allergens commonly found in the air. Alcohol intake was recorded in terms of what the subjects said was their average weekly consumption of beer, wine and spirits during the previous year. Using these answers, the investigators calculated total weekly intake figures.

They evaluated participants' sensitisation to airborne allergens by taking blood samples and separating the serum. They then used a test-tube method to look for antibodies in the serum whose presence would indicate sensitisation to 19 commonly encountered allergens. These included proteins from four different trees, two grasses, three moulds, four weeds, three animal danders (from the cat, dog and horse) and one insect.

The investigators found that, irrespective of the type of alcoholic beverage, the occurrence of sensitisation did reflect the subjects' intake of alcohol. However, when they adjusted their data to allow for the

influence of various other factors that could have been responsible for the observed result, they discovered that the association was statistically significant only in individuals who consumed 15–21 drinks per week. The fact that the result was equally significant in subjects who preferred beer, wine or spirits suggests that alcohol itself was responsible.

It is possible that some as-yet unknown factor other than alcohol could account for the findings – which, as in all studies of this sort, also rest upon the accuracy of participants' declarations concerning their drinking levels. On the other hand, the Danish results have been echoed by two independent projects carried out in Spain, suggesting that the observations are valid.

As to their interpretation, further work is still required, not least to find out whether alcohol does indeed cause allergen sensitisation (and thus various allergies), or whether some other factor is responsible not only for sensitisation but also for drinking behaviour. The Danish authors speculate that both might be determined by variations in the genes responsible for the breakdown of alcohol in the body.

[Association Between Alcohol Consumption and Aeroallergen Sensitization in Danish Adults, *Clinical and Experimental Allergy* \(2006\), 36, 714–721, Linneberg A., Hertzum I., Husemoen L.L.N., Johansen N., Jørgensen, Research Centre for Prevention and Health, Glostrup University Hospital, Glostrup; and In Vitro Diagnostics Business Unit, ALK-Abelló A/S, Hoersholm, Denmark.](#)

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7-10 Chandos Street, London W1G 9DQ
Tel: 020 7907 3700 Fax: 020 7907 3710
www.portmangroup.org.uk