

## Comments on “Alcohol and Food: Making the Public Health Connections” published by Centre for Public Health, Liverpool JMU, January, 2010.

*‘UK policy must address the links between alcohol and food in order to maximise the effectiveness of public health responses and enable people to make better informed choices about eating and drinking. We urgently need to move away from seeing alcohol as a means to achieve inebriation to regarding it as an accompaniment to food with both being consumed in moderation. Patterns of consumption of food and drink should be considered as part of a healthy diet and lifestyle. Yet today, in Europe alone, there are marked differences in the extent to which alcohol and food are viewed as separate issues or considered together as an integral part of diet and lifestyle. The ‘Mediterranean’ approach to eating and drinking (which is caricatured as moderate alcohol consumption; low consumption of meat and meat products; and high consumption of vegetables, fruits, nuts and olive oil) has been seen as an ideal for a healthier society [6,7] and is associated with reduced mortality. [8] Consumption of non-processed Mediterranean foods including olive oil, fish, fresh fruit and vegetables has contributed to lower levels of chronic illnesses such as heart disease among older populations. [9,10] Alcohol may also play a role.’*

Extract from the Introduction to the paper by Dr Ruth Hussey, OBE, Regional Director of Public Health / Senior Medical Director for NHS North West and DH North West.

A paper, which appears on the surface to tackle the important subject of considering alcohol as part of a balanced Mediterranean style lifestyle and considers the importance of context (i.e. how you drink, with food or with friends) as well as pattern of drinking (speed, alcohol level how much and how often) has provoked disbelief in the Medical community in its summary on moderate alcohol consumption and its effects on lifestyle.

Some important comments are listed below.

### **Comments from Professor Alan Crozier Professor of Plant Biochemistry and Human Nutrition Faculty of Medicine, University of Glasgow**

‘It is unfortunate that the well established health benefits of moderate red wine consumption are brushed aside in such a cavalier manner in two short paragraphs on page seven of this report.

There is reference [41] to one Spanish paper that did not find a link between red wine consumption low cardiovascular disease while a plethora of other research that reaches the opposite conclusion is ignored.

The reference to resveratrol citing Roger Corder’s work is completely misleading. It come across as follows: “resveratrol in wine is too low to affect cardiovascular health becomes therefore red wine is unlikely to impact on cardiovascular health” Corder reached no such conclusion. What is written in his book is that the protective effects of red wine, despite what is written in the popular press with great regularity, cannot be attributed to resveratrol because, without exception, it is present in extremely small quantities that will not elicit an effect. But red wine contains many other phenolic compounds in more than sufficient quantities to contribute to the health benefits of the beverage. Catechins and procyanidins, that are also found in cocoa, which has also been shown to have favourable impacts on health, come into this category. Roger Corder’s own research findings, that were published in the journal Nature, has shown that consumption of procyanidin-rich red wines made from Tannat grapes in south west France is associated with increased male longevity (Corder, R., Mullen, W., Khan, N.Q., Marks, S.C., Wood, E.G., Carrier, M.J., Crozier, A., (2006). Red wine procyanidins and vascular health. Nature 444, 566)’

### **Comments from Professor Fulvio Ursini, Department of Biological Chemistry, School of Medicine University of Padova, Italy**

‘The report of the Liverpool Centre for Public Health addresses the issue of negative effect of alcohol on human health, mainly bringing to the focus the notion that alcoholic beverages are highly calorific.

The major criticism about the report is the mixing up of epidemiological data with biological evidences just to support what appears an a priori judgment about the use of alcoholic beverages; overlooking dose effect relationships while considering just the status of drinker (abuser) vs the status of non-drinker, thus minimizing the relevance of optimal intake or moderation.

Moreover two quite different concepts about abuse are overlapped throughout the text: the effects of chronic and acute abuse. Needless to say that they are both negative, but the mechanisms of damage are different and the social and cultural approach to prevention of inappropriate behaviour is different.

In nutrition and toxicology the dose effect relationship is crucial for drawing conclusions. Moreover, these relationships are most frequently not linear and "paradoxical" effects are rather common. This descends from hormetic effects, where small doses of compounds frankly toxic at high doses are protective when assumed in moderation. The J shaped curves of dose effect have been described in pharmacology and toxicology long before the discovery of "paradoxical effects" of alcoholic beverages that indeed are not so "paradoxical".

In conclusion, the most relevant issue today, about this aspect is educating the population to use alcoholic beverages in moderation, balancing the intake with other foods.

Remarkably, obesity is also a major risk factor for cancer'.

**Comments by: Professor R Curtis Ellison MD  
Professor of Medicine and Public Health at Boston  
University School of Medicine,**

'It is unfortunate that where references to legitimate scientific studies are given in this paper, the results of such studies are often misquoted. Further, the paper includes many instances of anecdotal "evidence" for an effect, when sound scientific evidence on the topic (that often contradicts the anecdotal associations reported) is ignored.

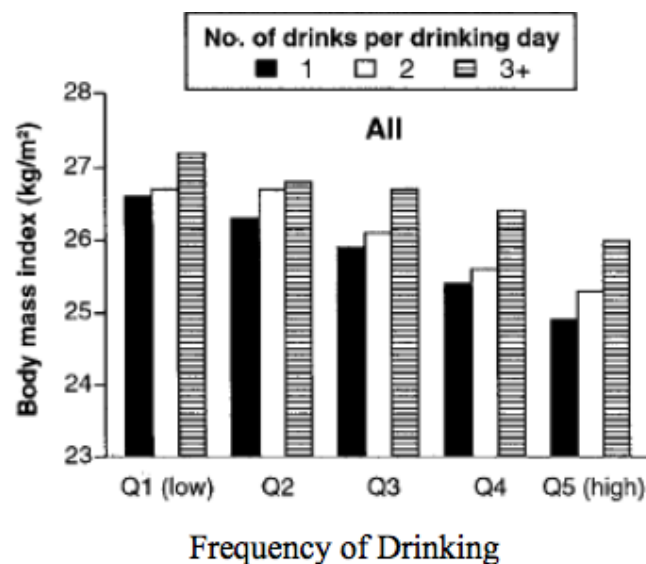
The article is too filled with biased and unscientific statements to justify focusing on every assertion. We quote below some selected sections from the article used by the authors to make certain points about the association of alcohol consumption to weight and cardiovascular disease, and provide our comments'.

#### Extract from the report

##### *Alcohol and weight*

*'There are strong associations between increased alcohol consumption and elevated body weight, particularly in men. Research in Spain (n=15,630) showed a linear relationship between Body Mass Index (BMI) and alcohol for males, whereby*

*increasing alcohol consumption was associated with obesity (p<0.001; the criteria for obesity were not specified).[41] In fact, alcohol consumption can contribute to weight gain directly through its involvement in overall energy intake (see Section 2.2). The links between alcohol and weight are highlighted below:*



#### Comment

'The authors neglect to comment that the paper from Spain (Ref 41, Arriola et al, Heart 2010:96:124-130) shows that among women, those in all categories of alcohol intake had lower weight and a lower risk of obesity than was found for women who were non-drinkers. Among men, higher weight and BMI were primarily among the very heavy drinkers (especially those consuming > 90 grams of alcohol/day). The paper concludes, "Alcohol intake in men aged 29-69 years was associated with a more than 30% lower CHD (coronary heart disease) incidence. This study is based on a large prospective cohort study and is free of the abstainer error."

#### Extract from the report

##### Levels of alcohol consumption:

*'High levels and more intense patterns of drinking are associated with indicators of obesity. [49- 51]ix For example, in a study of 23 pairs of identical twins (who were discordant for obesity), the obese twin was more likely to report over-consuming items such as alcohol compared with their lean twin (95.7% compared with 17.4% respectively; p<0.05).[50] However, some studies suggest moderate alcohol consumption can be associated with weight maintenance or even*

weight loss. [51,52] For example, daily consumption of less than one drink per drinking day was inversely associated with obesity in New York (USA; n=2,343), particularly for women and wine consumers (who were more likely to be women). [51] However, confounding factors may be present.

### Comment

'The papers quoted deal more with "overconsumption" than with moderate drinking. The article quoted as reference 51 (Dorn et al, J Nutrition 2003;133:2655-2662) concludes that "When frequency and intensity were considered together, daily drinkers of <1 drink/drinking day had the smallest mean abdominal height measures with the largest measures in less than weekly drinkers who consumed 4 or more drinks/drinking day."

### Extract from the report

2.5 Patterns of combined consumption: Consuming food before drinking alcohol can slow the absorption of alcohol into the bloodstream and subsequent levels of intoxication (see Box 2). Conversely, alcohol consumption (at 24g or three units) has been linked to higher levels of food consumption, with hunger potentially being increased up to six hours after drinking compared with baseline (although study sizes are small). [69] Low levels of alcohol consumption (for instance, 8g or one unit) do not appear to promote increased food intake, [69] supporting findings that moderate drinking (as part of an overall healthy lifestyle) may not necessarily result in weight gain. However, a cross-sectional national study in the USA (n=165,057) has shown that higher levels of consumption are associated with elevated BMI. Here, those who consumed an average of one drink xvi per drinking day had a mean BMI of 25.8 (95% confidence interval (95% CI): 25.7- 25.9) compared with those who drank four or more who had a mean BMI of 26.8 (95% CI: 26.7-27.0).[70]

### Comment

The authors have completely ignored the main findings of the study referred to as ref 70 (Breslow et al, 2005, Am J Epidemiol 161:368-376). The key figure from that study is shown below:

### Extract from the report

It shows that more frequent alcohol consumption was associated with lower BMI (weight), while greater amounts per day increased BMI. Infact, the rarest

drinkers (1-2 drinks/year for women and < 1 drink/month for men, quintile 1) had the highest weights. In comparison with subjects drinking the least, those who drinking several days/week to daily had the lowest body mass index. At each level, the BMI was lowest in those reporting 1 drink/day in comparison with those drinking more. The authors of this paper conclude: "In all respondents combined, persons who consumed the smallest quantity the most frequently were leanest, and those who consumed the greatest quantity the least frequently were heaviest. Alcohol may contribute to excess body weight among certain drinkers."

### Cardiovascular disease

In France, the incidence of cardiovascular disease has historically been considerably lower than elsewhere even though their diet is not lower in saturated fat or cholesterol. [74] Whilst the cause is uncertain, one protective factor mooted is higher consumption of red wine. [75] Regardless, the much celebrated relationship between alcohol consumption and lower cardiovascular disease is complicated by a variety of factors, (see Section 2.2.1), including dietary factors:

### Diet

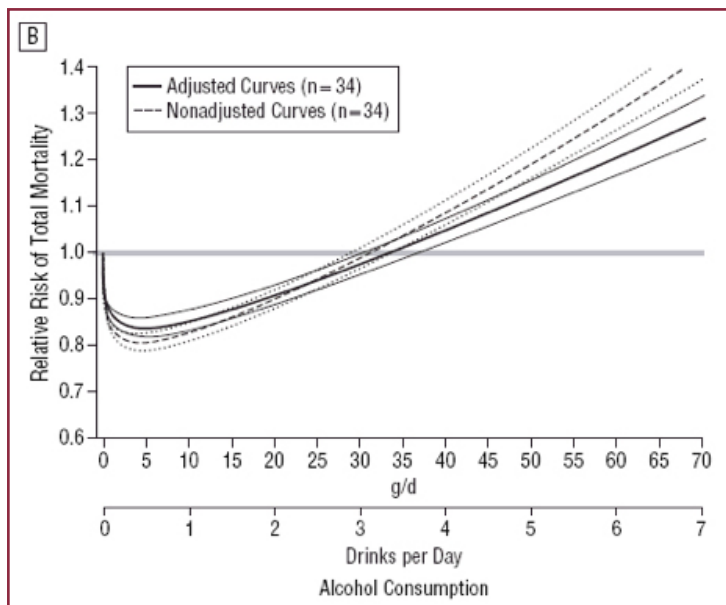
Wine drinkers tend to eat healthier diets, exercise more and occupy relatively affluent socio-economic groups compared with non-drinkers and other drinkers. [77, 78]

Research in New York (USA; n=3,756, aged 35-79 years) showed that wine drinkers may consume higher quantities of fruit and vegetables than other drinkers. [78] Importantly, as studies have better controlled for the differences between drinkers and non-drinkers, the protective effects of moderate alcohol consumption have diminished. [44]

### Comment

'The authors' comment on reference 44 (Di Castelnuovo et al, Archives Int Med 2006;166:2437-2445) misses the main point of this paper. A figure illustrating the effects of controlling for differences between drinkers and non-drinkers is shown in Fig 2.

Di Castelnuovo et al conclude that "Low levels of alcohol intake (1-2 drinks per day for women and 2-4 drinks per day for men) are inversely associated with total mortality in both men and women. Our findings, while confirming the hazards of excess drinking,



indicate potential windows of alcohol intake that may confer a net beneficial effect of moderate drinking, at least in terms of survival.”

**Comments by Roger Corder, PhD, MRPharmS, Professor of Experimental Therapeutics, Queen Mary University of London, William Harvey Research Institute, Barts & the London School of Medicine & Dentistry.**

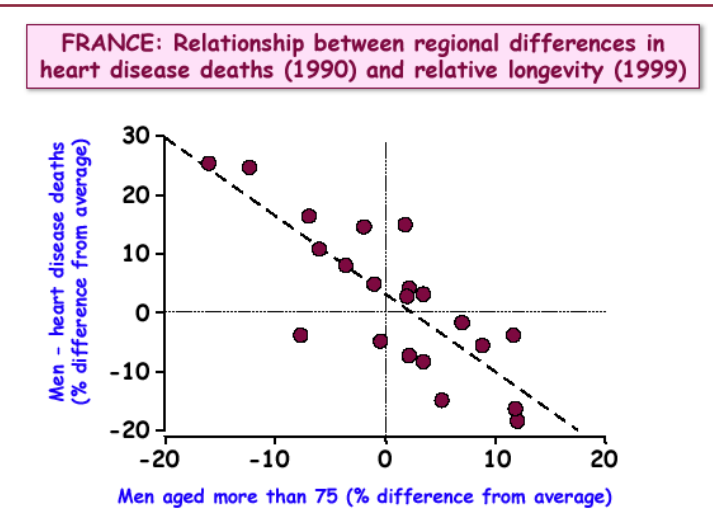
This report attempts to address the important public health issues of excess alcohol consumption with balance and objectivity. There are some important points highlighted such as the increasing strength of alcoholic drinks, including wine, and lack of adequate labelling, which often means the consumer is unaware what is a moderate/safe level of consumption. However, the overall thrust is to imply that alcohol is primarily harmful and that studies reporting beneficial effects are flawed. The problem with this approach is that the authors have often employed the conclusion of specific publications that support their perspective rather than taking an overview of the area.

Since my own research is cited in this report, and perhaps not fully understood, I think I should highlight how my opinion differs in terms of the level of cardiovascular protection afforded by red wine. Our research was conducted against a background of numerous publications suggesting that moderate alcohol consumption was associated with a lower risk of cardiovascular disease. A number of publications suggested that wine often afforded greater protection

than other alcoholic drinks. However, there has been a debate for many years, which still persists, as to whether this is actually true or not. So the question we asked was “Are all red wines the same?” If there was a specific active component that varied between wines, then perhaps maximal health benefit would only be conferred by some wines.

France and Sardinia were particularly interesting places to test this hypothesis. France has a regional variation in male heart disease mortality in men aged under 65, which is inversely correlated with male longevity (see attached figure). When it comes to wine consumption in France, a typical wine drinker consumes mainly local wine, so if that differed in any way it would likely have a greater or lesser effect depending on the active component. Similarly, Sardinia has a high proportion of centenarians, particularly in the Nuoro province. Relative isolation from mainland Italy, and poor transportation has historically led to wine consumption patterns that focus exclusively on local wines.

In parallel, we were also conducting laboratory research in collaboration with Prof. Alan Crozier and colleagues to identify biologically active polyphenols in red wine that could account for protective properties distinct from any effect of alcohol. This led to the identification of procyanidins as the component with the greatest effect on endothelial function. Subsequent research has shown procyanidins have a range of actions consistent with them conferring a cardio-protective effect. Importantly, the amounts present in procyanidin-rich red wines are sufficient that consumption of 2 to 3 small glasses per day could confer a health benefit irrespective of alcohol consumption. As stated by Prof. Crozier research on



flavonoids also supports this research, particular recent clinical trials of cocoa products which provide a similar daily dose of procyanidins to a procyanidin-rich red wine.

Until there is some level of clinical trials of different types of red wine we will not have conclusive proof that some red wines are best. However, if red wine is a vehicle to consume daily amounts of procyanidins that are shown to be protective in other studies, it

becomes harder to dismiss this association, which unfortunately is what this report attempts to do.

Finally, the resveratrol issue is completely irrelevant to the health benefits of red wine. The amounts present are simply too low. Anybody reading *The Wine Diet* (or *The Red Wine Diet* in the USA) would understand fully this point. It is an unfortunate reflection on the accuracy of this report on "Alcohol and Food" that the authors of this report cannot even copy accurately the quote they have used from my book.