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## ALCOHOL AND PUBLIC HEALTH IN EUROPE

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A short report

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June 2007

This short report is based on a report for the European Commission written by Peter Anderson and Ben Baumberg on behalf of the Institute of Alcohol studies, England.

This report should be quoted: Anderson, P., & Baumberg, B. (2007) Alcohol and Public Health in Europe. London: Institute of Alcohol Studies.

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We are grateful to the European Commission for its assistance in the production of this report.

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# 1. INTRODUCTION

## BACKGROUND

In its Conclusions of November 2006 on an EU strategy to reduce alcohol-related harm, the Council of the European Union emphasized that harmful and hazardous consumption of alcohol in the population is a major risk factor for public health and safety, a contributory factor in a range of health conditions including injuries, and associated with social harm such as domestic abuse, street disorder, violence, and social exclusion and stressed that in many cases alcohol-related harm affects people other than the drinkers themselves, including foetal damage, suffering by family members, third party deaths and injuries in traffic accidents, and lost productivity at work. The Council further pointed out that alcohol-related harm contributes to inequality in health between population groups, also in the level and nature of alcohol related harm experienced by women and men, and to health gaps between Member States, and considered that the primary aim of alcohol-related policies should be to reduce alcohol-related harm and that reduction of alcohol-related harm would promote growth and employment and strengthen European productivity and competitiveness.

The Council underlined the need to ensure that opportunities to prevent alcohol-related harm to public health and safety are addressed in a coherent manner in relevant policy areas and especially in the areas of research, consumer protection, transport, advertising, marketing, sponsoring, excise duties and other internal market issues.

The Council welcomed the 2006 Commission communication on an EU strategy to support Member States in reducing alcohol related harm as a major step towards a comprehensive and coherent Community approach to tackle the adverse impact of excessive alcohol consumption on health and well-being in Europe and concurred with the Commission on the priority themes of protecting young people, children and the unborn child; reducing injuries and death from alcohol-related road accidents; preventing alcohol-related harm among adults and reducing the negative impact on the workplace; and ensuring that EU citizens obtain relevant information on alcohol-related risks. In implementing the Communication, the Council stressed the importance of considering and applying coherently the Treaty provisions concerning the protection of public health and the Internal Market.

As part of the preparations of its Communication, the Commission contracted the Institute of Alcohol Studies to prepare a public health report on alcohol<sup>1</sup>. The full report was published during 2006, and the present document is a shortened version of the report. Detailed references for the content of the short document are found in the full report.

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<sup>1</sup> Anderson, P. & Baumberg, B. (2006) *Alcohol in Europe: A Public Health Perspective -- Report to the European Commission*. London: Institute of Alcohol Studies. ([http://ec.europa.eu/health-eu/news\\_alcoholineurope\\_en.htm](http://ec.europa.eu/health-eu/news_alcoholineurope_en.htm))

## **FRAMEWORK AND TERMINOLOGY**

The frame of reference for this document is public health, defined as the science and art of preventing disease, prolonging life and promoting health through the organized efforts of society, as well as the process of mobilizing local, state, national and international resources to ensure the conditions in which people can be healthy. In this context, this means that the central purpose of alcohol policies here is to serve the interests of public health and social well-being through their impact on health and social determinants, such as drinking patterns, the drinking environment, and the health services available to treat problem drinkers.

The main report was completed at the time when there were 25 countries in the European Union (EU25). The report sometimes broke this down into the EU15 (Austria, Belgium, Denmark, France, Finland, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom) and the EU10, the ten Member States which joined the Union in 2004 (Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia), simply to explain the differences in the evolving Europe, which can be quite substantial. The report also referred to three of the then four candidate countries, Bulgaria, Romania (now members of the Union) and Turkey, the fourth being Croatia, as well as three (Iceland, Norway and Switzerland) of the countries of the European Free Trade Association (EFTA) (the other country being Liechtenstein). This short document has adopted the same descriptions.

## 2. DRINKING IN EUROPE

### 2.1 LEVELS OF ALCOHOL CONSUMPTION

The European Union is the heaviest drinking region of the world, with each adult drinking 11 litres of pure alcohol each year – a level over two-and-a-half times the rest of the world's average. This high level of officially recorded consumption is a considerable fall from the highest point of over 15 litres in the mid-1970s, a peak which followed a period of rising consumption levels across most of Europe, Figure 1. Since then, there has been a general plateau across Europe, with the exception of a substantial fall in the wine-producing countries of southern Europe, and a continuing rise in alcohol consumption in Finland and Ireland.

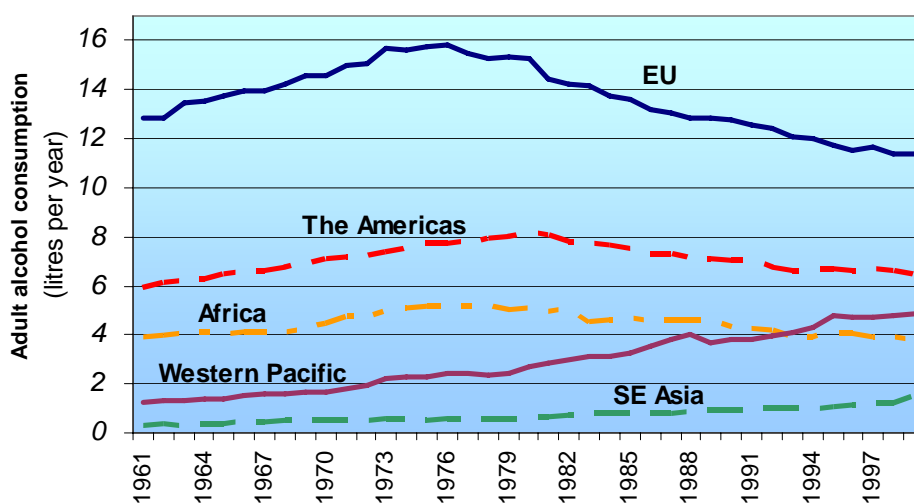


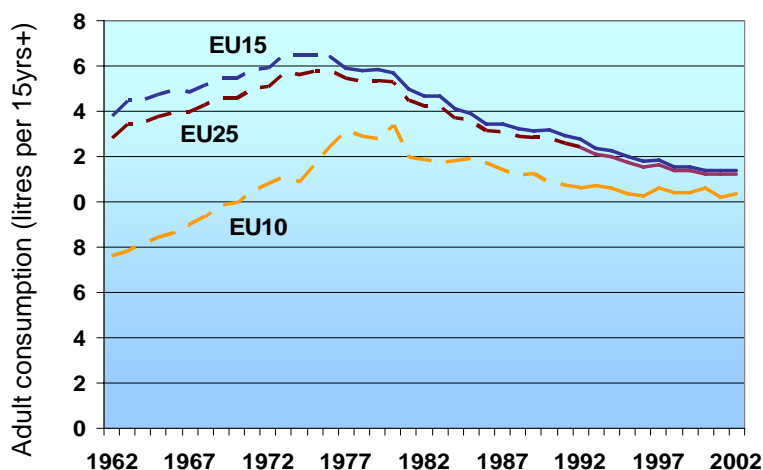
Figure 1 Europe and the world's drinking<sup>2</sup>

Within the EU there is a considerable variation in levels of recorded consumption, with Luxembourg drinking two-and-a-half times as much per adult as Malta, and even lower levels visible in non-EU European countries such as Iceland, Norway and Turkey. However, these figures miss out any alcohol that comes from smuggling, home production and cross-border shopping as well as failing to adjust for drinks bought by tourists rather than residents. Although unrecorded consumption is by its nature difficult to measure, illicit and cross-border consumption seem to be highest in eastern Europe, where it is estimated to reach 5 litres per adult per year. Considering all forms of consumption (recorded and unrecorded), the average EU adult drinks 13 litres of alcohol per year – with EU10 adults drinking two litres more than those in the EU15.

Total alcohol consumption *per drinker* in the EU is 15 litres per year. This is about 20% higher in the EU10 than in the EU15, although there is no simple divide. Only two countries (Norway and Iceland) have a consumption-per-drinker of less than 10 litres of alcohol per year, while at the other extreme there are five countries with an average of over 20 litres (Bulgaria, Hungary, Latvia, Lithuania, and Turkey).

<sup>2</sup> WHO (2004). *Global status report on alcohol 2004*. Geneva: Department of Mental Health and Substance Abuse, World Health Organization.

Nevertheless, the variation between countries for consumption per-drinker is less than for the per-capita level. Despite the present differences between countries, recorded consumption is much closer together than it was previously – across the 20 countries with data going back to the 1960s, the amount of variation has more than halved, Figure 2.



**Figure 2** Trends in European recorded alcohol consumption<sup>3</sup>

## 2.2 DRINKING PATTERNS

Some 53 million adults do not drink alcohol at all, and some 58 million can be classified as heavy drinkers, Table 1.

**Table 1** The numbers of adult Europeans (16+ years) at different drinking levels; estimates for 2001<sup>4</sup>.

	Definition (g/day)		Adults
	Men	Women	EU25 (m)
<b>Abstinent</b>	0	0	<b>53</b>
<b>Level I</b>	>0-40g	>0-20g	<b>263</b>
<b>Level II</b>	>40-60g	>20-40g	<b>36</b>
<b>Level III</b>	>60g	>40g	<b>22</b>

### Beverage choices

In general, Southern European countries prefer wine while central and northern European countries prefer beer. However, recent data suggests this divide is breaking down in places – people in Spain drink more beer than wine, while people in Greece and Spain both drink more of their alcohol in spirits than people in the 'former-spirits countries' of Sweden and Norway.

<sup>3</sup> WHO (2004). *Global status report on alcohol 2004*. Geneva: Department of Mental Health and Substance Abuse, World Health Organization.

<sup>4</sup> Rehm, J., R. Room, M. Monteiro, G. Gmel, K. Graham, N. Rehn, C. T. Sempos, U. Frick, and D. Jernigan (2004). "Alcohol." *Comparative quantification of health risks: Global and regional burden of disease due to selected major risk factors*, Edited by M. Ezzati, A. D. Lopez, A. Rodgers, and C. J. L. Murray. Geneva: WHO.



### **Drinking with meals**

People in southern European countries do more of their drinking with meals than people in other EU15 countries, particularly at lunchtime. However, people in Denmark and Sweden do more of their drinking with meals than people in some southern European countries, such as Spain. Overall, the share of total drinking occasions that occur with the afternoon/evening meal is similar in most EU15 countries – but as people in southern European countries drink much more often in total, they are more likely to drink with any given meal.

### **Frequency of drinking**

People in southern European countries drink alcohol more often than those in northern Europe, and are much more likely to be daily drinkers. However, there is little evidence for a simple north-south gradient in drinking frequency, with various central European countries showing the highest numbers of drinking days or occasions (particularly for women).

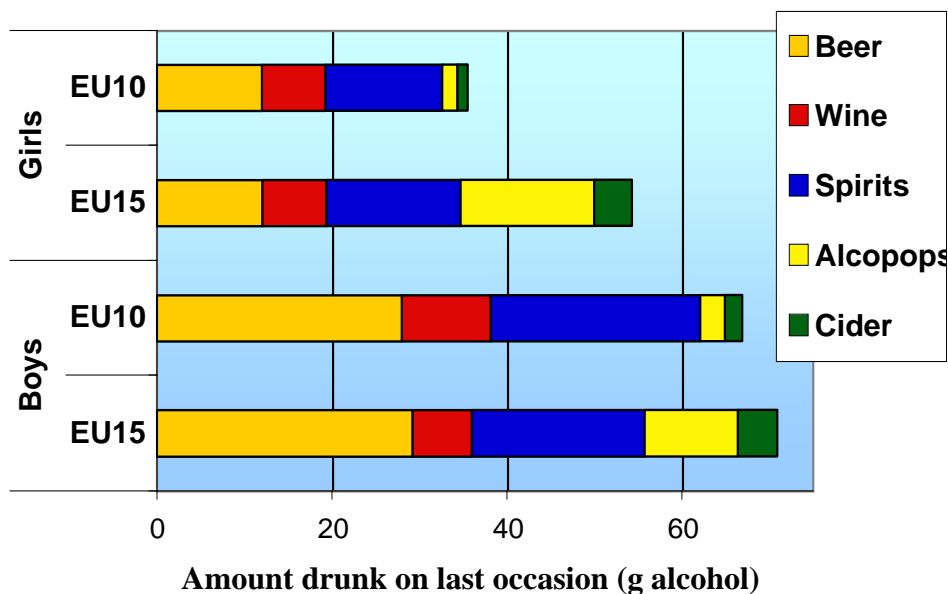
### **Drunkenness and binge-drinking**

There is a gradient in binge-drinking and drunkenness so that they are much more common in northern European countries than in the south. However, the frequency of binge-drinking appears to be lower in Sweden than in many southern European countries. There are also more very frequent binge-drinkers in southern Europe than elsewhere in the EU15. Summing up across the EU15, the average frequency of people reporting that they 'drink too much' is about five times per year, while the average frequency of binge-drinking is about 17 times per year (representing 10%-60% of drinking occasions for men and about half the proportion of occasions for women). This is equivalent to 40m EU15 citizens 'drinking too much' at least once a month – over 1 in 8 people – or 100m EU15 citizens binge-drinking (approximately 60g alcohol - six drinks - on one occasion) at least once a month, representing just under 1 in 3 of the adult population.

Young southern Europeans are more likely to drink beer and to drink in public places than older people, and less likely to drink as much wine with meals. There has already been a partial harmonization of beverage preferences and probably also of drinking frequency; if the patterns in young people represent a cohort rather than age effect, then further harmonization of drinking patterns in Europe is likely.

## **2.3 YOUNG PEOPLE'S DRINKING**

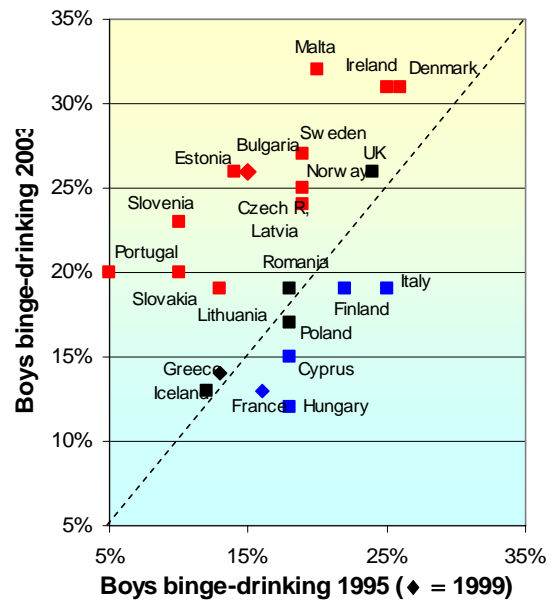
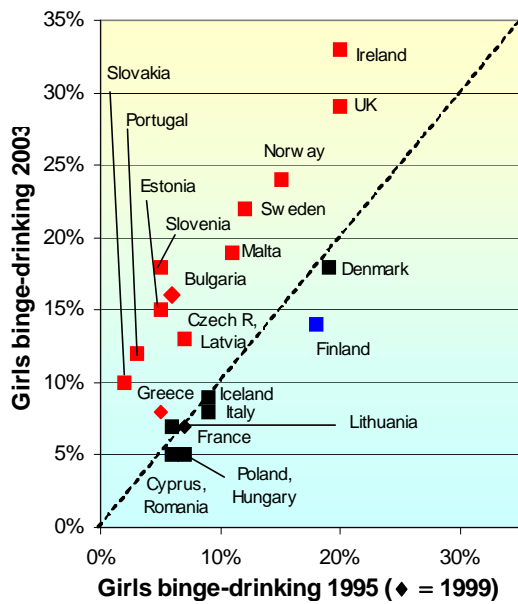
The average amount of alcohol drunk by 15-16 year olds on the last drinking occasion is 60g of alcohol, Figure 3, which suggests that binge drinking (defined as 60g on an occasion) is the norm. The frequency of 15-16 year old drinking is highest in central Europe (5-9 times per month) and lowest in northern Europe (around twice per month). The southern and eastern European countries are generally in-between at 3-5 times per month. For total consumption, this, therefore, means that boys from northern Europe appear to have the lowest levels of consumption (2-3 litres per year) with those in southern and eastern Europe generally drinking more (2-6 litres) and those in central Europe and Malta drinking much more (8-10 litres). For girls, those from central Europe also drink much more than those from anywhere else (4-7 litres compared to 3 litres in the Czech Republic and 1-2 litres elsewhere).



**Figure 3** A picture of 15-16 year students' last drinking occasion (amount drunk on the last drinking occasion)<sup>5</sup>

The highest levels of both binge-drinking and drunkenness are found in the Nordic countries, UK, Ireland, Slovenia and Latvia. This contrasts with the low levels found in France, Italy, Lithuania, Poland and Romania – for example, binge-drinking 3+ times in the last month was reported by 31% of boys and 33% of girls in Ireland, but only 12%-13% of boys and 5%-7% of girls in France and Hungary. Across the whole EU though, over 1 in 8 (13%) of 15-16 year old students have been drunk more than 20 times in their life, and over 1 in 6 (18%) have binged (5+ drinks on a single occasion) three times or more in the last month. To a considerable degree this picture depends on the questions asked. For example, students from southern Europe are about five times less likely than those from elsewhere in the EU15 to report being drunk more than 20 times in their life, although they are only half as likely to report drinking 5+ drinks on a single occasion more than 3 times in 30 days. Binge-drinking in young people has increased across much of Europe in the last 10 years, more so in the early part of this period, Figure 4.

<sup>5</sup> Hibell, B., Andersson, B., Bjarnason, T., Ahlström, S., Balakireva, O., Kokkevi, A., and Morgan, M. (2004). *The ESPAD Report 2003: alcohol and other drug use among students in 35 European countries*. Stockholm, Sweden: The Swedish Council for Information on Alcohol and Other Drugs (CAN) and The Pompidou Group at the Council of Europe. [www.espad.org](http://www.espad.org)



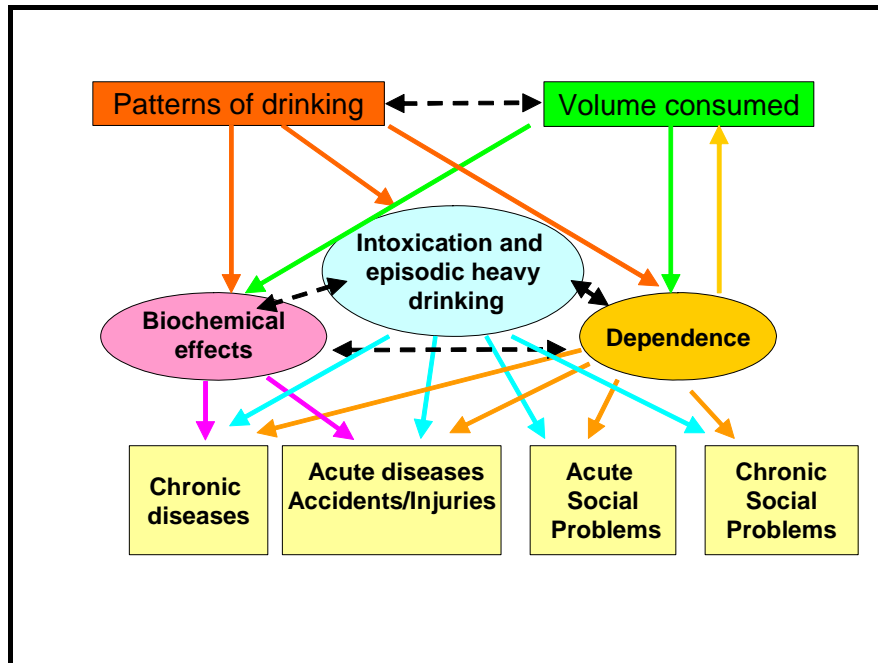
**Figure 4** Trends in binge-drinking in 15-16 year old students, 1995-2003<sup>6</sup>  
 5+ drinks on a single occasion 3+ times in last 30 days. A point above the dashed line means that binge-drinking has increased. Countries in red have seen more than a 2% increase; countries in blue have seen more than a 2% decrease. Countries in black have seen less than a 2% change.

<sup>6</sup> Hibell, B., Andersson, B., Bjarnason, T., Ahlström, S., Balakireva, O., Kokkevi, A., and Morgan, M. (2004). *The ESPAD Report 2003: alcohol and other drug use among students in 35 European countries*. Stockholm, Sweden: The Swedish Council for Information on Alcohol and Other Drugs (CAN) and The Pompidou Group at the Council of Europe. [www.espad.org](http://www.espad.org)



### 3. ALCOHOL'S IMPACT ON HEALTH AND WELL-BEING

Alcohol can risk health and well-being through three intermediate and linked ways, direct biochemical effects, intoxication and episodic heavy drinking, and dependence, Figure 5.



**Figure 5.** The relationship between alcohol consumption, intermediate variables and alcohol related outcomes<sup>7</sup>.

Alcohol can cause harm through both short term, and often brief and intense use such as episodic heavy drinking (or binge drinking), described as the *acute effects* of alcohol, and through prolonged or long term use, described as the *chronic effects* of alcohol. The disorders include those of sudden onset, whose duration is often brief, described as *acute consequences*, and those which last a long time, described as *chronic consequences*. It is important to note that there can be considerable overlap between acute and chronic exposure and between acute and chronic outcomes for individuals and for certain conditions.

In most studies relating alcohol use to risk, the measurement of alcohol consumption typically depends on self-report. If there is under-reporting of alcohol consumption, the level of risk associated with a particular amount of alcohol consumption will correspond to a greater amount of alcohol consumption and the graphs of the risk curves will be too steep. On the other hand, it is uncommon for studies to measure consumption at more than one point in the lifetime. Since alcohol consumption usually decreases with age, the level of risk will correspond to a lower amount of alcohol consumption, and the risk curves will be too shallow. This has been shown in

<sup>7</sup> Rehm, J., R. Room, M. Monteiro, G. Gmel, K. Graham, N. Rehn, C. T. Sempos, U. Frick, and D. Jernigan (2004). "Alcohol." *Comparative quantification of health risks: Global and regional burden of disease due to selected major risk factors*, Edited by M. Ezzati, A. D. Lopez, A. Rodgers, and C. J. L. Murray. Geneva: WHO.

the British Regional Heart study, which, when taking into account average consumption over 20 years, rather than just at the beginning of the 20 year period (baseline), showed steeper curves for the risk of harm, and less of a protective effect for heart disease<sup>8</sup>.

The length of follow-up also needs to be considered in estimating the true risk. The Copenhagen City Heart Study found that the apparent protective effect of low alcohol consumption on coronary heart disease became less during prolonged follow-up, whereas high alcohol consumption became associated with higher risk of death from cancer with longer follow-up<sup>9</sup>. Further, due to the way that questionnaires ask about alcohol consumption, studies that relate the risk of harm to levels of alcohol consumption summarize alcohol consumption within discrete categories, whereas the distribution between individuals is, in fact, continuous. When this was taken into account in the Copenhagen Heart Study, it was found that the size of the protective effect was less and it occurred at a lower level of alcohol consumption.

### 3.1 EPISODIC HEAVY DRINKING AND RISK TO HEALTH AND WELL-BEING

The average volume of alcohol consumption, the amount drunk on any one occasion and the frequency of drinking are all related to a number of outcomes, including alcohol-related aggression and alcohol-related injuries.

This is well illustrated in a study of alcohol-related aggression in young American men and women who were asked how often they had 'gotten into an argument or fight' during or after drinking in the previous 12 months. They were asked about how frequently they drank (drinking frequency), how much they drank overall (drinking volume), and the number of days in which five or more drinks had been consumed on the same occasion during the past 30 days (episodic heavy drinking)<sup>10</sup>. The study found that drinking frequency, drinking volume and episodic heavy drinking were all independently associated with an increased risk of fights after drinking. When these three drinking variables were analyzed together, it was found that a considerable proportion of the independent relationship between episodic heavy drinking and aggression was due to the frequency and volume of drinking. When all three drinking variables were considered together, only the frequency of drinking remained statistically significant in its relationship with aggression. Thus, whilst both volume of drinking and drinking patterns are important, there is not always a simple relationship between a pattern of episodic heavy drinking and harm.

In a Finnish study, an increasing volume of alcohol consumption increased the risk of fatal injury, Figure 6<sup>11</sup>. However, when analyzing drinking occasions, drinking at the level of one to two drinks on an occasion, regardless of frequency, did not increase the risk of fatal injury, Figure 7. Drinking four or more drinks at a time increased the risk of fatal injury, with the risk increasing with the frequency of drinking four or more

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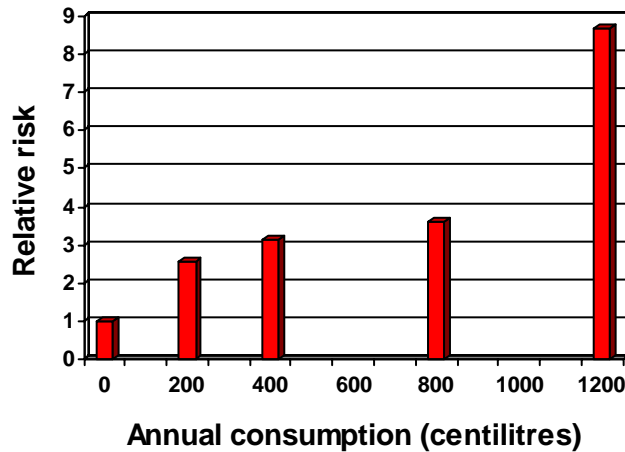
<sup>8</sup> Emberson, J.R., Shaper, A.G., Wannamethee, S.G., Morris, R.W. and Whincup, P.H. (2005). Alcohol intake in middle age and risk of cardiovascular disease and mortality: accounting for variation for intake variation over time. *American Journal of Epidemiology* 161 856-863.

<sup>9</sup> Johansen D, Gronbaek M, Overvad K, Schnohr P, Andersen PK (2005) Generalized additive models applied to analysis of the relation between amount and type of alcohol and all-cause mortality. *Eur J Epidemiol.* 20(1):29-36.

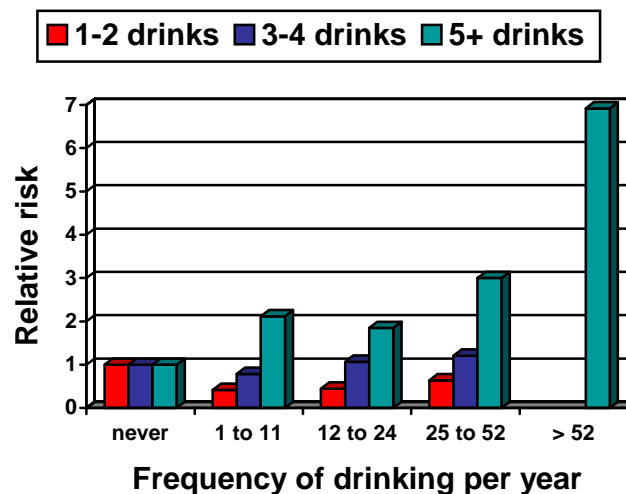
<sup>10</sup> Wells, S., Graham, K., Speechley, M. and Koval, J.J. (2005) Drinking patterns, drinking contexts and alcohol-related aggression among late adolescent and young adult drinkers. *Addiction* 100 933-944.

<sup>11</sup> Paljärvi, T., Mäkelä, P. and Poikolainen, K. (2005). Pattern of drinking and fatal injury: a population-based follow-up study of Finnish men. *Addiction* 100 1851-1859.

times on an occasion, and with no evidence that tolerance to alcohol lowered the risk of fatal injuries among frequent heavy drinkers.



**Figure 6.** The relationship between volume of alcohol consumption and risk of fatal injury amongst Finnish men.



**Figure 7.** The relationship between frequency of drinking per year and the average number of drinks per drinking occasion and risk of fatal injury amongst Finnish men.

### Social consequences of drinking

Although the risk of the most commonly experienced negative social consequences of alcohol – such as getting into a fight, harming home life, marriage, work, studies, friendships or social life – increases proportionally to the amount of alcohol consumed, both a daily consumption of more than 40g of alcohol and weekly heavy drinking occasions (50g of alcohol or more per occasion) are associated with greater risk.

### Work performance

Harmful alcohol use and episodic heavy drinking increase the risk of arriving to work late and leaving work early or disciplinary suspension, resulting in loss of productivity; turnover due to premature death; disciplinary problems or low productivity from the use of alcohol; inappropriate behaviour (such as behaviour resulting in disciplinary

procedures); theft and other crime; and poor co-worker relations and low company morale.

### **Violent consequences of drinking**

There is a relationship between alcohol consumption and the risk of involvement in violence, including homicide, which is stronger for intoxication than for overall consumption. There is an overall relationship between greater alcohol use and criminal and domestic violence, with particularly strong evidence from studies of domestic and sexual violence. Studies from the United Kingdom and Ireland indicate that one third of intimate partner violence occurs when the perpetrator is under the influence of alcohol. Parental drinking can affect the environment in which a child grows up through financial strain, poor parenting, marital conflicts and negative role models. Systematic reviews have suggested that alcohol is a cause of child abuse in 16% of cases.

### **Intentional and unintentional injuries**

The risk of drinking and driving increases with both the amount of alcohol consumed and the frequency of high volume drinking occasions. Comparison of blood alcohol concentrations (BACs) of drivers in accidents with the BACs of drivers not involved in accidents find that male and female drivers at all ages who had BACs between 0.2g/l and 0.49g/l had at least a three times greater risk of dying in a single vehicle crash. The risk increased to at least 6 times with a BAC between 0.5g/L and 0.79g/L and 11 times with a BAC between 0.8g/l and 0.99 g/L. There is a relationship between the use of alcohol, largely in the short term, and the risk of fatal and non-fatal accidents and injuries. In an Australian study, the risk of sustaining an injury after consuming more than 60g of alcohol in a 6-hour period was ten times greater for women and two times greater for men<sup>12</sup>. There is a direct relationship between alcohol consumption and the risk of suicide and attempted suicide, which is stronger for intoxication than for overall consumption.

### **Cardiovascular diseases**

Episodic heavy drinking is an important risk factor for both ischaemic and haemorrhagic stroke, and is particularly important as a cause of stroke in adolescents and young people. Up to 1 in 5 of ischaemic strokes in persons less than 40 years of age are alcohol-related, with a particularly strong association among adolescents. Episodic heavy drinking increases the risk of heart arrhythmias and sudden coronary death, even in people without any evidence of pre-existing heart disease. It has been estimated that in 15%-30% of patients with atrial fibrillation, the arrhythmia may be alcohol-related, with possibly 5%-10% of all new episodes of atrial fibrillation explained by excess alcohol use. High volume drinking occasions may precipitate myocardial ischaemia or infarction.

## **3.2 REGULAR HEAVY DRINKING AND THE RISK TO HEALTH AND WELL-BEING**

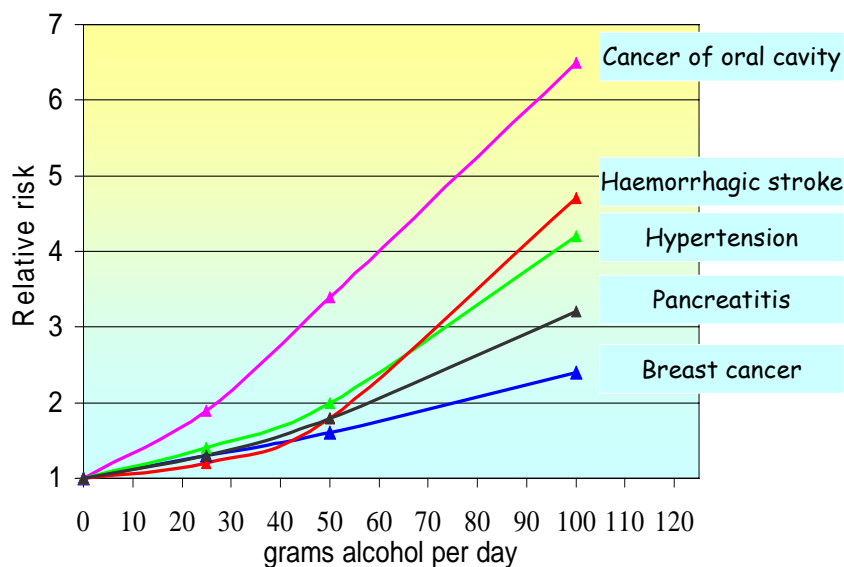
Alcohol is a toxic substance that is a cause of 60 or more different disorders with short and long term consequences. For many conditions there is an increasing risk with increasing levels of alcohol consumption, with no evidence of a threshold effect, including, for example, cancer of the oral cavity, haemorrhagic stroke, hypertension, pancreatitis and cancer of the breast in women, Figure 8. The total amount of alcohol consumed over a lifetime alcohol intake increases the risk of harm. For example,

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<sup>12</sup> McLeod R., Stockwell T, Stevens M, Phillips M (1999) The relationship between alcohol consumption patterns and injury. *Addiction*, 94, 1719–1734.



there is a straight line relationship between the amount of alcohol consumed over a lifetime and a decreased volume of brain grey matter<sup>13</sup>. A consumption of 15-30 g ethanol /day throughout life increases the risk of breast cancer in women by one third<sup>14</sup>.



**Figure 8.** The relationship between alcohol consumption and relative risk of certain outcomes.

### Neuropsychiatric conditions

There is a linear relationship between alcohol consumption and symptoms of depression and anxiety, with increasing prevalence of symptoms with greater consumption. Alcohol-dependent individuals demonstrate a two- to three-fold increase in risk of depressive disorders, and there is evidence for a continuum in the magnitude of co-morbidity as a function of level of alcohol use. Clinical studies find that between one quarter and one third of alcohol dependent patients have peripheral neuropathy, with the risk and the severity of the damage increasing as lifetime use of alcohol increases. Alcohol consumption has both immediate and long-term effects on the brain and neuropsychological functioning. People drinking 70 to 84 grams of alcohol per day over an extended period of time show some cognitive inefficiencies; people drinking 98 to 126 grams of alcohol per day show mild cognitive deficits; and 140 grams or more per day results in moderate cognitive deficits similar to those found in people with diagnosed alcohol dependence. During adolescence, alcohol can lead to structural changes in the hippocampus (a part of the brain involved in the learning process), and at high levels can permanently impair brain development.

### Gastrointestinal conditions

Long term exposure of alcohol increases the risk of liver cirrhosis and acute and chronic pancreatitis. For men who die between the ages of 35 and 69 years, the risk

<sup>13</sup> Taki Y, Kinomura S, Sato K, Goto R, Inoue K, Okada K, Ono S, Kawashima R, Fukuda H. Both global gray matter volume and regional gray matter volume negatively correlate with lifetime alcohol intake in non-alcohol-dependent Japanese men: A volumetric analysis and a voxel-based morphometry. *Alcohol Clin Exp Res* 2006; 30:1045-1050.

<sup>14</sup> Terry MB, Zhang FF, Kabat G, Britton JA, Teitelbaum SL, Neugut AI, Gammon MD. Lifetime alcohol intake and breast cancer risk. *Ann Epidemiol* 2006; 16:230-240.

of death from liver cirrhosis increases from 5 per 100,000 at no alcohol consumption to 41 per 100,000 at 4 or more drinks per day<sup>15</sup>. Although a strong correlation exists between the risk of cirrhosis, the product of daily consumed alcohol in grams and the time of alcohol consumption, only approximately 20% of people with alcohol dependence develop liver cirrhosis, and some studies point to the existence of genetic factors which predispose to alcoholic liver disease. There is an interaction with hepatitis C infection, with infection increasing the risk of liver cirrhosis at any given level of alcohol consumption, and increasing the severity of the cirrhosis.

### **Endocrine and metabolic conditions**

The relationship with type II diabetes appears to be U- or J-shaped, with low doses decreasing the risk compared with abstainers in both men and women and higher doses increasing the risk. Experimental evidence from several metabolic studies shows an enhancement of a positive fat balance, and thus alcohol being a risk factor for the development of a positive energy balance and weight gain, with the fat being preferentially deposited in the abdominal area. In a study of Swiss restaurant keepers, although abstainers had a higher body weight than moderate alcohol consumers, limiting the analysis to daily alcohol consumers found a linear increase of the body mass index (BMI) with increasing alcohol intake up to a daily consumption of more than 125g alcohol<sup>16</sup>. Alcohol appears to increase the risk of high blood levels of uric acid and gout in a dose dependent manner.

### **Cancers**

Alcohol is a carcinogen and long term exposure increases the risk of cancers of the mouth, oesophagus (gullet), larynx (upper airway), liver and female breast, and to a lesser extent, cancers of the stomach, colon and rectum in a linear relationship, with no evidence of a threshold effect. The annual risk of death from alcohol-related cancers (mouth, gullet, throat and liver) increases from 14 per 100,000 for non-drinking middle-aged men to 50 per 100,000 at 4 or more drinks (40g alcohol) a day<sup>15</sup>. The cumulative risk of female breast cancer by age 80 years increases from 88 per 1000 non-drinking women to 133 per 1000 women who, at baseline, drank 6 drinks (60g) a day<sup>17</sup>. There is a consistent relationship between alcohol and risk of lung cancer, although this is believed to be mediated by smoking.

### **Cardiovascular diseases**

The risk of coronary heart disease decreases to about 80% of the level of non-drinkers at 20 grams (two drinks) of alcohol per day, with most of the reduction in risk occurring by a consumption of one drink every second day. Higher quality studies find less of a protective effect than lower quality studies, and some reviews have suggested that the protective effect is due to systematic misclassification by including as 'abstainers' many people who had reduced or stopped drinking, a phenomenon associated with ageing and ill health. Further, few studies have examined how the relative risk between alcohol consumption and heart disease changes with old age. In general, the protective effect decreases with increasing age. Also, in this age group, there is an increased over-recording of coronary heart disease on death certificates.

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<sup>15</sup> Thun MJ, Peto R, Lopez AD, Monaco JH, Henley SJ, Heath CWJ, Doll R (1997) Alcohol consumption and mortality among middle-aged and elderly US adults. *The New England Journal of Medicine*, 337, 1705–1714.

<sup>16</sup> Meyer R, Suter PM, Vetter W. (1999). Alcohol—a risk factor for overweight? *Schweiz Rundsch Med Prax* 88: 1555–1561.

<sup>17</sup> Meyer R, Suter PM, Vetter W. (1999). Alcohol—a risk factor for overweight? *Schweiz Rundsch Med Prax* 88: 1555–1561.

Alcohol raises blood pressure and increases the risk of hypertension and haemorrhagic stroke in a dose dependent manner. There is a J-shaped relationship between alcohol consumption and risk of ischaemic stroke, with consumption levels of up to 24g a day reducing the risk, whereas consumption levels of 60 or more grams per day increasing the risk. Over a sustained period of time (five years or more), a high consumption of alcohol (more than 90g a day) in a dose dependent manner can lead to cardiomyopathy, a disease of the heart muscle that leads to an enlarged heart and thinning of the heart muscle.

### **Immune system**

Alcohol can interfere with the normal functions of various components of the immune system, and a high level of alcohol consumption can lead to immune deficiency, causing increased susceptibility to certain infectious diseases, including pneumonia, tuberculosis, and possibly HIV.

### **Lung diseases**

Acute respiratory distress syndrome (ARDS) is a severe form of lung injury that results from blood infections, trauma, pneumonia and blood transfusions. Harmful alcohol use and alcohol dependence independently increase the risk of ARDS two- to four-fold in patients with sepsis or trauma and may play a role in ARDS in as many as half of all patients with the syndrome.

### **Post-operative complications**

Alcohol, in a dose dependent manner, increases the risk of post-operative complications for general surgery, including infection, bleeding problems and cardiopulmonary insufficiency requiring intensive care.

### **Skeletal conditions**

There appears to be a dose-dependent relationship between alcohol consumption and osteoporosis and risk of fracture in both men and women with the relationship less important in women than in men. In high doses, although in a dose dependent manner, alcohol is a cause of muscle disease and a decrease in muscle strength. It is probably the most common cause of muscle disease, affecting between one and two thirds of all people with alcohol dependence.

### **Pre-natal conditions**

Alcohol shows reproductive toxicity. Prenatal exposure to alcohol can be associated with a distinctive pattern of intellectual deficits that become apparent later in childhood, including reductions in general intellectual functioning and academic skills as well as deficits in verbal learning, spatial memory and reasoning, reaction time, balance, and other cognitive and motor skills. Some deficits, like problems with social functioning, appear to worsen as these individuals reach adolescence and adulthood, possibly leading to an increased rate of mental health disorders. Although these deficits are most severe and have been documented most extensively in children with Foetal Alcohol Syndrome (FAS), children pre-natally exposed to lower levels of alcohol can exhibit similar problems.

## **3.3 ALCOHOL DEPENDENCE AND RISK TO HEALTH AND WELL-BEING**

No matter how drinking is measured, the risk of alcohol dependence increases with both the volume of alcohol consumption and a pattern of drinking larger amounts on an occasion. The association between alcohol consumption and dependence should not be seen as flowing in one direction only, i.e. from drinking to alcohol dependence. One of the characteristics of alcohol dependence is self-perpetuation. Once installed,

dependence itself influences both the pattern and volumes of alcohol consumption, which in turn leads to the maintenance of dependence. Alcohol dependence is particularly common amongst young adults, with frequent drinking at ages 14-15 years predicting alcohol dependence at age 20-21 years. One half of people who eventually become dependent do so within ten years of the first use of alcohol, although the most severe forms of alcohol dependence are rare before the age of 30 years. Alcohol dependence is a condition in its own right. It is because it is a condition in which the harmful use of alcohol takes on a much higher priority for a given individual than other behaviours that once had greater value that it functions as a powerful mechanism sustaining alcohol consumption and mediating its impact on both short and long term diseases and social harms.

### 3.4 ALCOHOL AND THE RISK OF DEATH

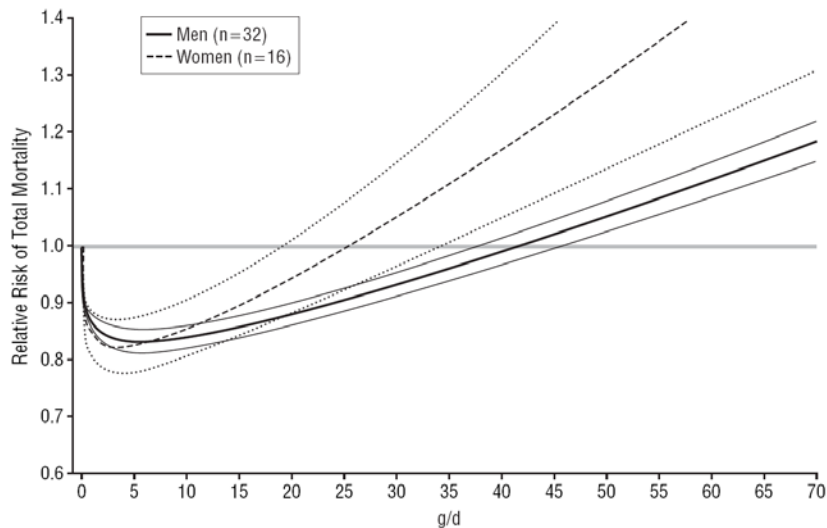
Unfortunately, alcohol epidemiology has not developed to the same extent as tobacco epidemiology and there are insufficient long term follow-up studies of sufficient sample size which report accurate absolute risks (as opposed to relative risks). A recent meta-analysis of 34 studies, which followed a total 1 million subjects for an average length of 12 years, with 94,000 deaths, showed that compared with an alcohol consumption of about 5g/day, women consuming 60g alcohol a day had an approximately 60% increase in risk of death and men an approximately 30% increase in risk of death, Figure 9<sup>18</sup>. At 40g alcohol a day, the increased risk for women was a little over 30%. It is better to make the comparison group the light drinking category, because of the continuing concerns about the nature of the non-drinking groups.

In the British doctor's study, which followed up 12,000 male doctors aged between 48 and 78 years (mean age 64) for 23 years, the age standardized annual death rate at 5g alcohol/day was 3.4%, and at 50g/day just over 4%, a 20% difference<sup>19</sup>. In other words, of the light drinkers, 22% would still be alive after 23 years, but of the heavy drinkers, 7% would still be alive after 23 years.

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<sup>18</sup> Castelnovo, A., Costanzo, S., Bagnardi, V., Donati, M.B., Iacoviello, L., de Gaetano, G. (2006). Alcohol Dosing and Total Mortality in Men and Women An Updated Meta-analysis of 34 Prospective Studies *Arch Intern Med.* 2006;166:2437-2445

<sup>19</sup> Doll, R., Peto, R., Boreham, J., & Sutherland, I. (2005). Mortality in relation to alcohol consumption: a prospective study among male British doctors *International Journal of Epidemiology* 2005;34:199-204



**Figure 9** Relative risk of total mortality related to alcohol consumption (g/day).

### 3.5 ARE SOME PEOPLE MORE AT RISK?

Genetic background influences the risk of alcohol use disorders. Analyses of 987 people from 105 families in the initial sample of the US Collaborative Study on the Genetics of Alcoholism (COGA), a large-scale family study designed to identify genes that affect the risk for alcohol dependence and alcohol-related characteristics and behaviours, provided evidence that regions on 3 chromosomes contained genes that increased the risk of alcohol dependence. The replication sample, which comprised 1,295 people from 157 families, confirmed the previous findings, albeit with less statistical support. Variants of the genes *ADH2*, *ADH3* and *ALDH2* substantially (although not completely) protect carriers from developing alcohol dependence by making them uncomfortable or ill after drinking alcohol.

At any given level of alcohol consumption, women appear to be at increased risk from the chronic harms done by alcohol, with differing sizes of risk with different illnesses. Consistently across countries and studies, alcohol dependence and alcohol-related mortality is highest in adults with lower socio-economic status. In England, for men aged 25–69 years, those in the lowest socio-economic status (SES) category (unskilled labour) had a 15-fold higher risk of alcohol-related mortality than professionals in the highest SES category. Children have greater vulnerability to alcohol than adults. As well as usually being physically smaller, they lack experience of drinking and its effects. Those with heavier consumption in their mid-teens tend to be those with heavier consumption, alcohol dependence and alcohol related harm, including poorer mental health, poorer education outcome and increased risk of crime in early adulthood.



## 4. ALCOHOL'S BURDEN TO EUROPE

### 4.1 EPISODIC HEAVY DRINKING AND ITS BURDEN TO EUROPE

Each year in the European Union, alcohol is related to:

- 2,000 homicides (4 in 10 of all murders)
- 17,000 deaths from road traffic accidents (1 in 3 of all road traffic fatalities), including 10,000 deaths of people other than the drink-driver
- 27,000 accidental deaths
- 10,000 suicides (1 in 6 of all suicides)
- 16% of all child abuse / neglect
- 5-9 million children living in families adversely affected by alcohol

Alcohol use is associated with **crime and domestic violence** in all European countries, and is particularly involved with violent crimes. Generally, the higher the level of alcohol consumption, the more serious the violence. It should be borne in mind that the links to alcohol show how far alcohol is *associated* with violence, which may be greater than its *causal* role.

Measuring the relationship between alcohol and homicide is easier than that to general violence, and it has been estimated that over 2,000 **homicide** deaths per year are attributable to alcohol use, 4 of every 10 homicides that occur in the European Union. Homicide rates in a country change with changes in alcohol consumption. Although the effect per litre change in alcohol consumption has been greater in northern Europe, the higher consumption levels in southern Europe mean that the overall estimated number of homicides caused by alcohol is estimated to be similar in northern and southern Europe.

**Child abuse** Parental drinking can affect the environment in which a child grows up through financial strain, poor parenting, marital conflicts and negative role models. A variety of childhood mental and behavioural disorders are more prevalent among children of heavy drinkers than others, and there is a higher risk of child abuse in families with heavy drinking parents, with the estimate that alcohol is a cause of child abuse in 16% of cases. Five to nine million European children (6%-12% of all children) are living in families adversely affected by alcohol.

### 4.2 REGULAR HEAVY DRINKING AND ITS BURDEN TO EUROPE

Each year in the European Union, alcohol is a cause of:

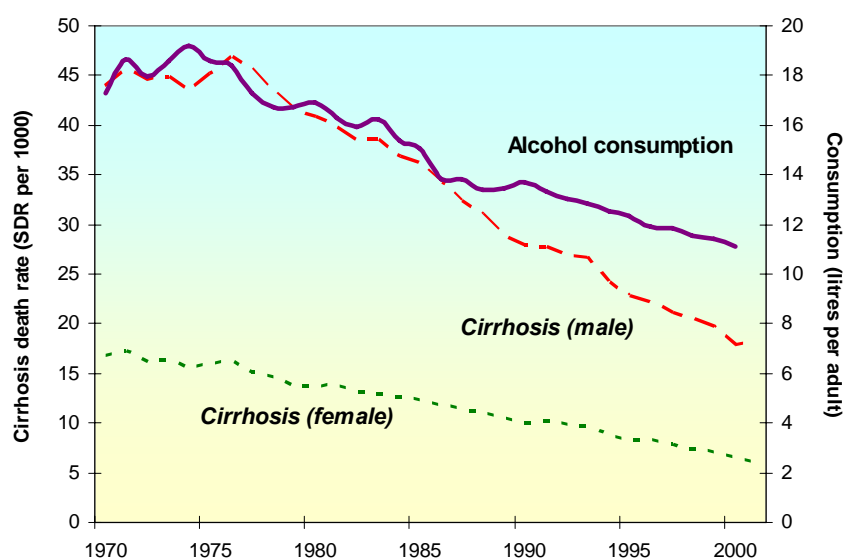
- 45,000 deaths from liver cirrhosis
- 50,000 cancer deaths, of which 11,000 are female breast cancer deaths
- 17,000 deaths due to neuropsychiatric conditions
- 200,000 episodes of depression

#### **Neuropsychiatric conditions**

Neuropsychiatric disorders include depression and epilepsy, as well as directly alcohol-attributable disorders such as alcohol psychoses and dependence. On their own these account for an enormous part of ill-health in Europe, equivalent to 4% of the entire burden of Europe's death and disease. A conservative estimate suggests that alcohol is responsible for over 200,000 major depressive episodes across Europe each year.

### Gastrointestinal conditions

Over 45,000 cirrhosis deaths are caused by alcohol, accounting for nearly two thirds of all cirrhosis deaths and one quarter of all alcohol-attributable mortality. Cirrhosis death rates tend to move in parallel to changes in overall consumption, Figure 10.



**Figure 10** – Alcohol consumption and cirrhosis rates in southern Europe (France, Italy, Greece, Spain and Portugal)<sup>20</sup>

### Cancers

The more than 50,000 deaths due to cancer represent the single largest cause of death arising from alcohol use. Unlike most alcohol-related harms, cancers are also a particular risk for women, with 11,000 of the deaths being those of female Europeans dying from alcohol-attributed breast cancer every year.

### Reproductive conditions

Alcohol is responsible for 1%-2% of low birth weight in Europe, equivalent to 60,000 underweight births each year in the EU.

## 4.3 ALCOHOL DEPENDENCE AND ITS BURDEN TO EUROPE

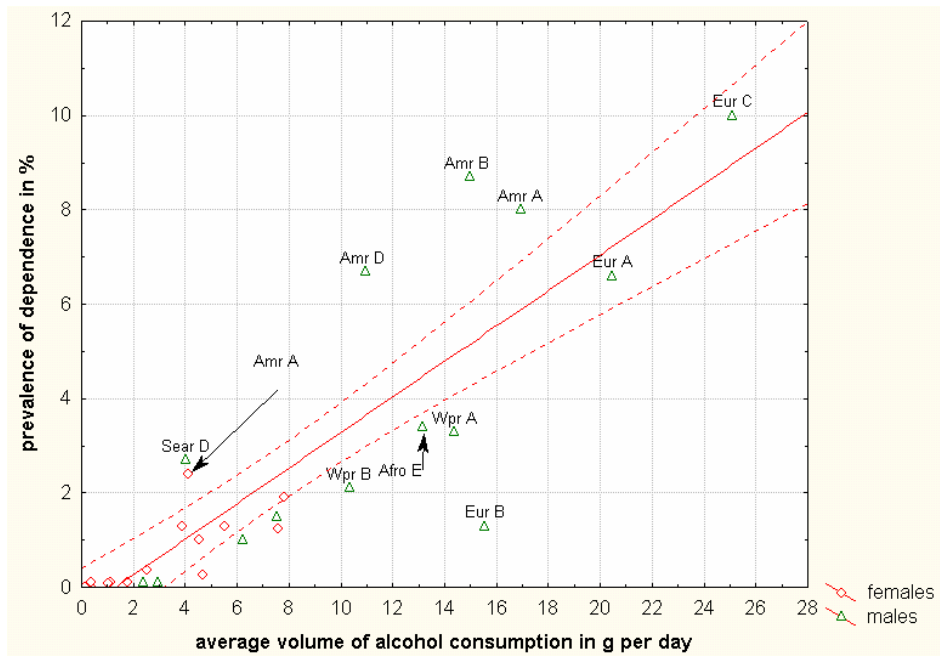
Some 23m people are dependent on alcohol in the European Union, with the intangible impact of alcohol dependence on family members estimated to be €68bn per year.

Hippocrates, writing 2500 years ago, advised anyone coming to a new city to enquire whether it was likely to be a healthy or unhealthy place to live, depending on its geography and the behaviour of its inhabitants (“whether they are fond of excessive drinking”). He continued “as a general rule, the constitutions and the habits of a people follow the nature of the land where they live”. The impact of the area and population in which people live is clearly demonstrated by studies of large scale migrations from one culture to another, in which, for example, an increase in risk factors and coronary heart disease is observed when individuals migrate from a low to a high risk culture and assume the lifestyle of the new culture. In other words, and this applies to many risk factors and conditions, including suicide, the behaviour and

<sup>20</sup> WHO Health For All database <http://www.who.dk/hfadb>.



health of individuals are profoundly influenced by a society's collective characteristics and social norms. This also applies to alcohol, where there is a relationship between prevalence of alcohol dependence and the overall per capita alcohol consumption, Figure 11.

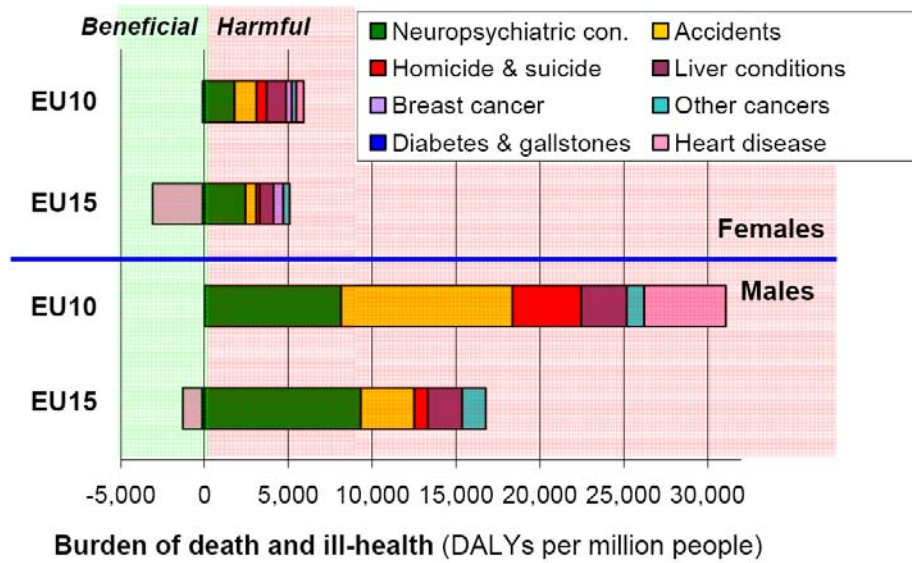


**Figure 11** Prevalence of alcohol dependence in relation to average volume of consumption for the different WHO regions of the world<sup>21</sup>

#### 4.4 OVERALL HEALTH BURDEN DUE TO ALCOHOL

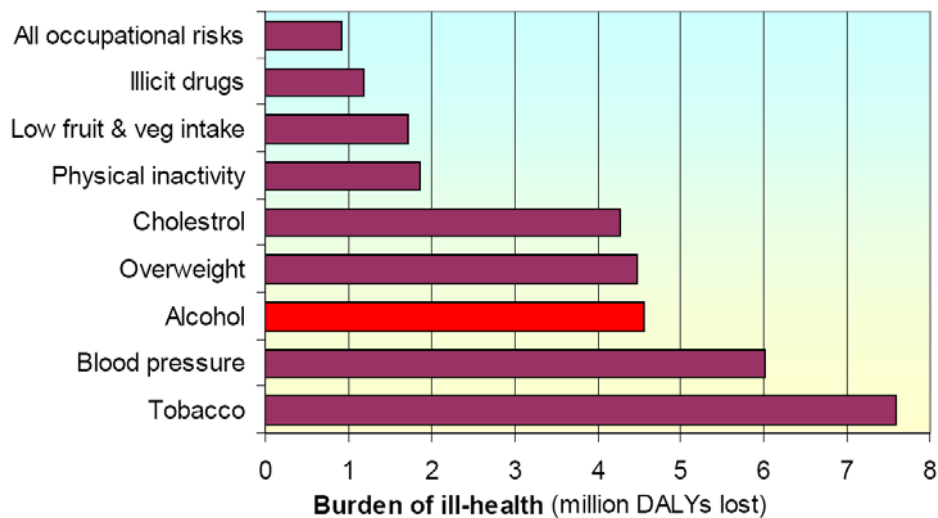
The WHO uses a measure called Disability-Adjusted Life Years (DALYs) to estimate the number of healthy years of life lost due to each risk factor. DALYs measure a gap in health between the current position and what could be achieved. Alcohol is responsible for the loss of over 4.5 million DALYs every year in the EU (7.4% of all DALYs). This is principally for men, accounting for 12% of all male ill-health and premature death and a smaller but still sizeable 2% of all female ill-health and premature death. The larger proportion of the burden arises from alcohol-related neuropsychiatric conditions and accidents, Figure 12.

<sup>21</sup> Rehm, J. & Eschmann, S. (2002). Global monitoring of average volume of alcohol consumption. *Zeitschrift für Sozial- und Präventivmedizin* 47(1), 48-58.



**Figure 12** Alcohol-attributable burden of death and ill-health in the European Union<sup>22</sup>

This makes alcohol the third-leading risk factor for death and disability in the European Union, ahead of obesity/overweight and nearly four times that of illicit drugs, Figure 13. Only blood pressure and tobacco account for a greater morbidity toll.



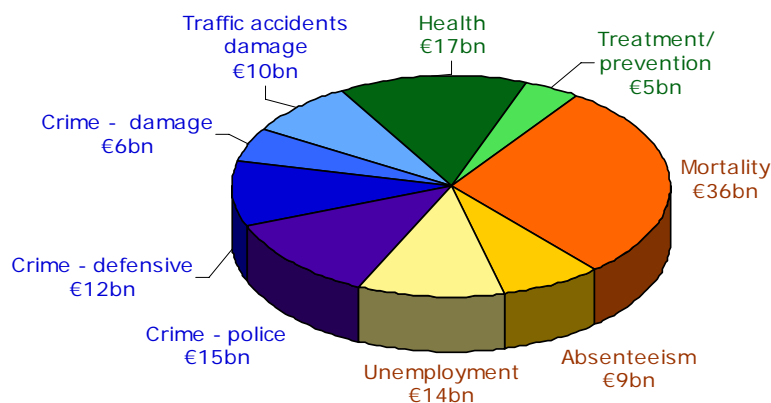
**Figure 13** Top 9 risk factors for ill-health in the European Union<sup>22</sup>

#### 4.5 ECONOMIC BURDEN DUE TO ALCOHOL

Based on the results of 21 European studies, the total tangible cost of alcohol to the European Union has been estimated to be €125bn (€79bn-€220bn) in 2003, equivalent to 1.3% of GDP (0.9%-2.4%), Figure 14. Actual spending on alcohol-related problems accounts for €66bn of this, while potential production not realised

<sup>22</sup> Anderson, P. & Baumberg, B. (2006) *Alcohol in Europe: A Public Health Perspective -- Report to the European Commission*. London: Institute of Alcohol Studies. ([http://ec.europa.eu/health-eu/news\\_alcoholineurope\\_en.htm](http://ec.europa.eu/health-eu/news_alcoholineurope_en.htm))

due to absenteeism, unemployment and premature mortality accounts for a further €59bn.



**Figure 14** The tangible cost of alcohol in Europe 2003, by cost component<sup>23</sup>

Aside from the tangible monetary costs, alcohol causes an intangible cost of €152bn-€764bn, which incorporates the value people place on pain, suffering and life itself due to crime and lost healthy life due to alcohol. This intangible cost is not an 'economic loss' in the normal sense of the term and cannot be compared to e.g. GDP (nor can it be simply added to the tangible cost, given that they both include estimated values for lost life but the estimates are done in different ways). However, this cost offers a more accurate estimate of the full economic and human cost of alcohol to the EU.

#### 4.6 ARE SOME PEOPLE MORE AT RISK?

##### Socioeconomic status

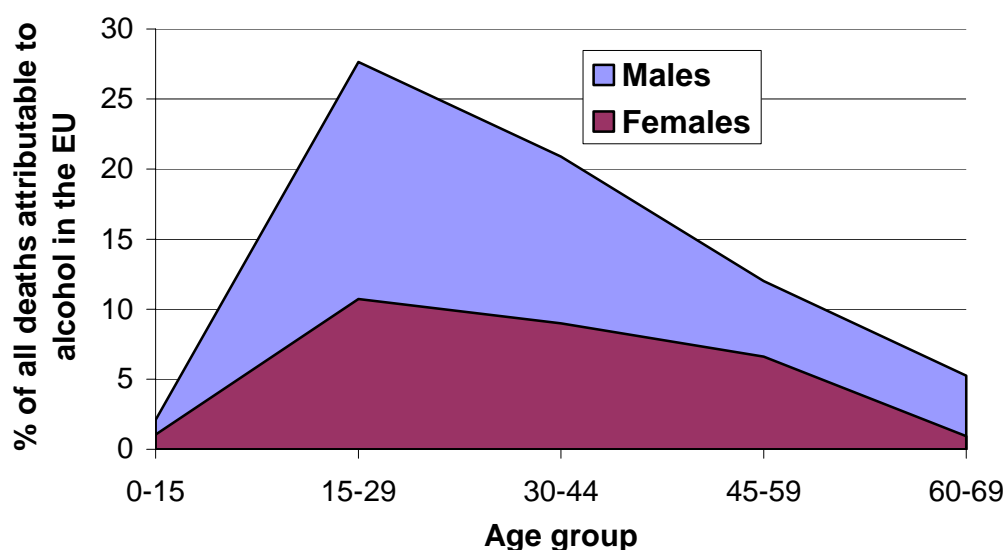
Alcohol is a cause of health inequalities *within* countries. For example, in Sweden, alcohol is the 2nd most important cause of inequalities in the burden of ill-health for men (7th for women), with several other alcohol-related diseases such as ischaemic heart disease and self-inflicted injuries also prominent. Many of the conditions that are responsible for health inequalities are strongly linked to alcohol, including external causes (e.g. violence, accidents), stroke and liver disease (across the EU15), ischaemic heart diseases (northern Europe) and cancer (southern Europe). Alcohol's role in these inequalities may be different in different countries, however; for example, the two countries with the largest inequalities in men aged 45-59 are France and Finland, but while the former finds this to be mainly due to liver cirrhosis and alcohol-related cancers, the latter is caused primarily through violent deaths. Research from Finland further suggests that socioeconomic variables act on the collective as well as the individual level. Areas with the most manual workers had 20% more mortality directly attributable to alcohol than areas with the least, even after accounting for the *individual* relationship of occupation to mortality

<sup>23</sup> Anderson, P. & Baumberg, B. (2006) *Alcohol in Europe: A Public Health Perspective -- Report to the European Commission*. London: Institute of Alcohol Studies. ([http://ec.europa.eu/health-eu/news\\_alcoholineurope\\_en.htm](http://ec.europa.eu/health-eu/news_alcoholineurope_en.htm))

Alcohol is a cause of health inequalities *between* countries, being responsible for a difference in the crude death rate of approximately 90 extra deaths per 100,000 people for men and 60 per 100,000 for women in the EU10, compared with the EU15.

### Young people

The burden of ill-health due to alcohol is disproportionately shouldered by young men in Europe, 13,000 of whom die in the EU each year, Figure 15. This represents 1 in every 4 deaths of young men, rising to nearly 1 in 3 in the EU10. Alcohol is responsible for a slightly smaller but still substantial death toll in young women, with the 2,000 deaths corresponding to 11% of female mortality at this age across the EU.



**Figure 15** The share of deaths attributable to alcohol in EU citizens younger than age 70 years (year 2000)<sup>24</sup>

The high level of harms to young people is due to the importance of intentional and unintentional injury as primary causes of death in young people, as opposed to heart disease later in life.

## 4.7 RELATIONSHIP BETWEEN ALCOHOL CONSUMPTION AND HARM

The connection between changes in population drinking and mortality has been comprehensively investigated within the European Comparative Alcohol Study, analyzing the relationship between yearly changes in consumption and harm, and estimates the relative change in mortality for a change in per capita consumption of one litre of pure alcohol<sup>25</sup>.

The country-specific results were pooled for three country-groups: 'high-consuming' countries (France, Italy, Portugal and Spain), 'mid-consuming' countries (Austria,

<sup>24</sup> Rehm, J. (2005). "Volume of Alcohol Consumption, Patterns of Drinking and Burden of Disease in the European Region - Implications for Alcohol Policy." *10th meeting of national counterparts for alcohol policy in the WHO European Region, Stockholm 13-15 April 2005 [conference proceeding]*

<sup>25</sup> Norström, T., Ö. Hemström, M. Ramstedt, I. Rossow, and O-J. Skog (2001). "Mortality and Population Drinking." *Alcohol in postwar Europe: Consumption, drinking patterns, consequences and policy responses in 15 European countries*, Edited by T. Norström. Stockholm: National Institute of Public Health, European Commission.

Belgium, Denmark, Ireland, Netherlands, U.K. and West Germany) and 'low-consuming' countries (Finland, Norway and Sweden). Nearly all conditions and total mortality showed a stronger effect of a one-litre change in consumption in the low-consuming countries (i.e. northern Europe) than elsewhere, perhaps reflecting the increased proportional size of a one-litre change in these low-consuming countries, Table 2.

Significant positive relationships between consumption and harm were still found for at least one gender in medium- and high- consuming countries for cirrhosis, accidents, and homicide, with medium-consuming countries also showing an effect for at least one gender for directly alcohol-attributable mortality, suicide and heart disease. When examined in more detail, the higher northern European effect for accident mortality was due to accidental falls and 'other accidents', but a stronger effect was, in fact, found in high- and medium-consuming countries for traffic accident mortality.

**Table 2** Change in death rates (%) from a 1 litre increase in alcohol consumption  
Changes are per capita and are calculated separately for low, medium and high consuming European countries for men (M) and women (F). **Key:** \* = Significant at the 5% level

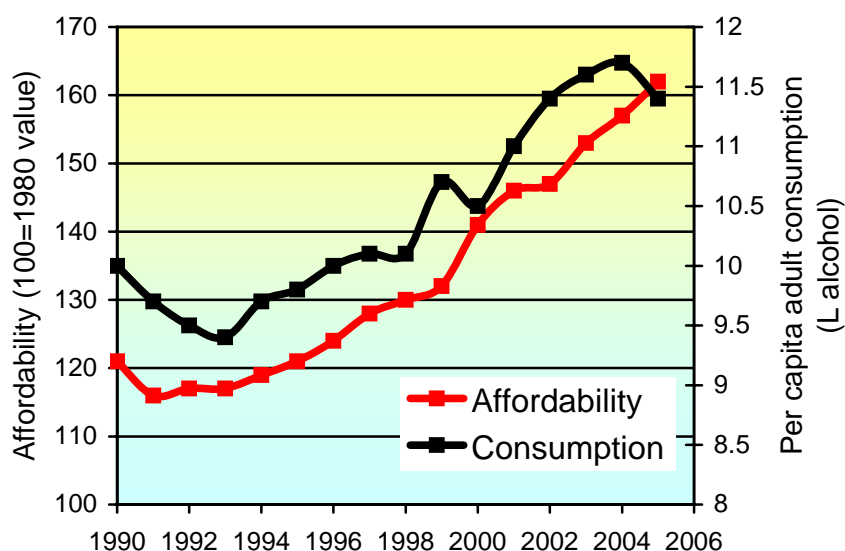
Country group (alcohol consumption)	Low		Medium		High	
	M	F	M	F	M	F
Cirrhosis	32*	17*	9*	5*	10*	11*
Alcohol dependence, psychosis and poisoning	35*	75*	18*	27*	3	1
Accidents	9*	10*	3*	3*	2*	2*
Suicide	9*	12*	0	3*	0	1
Homicide	18*	8	11*	7*	7*	2
IHD	-1	1	1	2*	1	0
<b>Total mortality</b>	<b>3*</b>		<b>1*</b>		<b>1*</b>	



## 5. REDUCING THE HARM DONE BY ALCOHOL

### 5.1 MAINTAIN THE RELATIVE PRICE OF ALCOHOL

When it comes to alcohol's affordability, in general, the way drinkers respond to changes is similar to their responses to other consumer products. When other factors are held constant, the more affordable alcohol is, the more it is consumed; and the less affordable it is, the less it is consumed, Figure 16.



**Figure 16** The affordability of alcohol (100=1980 value) and the adult per capita consumption (L alcohol, derived from tax receipts) in England<sup>26</sup>

The effect of price changes on alcohol consumption is described as the price elasticity of demand. Demand for alcohol is generally inelastic – that is, a change in its price results in a drop in consumption, but one that is relatively smaller than the increase in price. This means that while tax can be used as a strategy to reduce consumption and harm it will still serve the purpose of raising government revenue at the same time. In the EU, it has been estimated that a 10% price rise would give around €13bn of additional excise duty revenues, whilst at the same time saving over 9,000 deaths in the older 15 EU Member States in a given year<sup>27</sup>.

The price elasticity for different beverages and for different countries and over time is not uniform. Comparisons of beer, spirits and wine price elasticity have found it to be lower for the beverage generally preferred in a particular country, than for less preferred alcoholic beverage types. The way drinkers respond to and compensate for price changes is complex, because of the possibilities for substitution. Drinkers tend to shift to more expensive beverages if relative prices decrease, either within the same beverage category or across beverage categories. If prices are raised, they both reduce overall consumption but also shift to cheaper beverages. Heavy

<sup>26</sup> The Information Centre (2006). Statistics on alcohol: England, 2006.

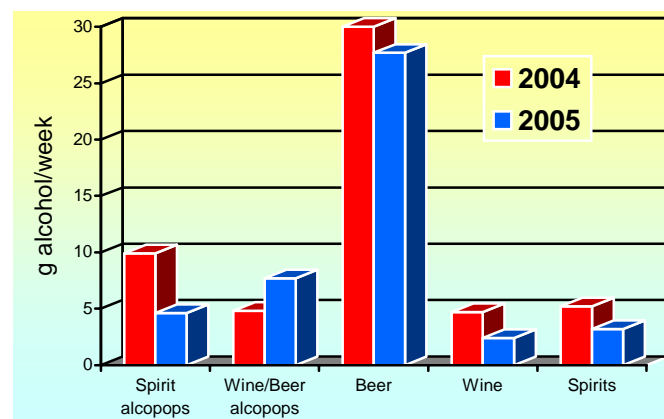
<http://www.ic.nhs.uk/pubs/alcoholeng2006>

<sup>27</sup> Anderson, P. & Baumberg, B. (2006). Alcohol in Europe: a public health perspective.

[http://ec.europa.eu/health-eu/news\\_alcoholineurope\\_en.htm](http://ec.europa.eu/health-eu/news_alcoholineurope_en.htm)

drinkers tend to buy the cheaper products within their preferred beverage category. The impact of an increase in alcohol price is stronger in the longer term than it is in its immediate effects. From a public policy perspective, it is the long term effects, taking into account alcohol's dependence producing properties that are more important.

**Young people** are particularly sensitive to price. Policies that increase alcohol prices have been shown to reduce the proportion of young people who are heavy drinkers, to reduce underage drinking, and to reduce per occasion binge drinking. Higher prices also delay intentions among younger teenagers to start drinking and slow progression towards drinking larger amounts. Further, special taxes for spirit based sweet pre-mixed drinks lead to reductions in sales and consumption of the specific drinks, Figure 17.



12-17 year olds weekly alcohol consumption

**Figure 17** Impact of specific tax introduced in 2004 on spirits based alcopops on 12-17 year olds weekly consumption, Germany<sup>28</sup>

**Heavy drinkers** are also sensitive to price, with higher alcohol taxes or prices leading to reductions in deaths from liver cirrhosis, fatality rates from traffic crashes, and reduced rates of crime, including assault, violence related injury, homicide, family violence, and child abuse and other violence towards children.

Taxes based on the volume of pure alcohol could be regressive, compared to a tax that is a percentage of the price, with taxes weighing more heavily on poorer drinkers than on richer drinkers; however, the majority of people who drink small amounts of alcohol would gain from an increase in an alcohol tax, as current rates generally do not cover the direct fiscal costs of alcohol related harm; in general, it is heavy drinkers who would be worse off.

Alcohol tax increases can impact on illegal production, tax evasion and illegal trading, smuggling and cross border purchases. Where there are neighbouring countries with substantially lower taxes and open borders, this will need to be taken into account in when setting tax levels.

<sup>28</sup> Entwicklung des Alkoholkonsums bei Jugendlichen  
[http://www.bmg.bund.de/nn\\_604240/SharedDocs/Download/DE/Themenschwerpunkte/Drogen-und-Sucht/pdf-Alkopops-Studie-pdf,templateId=raw,property=publicationFile.pdf/pdf-Alkopops-Studie-pdf.pdf](http://www.bmg.bund.de/nn_604240/SharedDocs/Download/DE/Themenschwerpunkte/Drogen-und-Sucht/pdf-Alkopops-Studie-pdf,templateId=raw,property=publicationFile.pdf/pdf-Alkopops-Studie-pdf.pdf)



Alcohol taxes can be justified on the grounds of recouping the costs associated with alcohol related harm. Alcohol can have negative consequences and costs for the drinkers themselves and for third parties and communities (negative 'externalities'). A tax on alcohol that goes to a government to help meet the fiscal costs of alcohol related harm is a way of 'internalising' these costs to the sellers and drinkers in proportion to the alcohol consumed, instead of being met by all taxpayers. From one perspective, the rate at which alcohol taxes should be set is the rate at which costs of alcohol externalities to government and to the community is recovered. This is seldom the case at present.

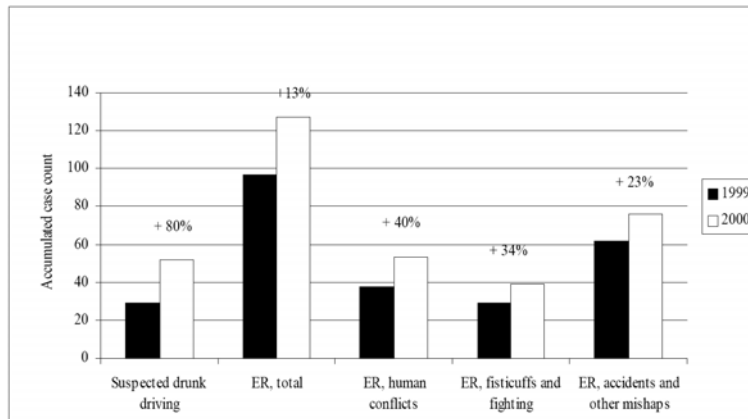
## 5.2 MANAGING THE SALE OF ALCOHOL

**Regulating retail outlets for alcohol** Alcohol can be purchased through "off-premise" or "on-premise" sales. For off-premise sales, where alcohol is consumed elsewhere, regulations can be made on the type, strength and packaging of the alcoholic beverage and the time, costs and location of alcohol sales. For on-premise sales, where alcohol is consumed in the bar or café, regulations can specify drink sizes, disallow discount drink promotions or require on-premise staff to receive training in responsible beverage service. They may also regulate the design of the bar or café. A licence issued by a local or central administration is required in many countries before some types of alcoholic drinks can be sold, either on licensed premises or from off-licences. There are many reasons and benefits for licensing retail sales. One is to make sure that outlets observe other regulations such as age limits and opening times. Another is to ensure that tax is collected on every drop of alcohol sold. When the system is used to restrict the number of outlets, most often the aim is to prevent health and public order problems by limiting the alcohol supply. Licensing systems have also been used to control the standard of licensed premises, for instance to deny licences to places that are perceived to encourage harmful drinking and to grant licences to outlets that appear to encourage less harmful drinking.

One means to regulate sales of alcohol is through government-owned alcohol outlets, retail monopolies, which still operate in the Nordic countries. Off-premise monopoly systems reduce alcohol consumption and alcohol-related problems. Studies of privatisation of sales of alcoholic beverages show substantial increases in consumption. Finland changed from selling beer only in government monopoly stores to selling it also in grocery stores in 1968. In the following year, alcohol consumption increased by 46%. In the following five years, mortality from liver cirrhosis increased by 50%, hospital admissions for alcoholic psychosis increased by 110% for men and 130% for women, and arrests for drunkenness increased by 80% for men and 160% for women. Total alcohol consumption in Sweden was substantially higher when medium-strength beer could be purchased in grocery stores between 1965 and 1977, rather than only in state monopoly stores.

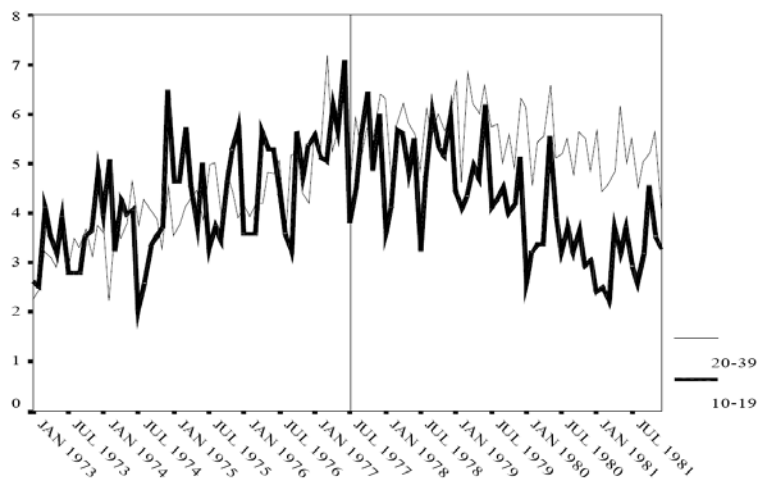
**Number of retail outlets/outlet density** Outlet density refers to the number of outlets available for the retail purchase of alcohol. The smaller the number of outlets for alcoholic beverages, the greater the difficulty in obtaining alcohol, a situation that is likely to deter alcohol use and problems. Recent years have seen the transformation of the night-time economy, for example, in British cities and towns with an increase in the number of licenses, and with older pubs being replaced by large branded drinking warehouses run by national or international chains. In Manchester, the capacity of licensed premises increased by 240% between 1998 and 2001, whilst the number of assaults reported to the police increased by 225% between 1997 and 2001.

**Hours and days of retail sale** A number of studies have indicated that although changing either hours or days of alcohol sale can redistribute the times at which many alcohol related crashes and violent events related to alcohol take place, it does so at the cost of an overall increase in problems. Around-the-clock opening in Reykjavik, for instance, produced net increases in police work, in emergency room admissions and in drink-driving cases, Figure 18.



**Figure 18** Iceland: impact of 24 hour opening of bars and restaurants<sup>29</sup>

There is also evidence that restricting days and hours of sale reduces problems. In the 1980s Sweden re-instituted Saturday closing for spirits and wine off-premise sales after studies showed that Saturday sales were associated with increased rates of domestic violence and public drunkenness, Figure 19. Some 20 years later, when Saturday opening of government alcohol stores was re-instituted, there was a 3.6% increase in alcohol sales.



**Figure 19** Impact of abolition of beer purchases in grocery stores on hospitalizations for alcohol intoxication/100,000 people, Sweden<sup>30</sup>

**Sales to minors** Almost all countries legally restrict alcohol sales to minors. There is very strong evidence that changes in minimum drinking age laws can substantially

<sup>29</sup> Ragnarsdottir, T., Kjartansdottir, A. and Davidsdottir, S. (2002) Effect of extended alcohol serving hours in Reykjavik, Iceland. In: Room, R., ed. *The Effects of Nordic Alcohol Policies*, pp. 145– 154. NAD Publication 42. Helsinki: Nordic Council for Alcohol and Drug Research.

<sup>30</sup> Olsson O. and Wikström P.H. (1982) Effects of the experimental Saturday closing of liquor retail stores in Sweden. *Contemporary Drug Problems* 11, 325-353.

effect youth drinking and alcohol-related harm, particularly road traffic accidents; however, the full benefits of a higher drinking age are only realized if the law is enforced.

### **5.3 RE-STRUCTURE ADVERTISING CONTROLS**

Beverage alcohol is prominent among the many branded consumer goods that young people, in particular, increasingly use as a way of signalling their identity and place in the world. The producers and marketers of beverage alcohol, many of whom are global players, use sophisticated promotional practices to target specific groups such as those starting to drink, regular young drinkers and established young drinkers. This marketing utilizes multiple channels (youth radio, television, events, websites, mobile phones) and diverse modalities (advertising, sponsorship, branding). Such marketing of alcohol to young people is at the forefront of what is termed post-modern marketing. Advertising and branding are crafted to mirror and express dominant representations of youth culture and lifestyles. Promotion is never static, even in established markets, as new cohorts of young people become available as targets for marketing activity on a continual basis as they mature. Market segmentation and targeting is used by the alcohol industry to ensure that significant amounts of advertising are placed where youth are more likely to be exposed to it than adults. Paid placements of products in films, television, books, and video games is another way to embed alcoholic beverages in the daily lives of young people.

The rapid rise of information technology and, in particular, the Internet has given manufacturers a new promotional opportunity. Commercial alcohol web sites are easily accessible to youth, and are often accessed from search engines through non-related key word searches for games, entertainment, music, contests, and free screensavers. Content analyses of web sites that are registered to large alcohol companies reveal that young drinkers are targeted through a glorification of youth culture that offers humour, hip language, interactive games and contests, audio downloads of rock music, and community-building chat rooms and message boards.

Grass-roots level marketing has also increased during the 1990s through the use of technologies such as the Internet, the adoption of racial, ethnic, and other holidays and celebrations and the expansion of sponsorship from sporting events to popular music concerts as alcohol marketing opportunities, to events in which alcohol is often a central part of the activities, thereby embedding products in young people's lifestyles and daily practices.

Commercial sponsorship has expanded greatly since the 1980's, led by the tobacco industry, but with the alcohol industry in second place. As a result, alcohol sponsorship has become common across Europe in all the key areas of youth culture: music, sport, dance, film and television.

#### **Content of advertisements**

There is an enormous wealth of evidence that the content of advertisements increases positive attitudes and beliefs about alcohol amongst young people. In addition, the content of advertisements increases expectancies about the use of alcohol amongst young people and the role of alcohol in their lives. Young people are particularly drawn to elements of music, characters, story and humour. Young people who like advertisement believe that positive consequences of drinking are more likely, their peers drink more frequently, and their peers approve more of drinking. These beliefs interact to produce a greater likelihood of drinking, or of intention to drink in the near future.

### **Volume of advertisements**

There is an increasing amount of evidence that shows that the volume of advertisements increases the likelihood of young people starting to drink, the amount they drink, and the amount they drink on any one occasion. These findings are similar to the impact of advertising on smoking and eating behaviour.

- Amongst Belgian secondary school children, more exposure to television viewing and to music videos in 2003 were both independently associated with more alcohol consumed whilst going out in 2004<sup>31</sup>.
- Amongst seventh grade South Dakota (US) school children, exposure to in-store beer displays predicted drinking onset in the next two years amongst non-drinkers, and exposure to alcohol advertisements in magazines or beer stands at sports or music events predicted greater frequency of drinking amongst drinkers two years later<sup>32</sup>.
- Amongst Los Angeles (US) youth, if a 11-12 year old, compared with the average, watched 60% more alcohol advertisements on TV, one year later, they were 44% more likely to have used beer, 34% more likely to have ever used wine/liquor, and 26% more likely to have had 3 or more drinks on one occasion<sup>33</sup>.
- Amongst American 15-26 year olds (who at baseline, on average, saw 23 advertisements per month, were exposed to \$3.4 per adult worth of advertisements per year, and who consumed 38.5 drinks per month), 21 months after baseline, for every 4% more alcohol advertisements seen on TV, radio, billboards and in magazines at baseline, they drank 1% more drinks per month, and for every 15% more exposure in their media market on alcohol advertising, they drank 3% more drinks per month<sup>34</sup>.

### **Self-regulating advertisements**

In some countries, there is a reliance on 'self regulation' of alcohol marketing - voluntary systems implemented by the advertising, media and alcohol producing industries, and promoted by the industries as the most appropriate approach. There is no scientific evidence whatsoever that tests the effectiveness of self-regulation or shows that it works, but there is considerable documentation and experience that shows that these voluntary systems do not prevent the kind of marketing which has an impact on younger people and that these systems result in pervasive marketing of concern to public health and the community. Self-regulation can work to the extent that there is a current and credible threat of regulation by government, and, unless industry processes related to alcohol advertising standards come under a legal framework, and are monitored and reviewed by a government agency, governments may find that allowing industry self-regulation results in loss of policy control of the marketing of a product that impacts heavily on public health.

There are good examples of regulations on alcohol marketing in some countries. France's Loi Evin is one such model which bans most advertising and sponsorship and restricts permitted advertising to description of the product without any of the messages which make advertising particularly attractive to younger people. When the Loi Evin was challenged in the European Court of Justice, it was upheld, noting

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<sup>31</sup> Van Den Bluck, J and Beullens, K. (2005) television and music video exposure and adolescent alcohol use while going out. *Alcohol and Alcoholism* 2005 40(3):249-253.

<sup>32</sup> Ellickson PL; Collins RL; Hambarsoomians K; McCaffrey DF (2005). Does alcohol advertising promote adolescent drinking? Results from a longitudinal assessment. *Addiction* Feb;100(2):235-46.

<sup>33</sup> Stacy AW, Zogg JB, Unger JB, Dent CW. (2004). Exposure to televised alcohol ads and subsequent adolescent alcohol use. *Am J Health Behav.*28:498-509.

<sup>34</sup> Snyder LB, Hamilton M, Fleming-Milici F, *et al.* (2002). The effect of alcohol advertising on youth 15-26 years old. *Alcohol Clin Exp Res* 26(6):900-6.

that it is in fact undeniable that advertising acts as an encouragement to consumption; the French rules on TV advertising are appropriate to ensure their aim of protecting public health; and they do not go beyond what is necessary to achieve such an objective.

#### **5.4 LOWER BLOOD ALCOHOL LEVELS AND IMPLEMENT RANDOM BREATH TESTING**

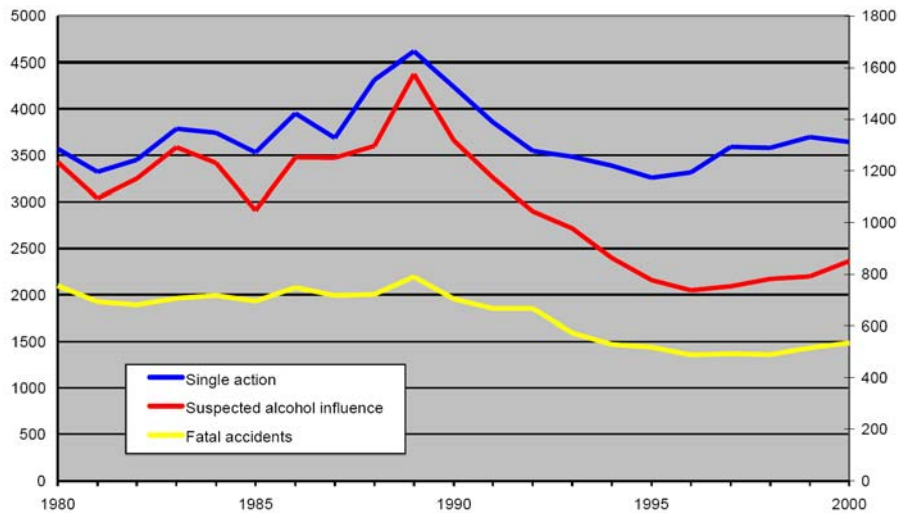
The risk of drinking and driving increases with both the amount of alcohol consumed and the frequency of high volume drinking occasions, and blood alcohol levels. Impairment in driving skills begins with any departure from a zero blood alcohol level. Comparison of blood alcohol levels (BALs) of drivers in accidents with the BALs of drivers not involved in accidents find that male and female drivers at all ages who had BALs between 0.2g/l and 0.49g/l had at least a three times greater risk of dying in a single vehicle crash. The risk increased to at least 6 times with a BAL between 0.5g/L and 0.79g/L and 11 times with a BAL between 0.8g/l and 0.99 g/L (Zador *et al.* 2000).

More than 1 in 3 of the 40,000 European road traffic fatalities each year is due to alcohol. These drink-driving deaths are not equally split between genders, with 15,000 male deaths compared to 2,000 deaths for females.

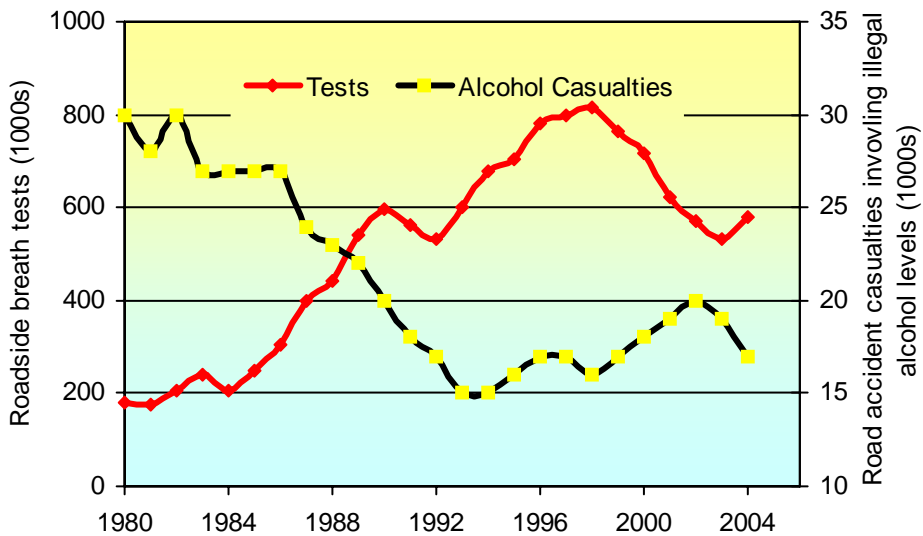
In 2001, the European Commission called for all Member States to adopt a BAL of 0.5g/L lowered to 0.2g/L for inexperienced, two-wheel, large vehicle or dangerous goods drivers, and random breath testing so that everyone is checked every 3 years on average. Take-up of the recommendation is supported by the European Road Safety Action Programme, while the Commission has said that it will propose a Directive if insufficient progress is made towards a 50% reduction in road deaths by the year 2010. Several other recent moves include efforts to tackle drink-driving, including harmonized penalties and the exchange of best practice.

Measures to reduce casualties from drinking-driving are among the most heavily researched strategies to reduce alcohol-related problems. Establishing a maximum blood-alcohol level (BAL) for driving is a well-established and widely diffused drinking-driving countermeasure. Over the years, the level specified as maximum has been lowered in a number of countries, and is as low as zero or 0.2g/l in a number of countries, and 0.5g/l or lower in most countries in Europe. Both establishing a BAL and lowering it are effective in reducing drinking-driving casualties, Figure 20.

There is also convincing evidence that both intensive random breath testing, where police regularly stop drivers on a random basis to check their BAL, and sobriety checkpoints, where all cars are stopped and drivers suspected of drinking driving are breath-tested, reduce alcohol-related injuries and fatalities, Figure 21.



**Figure 20** Reductions in single accidents (left axis, n), suspected driving under the influence of alcohol and fatal accidents (right axis, n) following the reduction of the BAL from 0.5g/l to 0.2g/L in Sweden in 1990<sup>35</sup>



**Figure 21** Inverse relationship between number of roadside breath tests and number of roadside casualties involving illegal alcohol levels, England<sup>36</sup>

Setting lower BALs (including a zero level) for young or novice drivers; administrative driver's license suspension for a driver caught with a positive BAL particularly in legal systems in which a criminal drinking-driver case may be delayed or successfully fought by a defence lawyer; and the use of an ignition interlock, a mechanical device

<sup>35</sup> Sporre, T. (2001). Drunken driving. [http://www.bra.se/extra/measurepoint/?module\\_instance=4&name=18.%20Drunken%20driving&url=/dy\\_namaster/file\\_archive/050119/8aee90e1fc71757489e3a12ecc82dd/02022121991.pdf](http://www.bra.se/extra/measurepoint/?module_instance=4&name=18.%20Drunken%20driving&url=/dy_namaster/file_archive/050119/8aee90e1fc71757489e3a12ecc82dd/02022121991.pdf)

<sup>36</sup> The Information Centre (2006). Statistics on alcohol: England, 2006. <http://www.ic.nhs.uk/pubs/alcoholeng2006>

which does not allow a car to be driven by a driver with a BAL above a low level, for reducing repeat infractions by convicted drinking drivers are all effective in reducing drink driving casualties. It should also be noted that several other alcohol policy measures, such as minimum age laws for the purchase of alcohol are effective in reducing drinking driving casualties, and thus might also be considered drinking-driving countermeasures.

Finally, there are a number of measures that have shown to be not effective in reducing drinking and driving. These include school-based educational courses and designated drivers and ride services, such as the BOB campaign. Further, no study has evaluated whether the use of designated drivers actually decreases alcohol-related motor vehicle-related injuries. Although the BALs of designated drivers are generally lower than those of their passengers they are still often higher than the legal limit for drinking and driving. Further, an increase in passenger alcohol consumption is often found when a designated driver is available.

## 5.5 RE-DIRECT THE INVESTMENT OF EDUCATIONAL PROGRAMMES

A variety of educational approaches have been used in an attempt to reduce the harm done by alcohol, including: education of younger people in classroom settings; information campaigns using mass media, including the use of drinking guidelines; school based activity carried out as part of school plus family initiatives and as part of community action projects; and community initiatives aimed to challenge norms around alcohol consumption and distribution. In addition, educational approaches have been used to reinforce community awareness of the problems created by alcohol use and to prepare the ground for specific interventions.

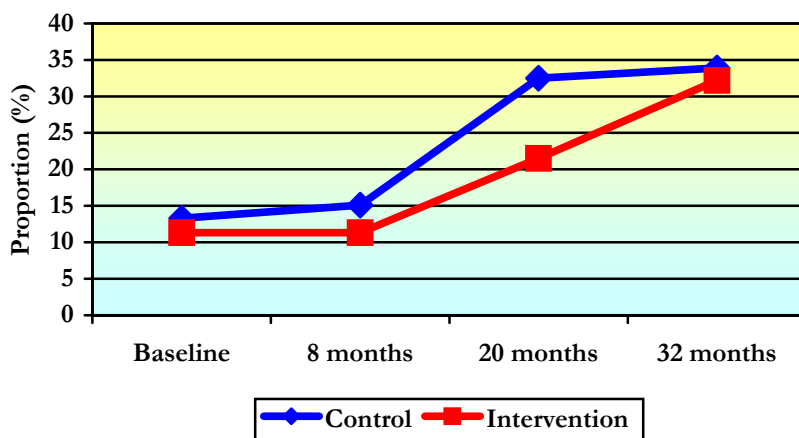
Whilst the provision of information and persuasion to reduce alcohol related harm might seem appealing, particularly in relation to younger people, it is unlikely to achieve sustained behavioural change in an environment in which many competing messages are received in the form of marketing and social norms supporting drinking, and in which alcohol is readily available. Many careful systematic reviews have evaluated school based education which aimed to reduce alcohol related harm, and found that classroom based education is not an effective intervention to reduce alcohol related harm; although there is evidence of positive effects on increased knowledge about alcohol and in improved attitudes, there is no evidence for a sustained effect on behaviour, Table 3.

**Table 3** Effectiveness of primary prevention programmes for young people<sup>37</sup>

Follow-up:	Partially effective	Ineffective	“Negative” Effect
Short-term (1 year or less)	14	23	3
Medium-term (1-3 years)	13	19	2
Long-term (over 3 years)	3	6	0

<sup>37</sup> Foxcroft DR, Ireland D, Lister-Sharp DJ, Lowe G, Breen R. (2003). Longer-term primary prevention for alcohol misuse in young people: a systematic review. *Addiction*; 98: 397-411.

A good example of a well-designed study is the School Health and Alcohol Harm Reduction Project (SHAHRP study) from Australia, which aimed to reduce alcohol-related harm in secondary school students. The study found that the intervention group (which received eight to ten 40 to 60 minute lessons on skill-based activities to minimize harm at age 13 years, and twelve further skills based activities delivered over 5-7 weeks at age 14 years) consumed significantly less alcohol at 8-month follow-up (31% difference), and were less likely to consume to risky levels (26% difference), by 17 months after the intervention, the total amount of alcohol consumed by intervention and comparison groups had lessened to a 9% difference and the difference in risky drinking to 4% Figure 22.



**Figure 22** SHAHRP study. Differences in risky drinking between control and intervention groups<sup>38</sup>

In general, public information campaigns are also an ineffective antidote to the high quality, pro-drinking messages that appear far more frequently in the media. Further, counter advertising (a variant of public information campaigns which provides information about a product, its effects and the industry that promotes it in order to decrease its appeal and use) has inconclusive effects. The exception to these rather negative effects is the evidence for the impact of mass media campaigns to reduce drinking and driving, particularly in jurisdictions with strong policies in place concerning drinking and driving.

Whilst drinking guidelines have been used in a number of countries, there have been no evaluations that find an impact of these guidelines on alcohol related harm. The United Kingdom's 'sensible drinking guidelines' when relied upon as a key prevention strategy in a liberalizing policy environment failed to deter increases in alcohol consumption.

In a number of countries, the alcohol industry has engaged in 'responsibility advertising'. However, these advertisements are often ambiguous, and young people's evaluative responses about the brewers who placed the advertisements are predominantly favourable, while interpretations taken from the advertisement are mostly pro-drinking.

In contrast to the rather negative picture of the impact of educational approaches, there is evidence that supports combining school and community interventions, in

<sup>38</sup> McBride, N., Farrington, F., Midford, R., Meulners, L. and Phillips, M. (2004). Harm minimization in school drug education: final results of the School Health and Alcohol Harm Reduction Project (SHAHRP). *Addiction* 99 278-291.



part because the community interventions may be successful in restricting access to alcohol by young people. An important component of community action programmes which has been shown to impact on young peoples' drinking and alcohol related harm such as traffic crashes and violence is media advocacy. This can educate the public and key stakeholders within the community by increasing the status of alcohol on the political and public agenda and reframing the solution to alcohol related problems to include a co-ordinated approach by relevant sectors such as health, enforcement, non-governmental organizations, and municipal authorities. Thus, education and public information approaches can be used to mobilise public support for prevention approaches that have demonstrated effectiveness and media advocacy can also be used to support a shift in public opinion for policy changes.

In summary, although there are individual examples of the beneficial impact of school-based education, systematic reviews find that the majority of well-evaluated studies show no impact even in the short-term. A policy that fails more often than not cannot be considered an effective policy option. There is considerable experience of what might be best practice in school-based education programmes, but currently unconvincing evidence for their effectiveness. This is not to imply that education programmes should not be delivered, since all people do need to be informed about the use of alcohol and the harm done by it, but school based education should not be seen as the only and simple answer to reduce the harm done by alcohol. Thus, educational programmes should not be implemented in isolation as an alcohol policy measure, or with the sole purpose of reducing the harm done by alcohol, but rather as a measure to reinforce awareness of the problems created by alcohol and to prepare the ground for specific interventions and policy changes.

## 5.6 DRINKING CONTEXT

Licensed drinking environments are associated with drunkenness, drink-driving and problem behaviours such as aggression and violence, with some licensed premises being associated with a disproportionate amount of harm.

**Responsible beverage service** Nearly all evaluations in training bar staff in responsible beverage service when backed up with enforcement have demonstrated improved knowledge and attitudes among participants, although this wears off over time. These studies have also shown some effects on serving practices, but not always. Whilst servers are usually willing to intervene with customers who are visibly intoxicated, they generally will not intervene with individuals solely on the basis of the customer's estimated blood alcohol concentration (BAC) or number of drinks consumed. In terms of the effects on customer intoxication, several studies have found that server training results in lower BAC levels of customers generally and fewer customers with high BAC levels. Studies of the impact of adhering to bar policies for avoiding intoxication have also found modest effects in reducing heavy consumption and high risk drinking, but were not as successful as originally expected. The impact of responsible beverage service is greatly enhanced when there is active, but ongoing enforcement of laws prohibiting sale of alcohol to intoxicated customers. Enforcement also seems to be a necessary component for voluntary codes of responsible beverage service to be successful.

Geographical analysis can be used to identify specific drinking localities and problems related to alcohol, particularly motor vehicle crashes, pedestrian injuries, and violence. This allows targeted public health and law enforcement approaches.

**Other harm reduction approaches** The risks of aggression, violence and injury vary according to the physical bar-room environment and the behaviour and communication skills of bar staff. Accordingly, interventions that focus on changing the barroom environment (e.g. changes in rules or policies related to games, management of queues and re-entry to the bar, modifications of the social or physical environment and improvement in staff communication and intervention skills) have been shown to be effective in reducing harms from drinking in these settings, without necessarily altering overall consumption levels. It is well-established that intentional and unintentional injuries from broken drinking vessels are relatively common in licensed premises. This relationship led to the logical suggestion that replacing conventional glass vessels with tempered glass should reduce injuries. However, a randomised controlled trial comparing conventional glassware with tempered (toughened) glassware reported increased injuries to staff from accidental breakage of tempered glassware. As yet, there is no research on the impact of tempered glass on intentional injuries to patrons.

### **Community mobilization approaches**

Community based prevention programmes can be effective in reducing drinking and driving, alcohol related traffic fatalities and assault injuries. Community mobilization has been used to raise awareness of problems associated with on-premise drinking, develop specific solutions to problems, and pressure bar owners to recognize that they have a responsibility to the community in terms of such bar-related issues as noise level and customer behaviour. Evaluation results from community mobilization approaches as well as documentation from grassroots projects suggest that community mobilization can be successful at reducing aggression and other problems related to drinking in licensed premises.

A review of ten community-based prevention trials which have sought to reduce harm from alcohol found that strategies included education and information campaigns, media advocacy, counter-advertising and health promotion, controls on selling and consumption venues and other regulations reducing access to alcohol, enhanced law enforcement and surveillance, and community organization and coalition development. Interventions which showed promise were those that paid particular attention to controls on access, included the environmental contexts of where the products are sold and distributed, and involved enforcement of public health polices.

Community and neighbourhood characteristics are important in moderating the pricing and promotion of beer, as well as reducing binge drinking. Communities with higher enforcement of minimum purchase ages have lower rates of alcohol use and binge drinking. Community action projects can mobilize awareness and concern about alcohol-related harm. Social capital as measured by aggregate reports of student volunteerism is associated with a decreased risk of binge drinking, drunkenness and alcohol-related harm, and as measured by high trust is related to a reduced risk of illegally produced and purchased alcohol.

## **5.7 ADVICE AND TREATMENT**

Healthcare-based interventions for hazardous and harmful alcohol consumption reduce alcohol consumption, as well as demonstrating reductions in alcohol related problems and alcohol-related mortality. The community based Malmö study, undertaken during the 1970s, demonstrated that under the right conditions, the

effects can be dramatic<sup>39</sup>. An intervention for heavy drinkers resulted in half the deaths that occurred in the control group without the intervention at six year follow-up.

There is extensive evidence that shows the effectiveness and cost-effectiveness of opportunistic screening and brief interventions for persons with hazardous and harmful alcohol use in the absence of severe dependence. If these programs were widely adopted in health care systems, the population impact on excessive drinking could be significant.

For people with more severe alcohol dependence and related problems, a wide variety of specialized treatment approaches have been evaluated, including behavioural, psychosocial, and pharmacological interventions of varying intensities in both community and residential settings. The evidence shows that individuals exposed to these treatments, especially when delivered in a timely manner, achieve better outcomes than those not receiving treatment. Further, for the average person, the effectiveness of these treatments tends to be comparable regardless of intensity, modality or setting.

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<sup>39</sup> Kristenson, H., Ohlin, M.B., Hultin-Nosslin, E., Trell, E. and Hood, B. (1983). Identification and intervention of heavy drinking in middle-aged men. Results and follow-up of 24-60 months of long-term study with randomised controls. *Alcoholism: clinical and experimental research* 7 203-209.



## **6. ALCOHOL AS AN ECONOMIC COMMODITY**

Alcohol is a major economic commodity that is associated with substantial governmental tax receipts and considerable consumer expenditure. Indeed, Europe can be considered the centre of the global alcohol industry, acting as both the largest market and the major producer of alcoholic drinks. As for many other consumer industries in the 'globalized era', however, the production of alcoholic drinks has increasingly become an international arena dominated by drinks brands owned by multinational companies (MNCs).

### **6.1 ALCOHOL PRODUCTION**

Across all these beverages, the EU is the world's major source of alcohol, responsible for a quarter of the world's total, equivalent to over 50% more than either China or the US. Despite this considerable role, the current position still represents a decline in global importance given that 5 EU countries alone accounted for a third of the world's alcohol production in 1961 (Germany, France, Italy, Spain and the UK). The change has not come about through a drop in production levels, however; instead, EU production in the past 40 years has risen by 150% (despite the more recent drop in wine production), but this is overtaken by the 250% rise in the rest of the world's recorded production (possibly partly due to increased industrial production and reduced unrecorded home production).

### **6.2 TRADE**

Europe is even more central to the global alcohol economy when it comes to trade, with more than 70% of all alcohol exports in the world coming from European countries. The six countries worldwide exporting the most alcohol are also all European – when combined, the exports from France, the UK, Italy, Spain, the Netherlands and Germany (in order) alone make up over 60% of the world's total. More beer is exported from the Netherlands than any other country in the world, although exports are marginally less concentrated for beer than for other drinks types. For both wine and spirits, the single leading exporter (France for wine, the UK for spirits) and three-quarters of the world's exports are European

This alone gives a slightly misleading impression of Europe taken as a whole, as just over half of the exports go elsewhere within the EU rather than the rest of the world. Nevertheless, €12bn of alcohol was exported from the EU as a whole to the rest of the world in 2002, principally made up of wine (€4.4bn) and spirits (€5.4bn). More wine is imported from outside the EU than any other drink, with only a negligible amount of beer coming from outside the EU (€2.3bn for wine, €0.1bn for beer).

Taking the European Union as a whole, the trade in alcohol accounts for 1.3% of all exports and 0.3% of all imports, thereby contributing €8.9bn to the goods account balance, with such trade not necessarily affected by European and domestic policy to reduce the harm done by alcohol. Exports are concentrated in the EU15 to a greater extent than imports, which explains the slight trade deficit for alcohol in the EU10.

### **6.3 SMUGGLING**

Beneath the level of official records, there is also an illegal trade in alcohol in Europe, often by diverting goods that are held in 'duty suspension'. By its nature, it is

obviously difficult to obtain reliable statistics on illicit trade, which makes estimating the scale of smuggling in Europe difficult. The only existing estimate for the EU15 comes from the European High Level Group on Fraud, which estimated that €1.5bn was lost due to fraud in 1996, equivalent to around 8% of the total alcohol excise duty at the time. Given the difficulties of evaluating the extent of smuggling, it is difficult to monitor any trends in the illegal trade. Although the single market and increased passenger movement may be expected to increase the possibilities for fraud, the indications are that there are different trends in Europe – for example, Ireland, the UK and France believe they have experienced increased diversion fraud, while Portugal has seen more duty evasion.

Although any heavily taxed product will be susceptible to fraudulent activity, this does not mean that reduced, uniform tax rates will reduce the level of smuggling. In fact, smuggling of tobacco (which has been analysed in more detail) was more likely to occur from the expensive north of Europe to the cheaper south, probably related to less ‘transparent’ governments in Southern Europe.

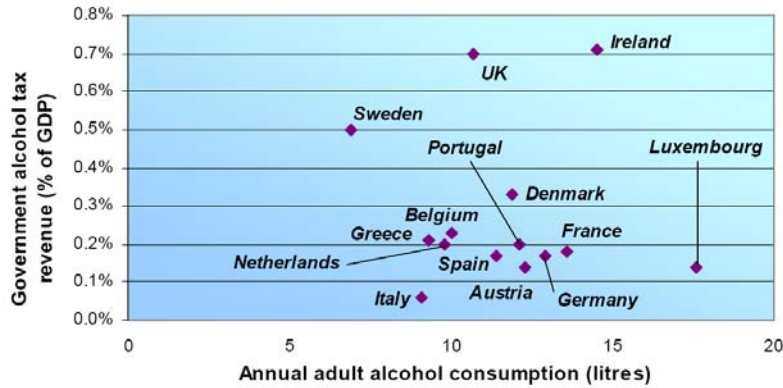
#### **6.4 CROSS BORDER TRADE**

Alongside tax losses through illegal actions, domestic taxes can be legally avoided if drinks are bought abroad and transported back to their home country by travelling individuals themselves. This is particularly important in areas of Europe where there are large price differentials across small distances. Cross-border shopping is a sizeable component of consumption in several countries – for example, cross-border purchases in Denmark and Sweden accounted for over 15% of all alcohol consumed in 2000, a figure that has risen to over 25% in Sweden in 2004. The only comparative data comes from the ECAS survey, which found that at least 1 in 6 tourists in each country returned with alcohol purchased abroad – rising to over half of tourists in the higher-tax countries such as the UK, Finland and Sweden averaging two litres or more of pure alcohol per importer.

#### **6.5 TAX REVENUE**

While it may be predicted that the tax from alcohol depends on the total amount of alcohol drunk in a country, the evidence suggests that this is not the case. There is no apparent correlation between the revenue from alcohol-specific taxes (as a % of government revenue or % of GDP) and per capita consumption, Figure 23. The best predictors of the importance of alcohol-specific taxes are unsurprisingly the average alcohol tax rates, which relate very closely to the income from alcohol taxes.

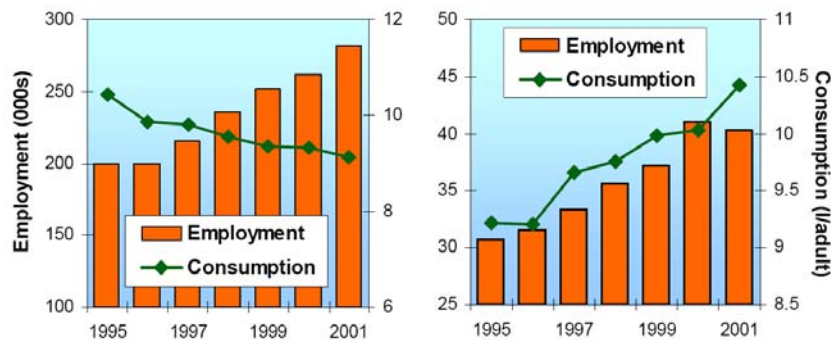
In general, alcohol tax levels are well below their revenue maximising potential and it has been argued that taxes should be shifted from labour to pollution (social costs) to contribute to the EU goals of increasing employment and reducing negative environmental (health) impacts in a cost-effective way, with, in addition, new revenues being allocated to specific funds to be used for financing measures to lessen or offset external costs.



**Figure 23** Alcohol consumption and alcohol tax revenue in the EU15<sup>40</sup>

## 6.6 ALCOHOL AND JOBS

Alcohol is also associated with a number of jobs, including over three-quarters of a million in drinks production (mainly wine). Further jobs are related to alcohol elsewhere in the supply chain, e.g. in pubs or shops. However, the size of the industry is not necessarily a good guide to the economic impact of alcohol policies – for example, trends in alcohol consumption show no crude correlation with trends in the number of jobs in associated areas such as hotels, restaurants, and bars, suggesting that the effect of changes in consumption may be relatively weak, Figure 24. A reduction in spending on alcohol would also be expected to free consumer funds to be spent on other areas, with the economic impact depending on the exact nature of the new expenditure. While further research needs to be done on this issue, current evidence from alcohol and other sectors suggests that declining consumption may not necessarily lead to job losses in the economy as a whole.



**Figure 24** Employment in bars in Italy, left, and employment in hotels, restaurants and bars in Finland, right, demonstrating the heterogeneity of links of consumption to jobs<sup>40</sup>

<sup>40</sup> Anderson, P. & Baumberg, B. (2006) *Alcohol in Europe: A Public Health Perspective -- Report to the European Commission*. London: Institute of Alcohol Studies. ([http://ec.europa.eu/health-eu/news\\_alcoholineurope\\_en.htm](http://ec.europa.eu/health-eu/news_alcoholineurope_en.htm))





## 7. TRADE LAW AND ALCOHOL POLICY

As with any other economic commodity, policies dealing with alcohol must fit with the legal obligations made by states to each other within a body of international treaties that have built up since the end of the Second World War. These commitments reduce the scope for states to enact protectionist policies, but what this means for public health policy has generally been interpreted in two ways. Some commentators – in particular those from health or social issue backgrounds – have expressed concerns about how trade rules (particularly on a global level) may constrain health or social policy within a trading system that prioritizes commercial goals above health. Others – mainly from business, governmental or economic spheres – have responded with confidence that governments are safe to pursue health aims as long as they follow the rules when doing so. The reality, inevitably, is more complicated than either view.

### 7.1 WORLD TRADE ORGANIZATION (WTO)

This includes a variety of commitments built up over several treaties, in particular the General Agreement on Tariffs and Trade (GATT) dealing with goods, and the General Agreement on Trade in Services (GATS) that focuses on services. The GATS in particular has aroused much debate due to its potential scope, as it defines 'services' in a way that incorporates most types of human activity. For example, although alcohol is a good and covered by GATT, alcohol policy could be far more affected by service commitments that cover the production, wholesale, distribution, retail and advertising of alcohol.

Some observers have argued that for legal psychoactive substances such as alcohol, the objectives of the WTO are at odds with public health – “the promise of trade liberalization under the WTO is to reduce costs, increase choice, and expand the availability of consumer products in its 143 member countries. However, to varying extents members also pursue policies to restrict choice, reduce the availability, and increase the price of alcohol, with a view to reducing consumption—particularly among young people”. In practice, this could be interpreted that alcohol monopolies, certain tax structures, advertising bans, and controls over imports will all be ruled counter to world trade law. Even from an optimistic viewpoint, “*the best outcome that can be hoped for when any regulation becomes the subject of a trade complaint is that it will not be struck down*”.

To what extent this is true depends almost entirely on the interpretation of one part of the treaties – GATT Article XX and GATS Article XIV. These state that nothing in either agreement “*shall be construed to prevent the adoption or enforcement by any contracting party of measures...necessary to protect...human health,*” as long as these measures are not a “*disguised restriction on trade*” or “*unjustifiable discrimination.*” It is up to the country defending a health policy to show that there is no 'less trade restrictive' alternative that would have the same effect, and that the policy is being used in good faith – although the value of a goal like human life is unquestioned.

Where a measure is very important for an aim such as health, it will be maintained by the WTO even if it is severely disruptive to trade. However, where the measure is less than indispensable, the burdens of this 'necessity test' are 'substantial and difficult' – which could mean that the defence is not enough to protect health policies in practice.

Past cases can be a useful guide to how far health policies can be defended at the WTO. Few of the cases have been directly for alcohol, and most of those that do exist are about tax systems seemingly designed to favour the locally produced drink. Three other cases under GATT pre-date the WTO, with the US and Canada exchanging complaints in the late 1980s and early 1990s as regards their minimum pricing, taxation and marketing policies – but again, the GATT panel did not have to decide between trade and health interests in any of the cases, even if some of the policies concerned could be argued to be relevant to public health.

Other areas of public health offer more insight into whether the health defence will be enough to defend discriminatory alcohol policies, such as the 1990 Thai Cigarettes case (DS10/R). Here a ban on tobacco imports was struck down on the basis of Market Access after the Thai government failed to demonstrate the laws were necessary for health, despite a WHO intervention during the panel to point out that “multinational tobacco companies had routinely circumvented national restrictions on advertising through indirect advertising and a variety of other techniques” (cited in Howse 2004). However, the panel’s reasoning explicitly allowed a number of other less trade-restrictive tobacco control policies to achieve the same objectives, including an advertising ban, labelling requirements, bans on harmful additives, and a tobacco retail monopoly. Following this ruling, and combined with domestic support, the Thai parliament passed two tobacco control acts in 1992 that reversed the rise in the prevalence of smoking.

This confirms the implications of the discussion above – it is not enough for a health policy to be defended simply because it works; it must also work in a way to disrupt trade as little as possible.

## 7.2 THE EUROPEAN INTERNAL MARKET

Although the binding global commitments of the WTO are potentially important for health policy, by far the greater effect in practice can come from the trade law of the European Union (EU).

### Taxes

Most of the cases relating to alcohol stem from the ‘national treatment’ rule on taxation (article 90 ex 95), which allows no exceptions to be made on health grounds. This means that states are forbidden from discriminating in favour of domestic goods at the expense of those from elsewhere in the EU – which at its simplest, has meant that French and Italian taxes favouring cognac over whisky were ruled illegal some time ago (C-168/78; C-169/78 & C-216/81).

Complications arise when there is uncertainty over whether drinks are ‘similar’, or whether dissimilar drinks types are nevertheless in competition with each other. On similarity, the courts have made clear that fruit and grape wines are similar, while champagne and fruit wines are less clear. Whisky and fruit wines have been found to be dissimilar though, due to a combination of objective criteria (e.g. raw materials, production processes, alcoholic strength) and whether they “*are capable of meeting the same needs from the point of view of consumers*” [C-243/84; “Johnny Walker”]

Perhaps the most famous case interpreting whether products were in competition comes from an examination of wine and beer in the UK in the 1980s. Here the court ruled that “*the tax policy of a Member State must not crystallize existing consumer habits so as to be biased in favour of the competing national industries,*” (the tax policy was also found to be disproportionate to any available criteria). Similarly, the

'cultural use' of a particular drink – in this case, drinking Danish aquavit with meals – has also been decided to be irrelevant for the *potential* competition of this drink with others [C-171/78 & C-68/79]. Even for drinks in competition though, the Johnny Walker case found that there is no protectionist effect “*if a significant proportion of domestic production of alcoholic beverages falls within each of the relevant tax categories.*”

Standardized excise duties are a longstanding goal of the EU, mainly because the combination of a single market together with wide excise variations leads to serious market distortions and lost tax revenue. Tax harmonization became a priority again in the 1980s with the extension of the internal market in the Single European Act, and a number of proposals for harmonized and target rates were put forward.

However, as fiscal policy requires unanimous agreement, the EU alcohol tax regime agreed in 1992 fell a long way short of full harmonization. The first of the two Directives – known as the Structures Directive (92/83/EEC) – detailed the method of calculating duty, the definitions of different products, and some of the derogations (exceptions). The excise rates themselves are detailed in the Approximating Directive (92/84/EEC), but are minimum rates only, with the target rates reduced to a (non-binding) note in the minutes. Wine was subject to no tax at all, leaving this beverage type as effectively un-harmonized.

One way of interpreting this is to see it as an attempt to let the market lead tax harmonization, with private individuals personally bringing back alcohol from abroad to avoid domestic duties. These likely increases in private transfers arise at the same time as a Commission-launched debate on alcohol excise duty rates, which is trying to find some way of reducing competition distortions, or at least to increase the minimum rates in line with inflation (24%) so that they do not become meaningless (COM (2004) 223). However, the EU Member States are still a long way from unanimous agreement on this issue. Many wine-producing countries see a zero tax on wine as essential for the functioning of the Common Agricultural Policy (CAP), especially given endemic problems in the European wine sector in recent years (see below). The higher-tax countries conversely feel that any move – even up-rating the minimum duties – should be conditional on introducing a positive duty for wine. Given the difficulties in satisfying both these views simultaneously, it may be difficult for this long-running problem to be resolved within the current debate.

### **Alcohol monopolies**

EU attempts to reconcile monopolies and non-discrimination date back to the Treaty of Rome, and even by the 1970s, the European Court of Justice (ECJ) had shown that while monopolies are allowable (e.g. case 91/78), exclusive import rights are not ('Manghera', C-59/75). Alcohol monopolies did not form part of the main agenda during the European Economic Area (EEA) accession negotiations, although the eventual 1994 agreement included a note where the countries stressed the importance of their monopoly systems. However, this was a statement of opinion rather than a legal agreement, and soon afterwards a European court ruled against the import rights of the Finnish monopoly. Large parts of the alcohol monopolies in Finland, Norway and Sweden were, therefore, removed, leaving only the off-premise retail monopolies. While this was acceptable to the Commission, it took three further cases to establish that monopolies were legally valid as long as they fulfilled all Treaty requirements “save, however, for restrictions on trade which are inherent in the existence of the monopolies in question”.

## Advertising

For several EU Treaty commitments, restrictions of free trade can be defended on health grounds on similar terms to the WTO articles above. This includes quantitative restrictions (article 30, and has been broadly interpreted cf. C-8/74), the right of establishment (article 46), and services (article 55). As before though, these restrictions must be determined to be proportionate responses; that is, they cannot go beyond what is necessary to fulfill their aim. On one occasion the courts have not fully confirmed the legality of an advertising restriction, when discussing a complete ban on alcohol advertising in print media in Sweden. The issue of whether a complete ban was proportionate was passed back to the Swedish national court – and it was they who ruled against the policy (the Gourmet Foods case, C-405/98).

In three other cases though, the courts have unambiguously supported advertising bans. First, a ban in Catalonia on advertising drinks over 23% absolute volume in public places was upheld with the comment that “*in principle, the [23%] criterion does not appear to be manifestly unreasonable as part of a campaign against alcoholism*” (C-190 and C-176/90). Second, in a celebrated recent case, a French ban on alcohol advertising in ‘bi-national broadcasts’ was upheld (the loi Evin). Most recently of all, the EFTA court affirmed the previous reasoning but left the advertising restrictions with no case to answer on a technicality (E-4/04).

## Agriculture

In the year 2002, €1.5 billion was spent by the European Union in the EU15 supporting the production of wine through the Common Agricultural Policy (CAP) – equivalent to 30 times the entire annual public health budget. The CAP was originally set up in the 1960s to ensure a fair standard of living for farmers and to secure the survival of small farms, although as the nature of the business has changed the objectives have shifted towards environmental and social concerns. Since the enlargement of the EU in 2004, six of the new Member States have also started to receive funds for restructuring vineyards, although the €20m they receive is only a small fraction of the total €450m restructuring budget. The production of wine is an important part of many regional economies in southern Europe, and it has been suggested that the value of wine output may be over 20% of the total value of agricultural output in some regions.

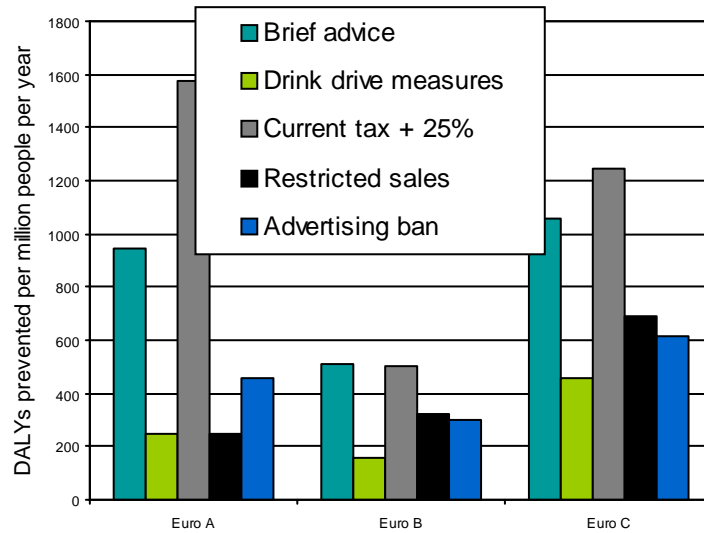
Wine under the CAP has been experiencing problems since the 1970s, with expanding production (and later falling demand) leading to large wine surpluses. Wine policy has, therefore, involved bans on planting vines and distillation measures, with the result that wine production has fallen from an average of around 210m hectolitres to 180m since the early 1980s. Nevertheless, a combination of intensified international competition (including cuts in export subsidies and tariffs due to GATS), a strong Euro, and recent high yields have led to a European surplus that stood at 35.5m hectolitres in 1999-2000, in parallel to a global surplus estimated at 57m hectolitres for 2004. As an emergency measure, the Commission has agreed to pay €145m for crisis distillation in France and Spain, in return for digging up vines and curbing plantings. This can be considered as a withdrawal of alcohol from the market, since the alcohol resulting from crisis distillation can be used as fuel.

The CAP subsidies (including the indirect subsidy of crisis distillation) are likely to have distorted the market in wine, although quantifying this effect has proved difficult (Furlani and *et al.* 2003). The Commission has also admitted that the most recent CAP wine measures have not had the desired effect, and launched a new strategy in 2006 to try and rectify the structural imbalance.

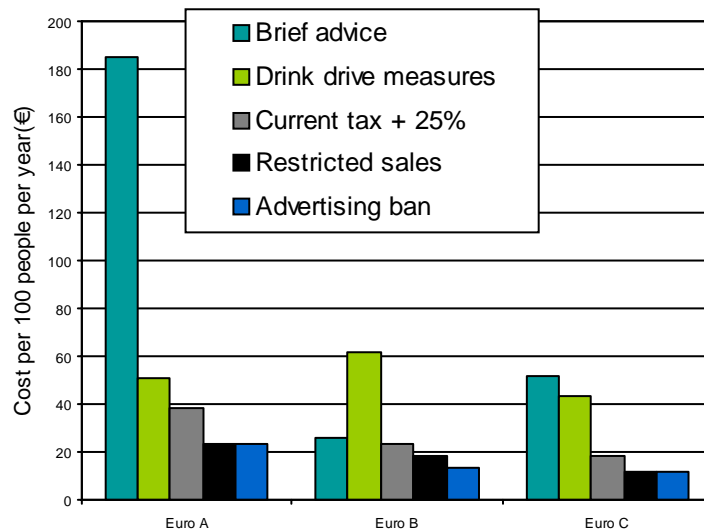
## 8. MAKING ALCOHOL POLICY

### 8.1 COST EFFECTIVENESS OF POLICIES

A summary of the estimated impact of different interventions, (DALYs prevented per million people per year) compared to a Europe with none of these policies is shown in Figure 25, and the estimated costs (Euro per 100 people per year) in Figure 26, for the three regions of the European Union, based on the WHO classification, Table 4.



**Figure 25** The impact of different policy options (DALYs prevented per million people per year) in the three sub-regions of EU25.



**Figure 26** The cost of different policy options (per 100 people per year (€)) in the three sub-regions of EU25.

**Table 4** WHO classification of European Union countries based on mortality rates.

<b>Europe A</b> Very low child and very low adult mortality	<b>Europe B</b> Low child and low adult mortality	<b>Europe C</b> Low child and high adult mortality
Austria Belgium Czech Republic Denmark Finland France Germany Greece Ireland	Italy Luxembourg Malta Netherlands Portugal Slovenia Spain Sweden United Kingdom	Cyprus Poland Slovakia  Estonia Hungary Latvia Lithuania

In all three regions, taxation (current tax levels with a 25% increase in tax, compared to no tax) has the greatest impact in reducing the harm done by alcohol, followed by brief interventions delivered by primary providers to 25% of the at risk population. The three regulatory measures, (taxation, restricted sales and advertising controls) are the cheapest in terms of cost to implement, with drink driving measures and brief interventions being the most expensive. Thus, in all three sub-regions of the European Union, taxation, restricted access, and advertising bans are the most cost-effective policy options.

## 8.2 CURRENT ALCOHOL POLICY IN EUROPE

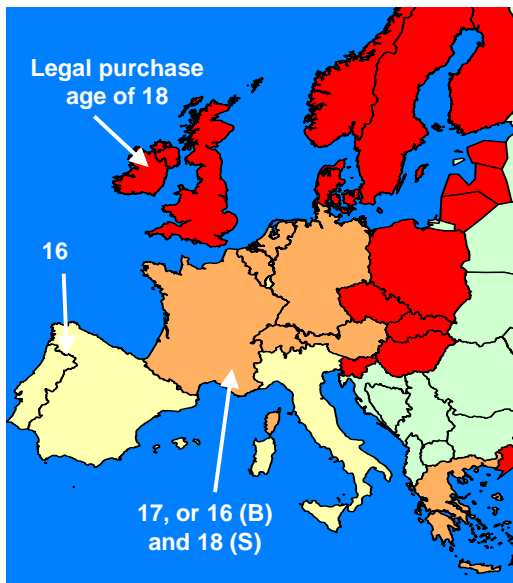
### Drinking and driving

In line with the Commission Recommendation most of the EU15 countries have a maximum Blood Alcohol Concentration (BAC) of no more than 0.5g/L, although the UK, Ireland and Luxembourg continue to have a higher limit. Limits in the EU10 tend to be even lower, with three countries (Czech Republic, Hungary and Slovak Republic, as well as Romania) prohibiting any alcohol in drivers and three more having levels lower than the majority of the EU15. In countries where random breath testing (RBT) is not allowed, 86% of drivers had not been checked in the past three years compared to only 65% elsewhere<sup>41</sup>. The effect was even stronger for drivers' perceptions – in the countries with RBT only 22% of drivers thought they would never be checked, compared to more than double this figure (46%) in the countries without RBT.

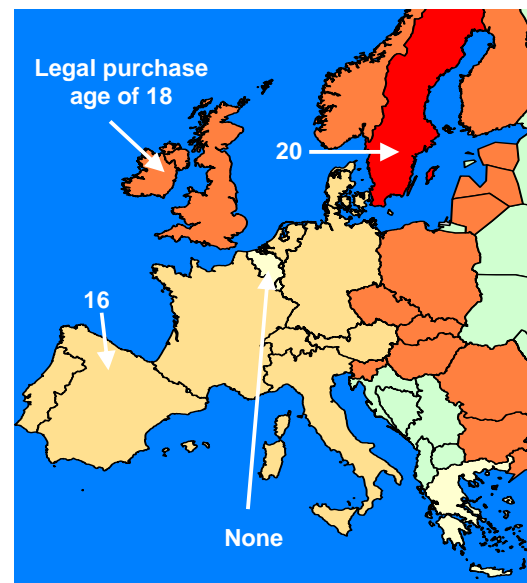
### Age of purchase

The Nordic countries, Denmark, UK, Ireland and the EU10 have a minimum age of 18 to purchase beer in a bar, while the rest of the EU15 opt for a lower age of 16, Figures 27-28. The gap is even more striking for shop sales, with some southern/central countries sometimes not even having a minimum age, compared to the northern countries that put the limit at 18-20 years. This picture changes slightly when buying spirits rather than beer or wine (both on- and off-premise), as this is treated more severely by some of the central European countries leaving only those in the south of Europe with lower ages.

<sup>41</sup> Sardi, G. M. and C. Evers (2004). "Drinking and Driving." *European drivers and road risk: part 1 - reports on principal analyses*, Edited by Sartre. Institut National de Recherche sur les Transports et leur Sécurité INRETS.



**Figure 27** Minimum legal purchase age from bars



**Figure 28** Minimum legal purchase age of beer from shops

### Alcohol marketing

Television adverts for alcohol are subject to legal control in just over half of Europe, although this in the form of a complete ban in only five countries (of which only France and Sweden are in the EU). Voluntary agreements are relatively common in the EU15, but these are not present in the EU10 where many countries have no controls at all. Controlling alcohol advertising in print or on billboards is noticeably less common than for television, with 1 in 3 European states not having any policy on them at all. Most of the uncontrolled advertising environments are found in eastern Europe. Sponsorship controls have tended to be slightly less widespread than those for television advertising, with only seven countries having any legal restrictions on sports sponsorship together with voluntary restrictions in a further five.

### Taxes

The highest average tax rates are found in northern Europe, the Baltic countries, the UK, Ireland and Poland. Conversely, the lowest rates are found in southern and parts of central Europe, with the rest of central and eastern Europe lying in-between. Alcohol-specific taxes do not automatically determine the final price seen by the consumer in each country. Even just within the tax system, all countries also have a general sales tax (VAT) on alcoholic drinks and this can be as low as 7.6% or as high as 25%. Comparing alcohol prices to that of all other goods, Figure 29 shows that a *low* tax rate can coexist with either a high or low relative price of alcohol – but a *high* tax rate tends to produce a high price. In general prices are highest in eastern Europe (except Slovenia), even where the tax rates are relatively low (such as in Bulgaria and Romania). Using 100 to mean that alcohol prices are roughly equivalent to general prices, much of southern and central Europe is less than 90 while virtually the entire eastern area of Europe is between 130 and 190. Of the EU15 countries, only Finland, Ireland and the UK have alcohol prices that would put them in this range (Sweden being just below it).

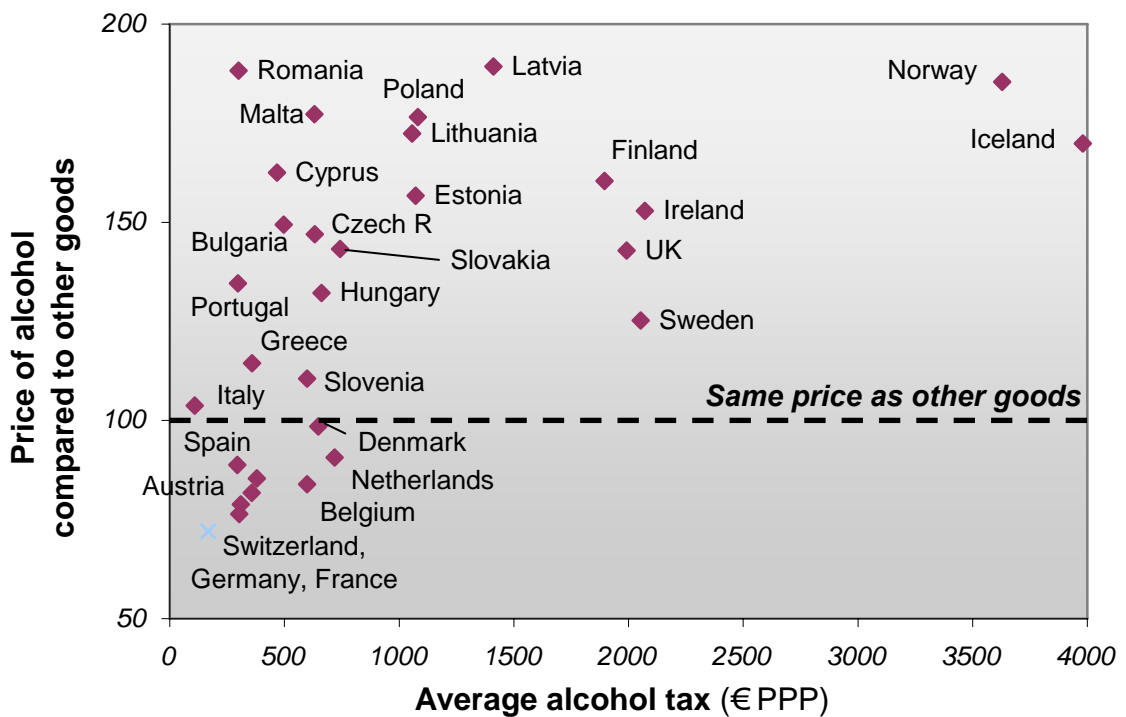


Figure 29 Alcohol taxes and the relative price of alcohol<sup>42</sup>

### Trends in alcohol policy

By the end of the century a degree of harmonisation in alcohol policies was visible, Figure 30. Nearly all countries increased the strength of their alcohol control policies and justified them through health or social aims, with France and Spain seeing the biggest increases. The only exception was Finland, where much of the monopolies had been abandoned and some other restrictions relaxed.

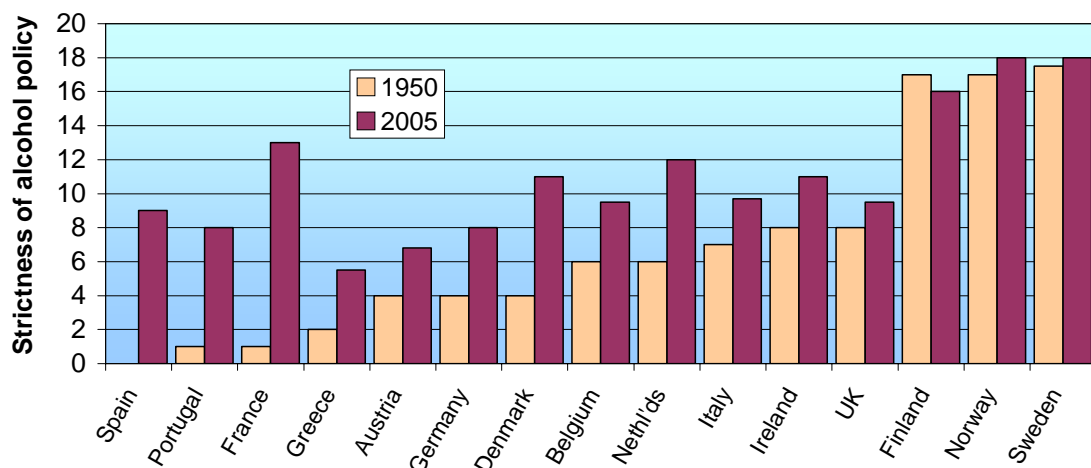


Figure 30 Changes in the strictness of alcohol policy<sup>43</sup>

<sup>42</sup> Anderson, P. & Baumberg, B. (2006) *Alcohol in Europe: A Public Health Perspective -- Report to the European Commission*. London: Institute of Alcohol Studies. ([http://ec.europa.eu/health-eu/news\\_alcoholineurope\\_en.htm](http://ec.europa.eu/health-eu/news_alcoholineurope_en.htm))



### 8.3 ALCOHOL POLICY ACROSS BORDERS

The international level also offers the opportunity for countries to come together in reducing the harm done by alcohol, with such action growing alongside trade-oriented debates during the 20th century.

#### **The World Health organization**

Unsurprisingly, the international body most active on alcohol has been the World Health Organization (WHO), which has passed more than 10 alcohol-related resolutions at its governing World Health Assembly. In 1979, the Assembly noted that *“problems related to alcohol, and particularly to its excessive consumption, rank among the world's major public health problems.”*

A similar sentiment was repeated over 25 years later in 2005, when the Assembly recognized that *“harmful drinking is among the foremost underlying causes of disease, injury, violence – especially domestic violence against women and children – disability, social problems and premature deaths, is associated with mental ill-health, has a serious impact on human welfare affecting individuals, families, communities and society as a whole, and contributes to social and health inequalities”*. Resolution 58.26, which was passed at the World Health Assembly in May 2005, requested the WHO to:

- Strengthen the WHO Secretariat's capacity to support states and reinforce the evidence on which policies work
- Draw up recommendations for effective policies and interventions
- Report to the 2007 Assembly on evidence-based strategies to reduce alcohol-related harm, including a comprehensive assessment of all alcohol-related public health problems
- Strengthen global & regional information systems
- Promote effective policies in health-care settings
- Collaborate with governments, health professionals, NGOs and others
- Consult with industry representatives

The WHO has also brokered the first ever global public health treaty, the Framework Convention on Tobacco Control (FCTC), which entered into force on 28 February 2005. Parties to the FCTC commit to minimum levels of tobacco control, including comprehensive bans on tobacco advertising; health warnings on tobacco packaging covering 30+% of the display areas; protection of citizens from tobacco smoke in workplaces, public transport, and indoor public places; and increased, harmonized tobacco taxes.

Drawing on the experience of the framework convention on tobacco control, several justifications for an international legally binding agreement can be identified. These are (i) to protect consumers from the harm done by alcohol; (ii) the scope of the damage; (iii) substantial harm in most regions of the world; (iv) harm done by alcohol transcending national borders; (v) difficulty of dealing with the harm done by alcohol by countries in isolation; and (vi) lack of any suitable pre-existing convention or other international agreement.

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<sup>43</sup> Anderson, P. & Baumberg, B. (2006) *Alcohol in Europe: A Public Health Perspective -- Report to the European Commission*. London: Institute of Alcohol Studies. ([http://ec.europa.eu/health-eu/news\\_alcoholineurope\\_en.htm](http://ec.europa.eu/health-eu/news_alcoholineurope_en.htm))

It would be technically possible to manage alcohol through an international agreement by adding it to the lists of substances covered by one or more of the three existing Conventions controlling drugs. For example, a “psychotropic substance” may be scheduled under the 1971 Convention “if the World Health Organization finds that the substance has the capacity to produce a state of dependence, and central nervous system stimulation or depression, resulting in hallucinations or disturbance in motor function or thinking or behaviour or perception or mood, and that there is sufficient evidence that the substance is likely to be abused so as to constitute a public health and social problem warranting the placing of the substance under international control”. Although the framers of the 1971 Convention had not intended alcohol to be included, it certainly qualifies according to the Convention’s Schedule II: “substances whose liability to abuse constitutes a substantial risk to public health and which have little to moderate therapeutic usefulness”.

Since adding alcohol to the 1971 Convention is unlikely to receive political support, an alternative option is to consider a Framework Convention on Alcohol Policy, similar to the FCTC.

The European Office of the WHO (WHO-EURO) has undertaken several initiatives to reduce alcohol-related harm in its Member States, of which there are currently 52, including all the states of the EU.

It adopted a Charter in 1995, promoting five ethical principles:

1. All people have the right to a family, community and working life protected from accidents, violence and other negative consequences of alcohol consumption.
2. All people have the right to valid impartial information and education, starting early in life, on the consequences of alcohol consumption on health, the family and society.
3. All children and adolescents have the right to grow up in an environment protected from the negative consequences of alcohol consumption and, to the extent possible, from the promotion of alcoholic beverages.
4. All people with hazardous or harmful alcohol consumption and members of their families have the right to accessible treatment and care.
5. All people who do not wish to consume alcohol, or who cannot do so for health or other reasons, have the right to be safeguarded from pressures to drink and be supported in their non-drinking behaviour.

In 2005, it adopted a new Framework on Alcohol Policy.

Area	Aims and objectives
<b>Strategies and action plans</b>	There is a need for an action plan at the appropriate level as well as a national alcohol strategy, with the capacity to both implement measures and monitor and follow-up the plan. Local communities, multiple community sectors, tax/availability restrictions, parental programmes, drink-driving enforcement, brief interventions, and workplace interventions should all be considered within such a strategy.
<b>Alcohol-free situations</b>	A number of groups and situations should be kept alcohol free, including: (1) Young People, (2) Young People’s Environment; (3) Road Safety; (4) the Workplace; and (5) Pregnancy.
<b>Drinking guidelines</b>	Many people have found a difficulty in interpreting guidelines, which can be treated as a baseline to range upward from. The WHO continues to have the message that ‘Less Is Better’. Individual drinking guidelines for problem drinkers should be delivered in a healthcare setting.

<b>Preventing problems</b>	A national focus day to raise awareness of preventing alcohol-related problems could be an effective way of generating support for other policies.
<b>Further research needs</b>	While there is enough evidence to implement policies, further research should fill gaps in: (i) epidemiological studies in different societies; (ii) measuring unrecorded consumption; (iii) alcohol policy interventions' effects on different target groups in a wider variety of societies; (iv) cost-effectiveness. Additionally, an Expert Group on Alcohol Policy should be established.
<b>Surveillance and monitoring</b>	While WHO-EURO will continue to collect and analyse data, there is a need for harmonized measures of consumption and risk within a common monitoring system. This should contain measures of social problems experienced by others as well as the drinker. The European Alcohol Information System should be expanded to include information on legislation and marketing practices and to meet these other needs.
<b>Training and capacity-building</b>	This is an important aspect of building a multi-sectoral approach to tackle harm, and WHO-EURO will continue to assist Member States in this. Biennial Collaborative Agreements – providing a platform for national initiatives to support (sub-)regional actions – could be a key tool in implementing this.
<b>Advocacy, networking and policy development</b>	Popular communication is often a weakness for public health advocates, and WHO-EURO will try to strengthen links to improve communication through training and networking activities. The national counterparts for alcohol are expected to build up capacity at the national level, while WHO-EURO will create a European Coalition on Alcohol Policy Development formed of Member States and international organizations / institutions.

## The European Union

With a few exceptions, the EU cannot pass laws simply to protect human health as Member States have not conferred this power on the European institutions. Much of the EU's action on alcohol has, therefore, come through 'soft law', in the form of non-binding resolutions and recommendations urging Member States to act in a certain way, as well as research and information functions. Nevertheless, it is worth reiterating that there is substantial scope for health concerns to be incorporated within actions to improve the single market.

At the end of 2006, the Commission launched through a Communication an EU strategy to support Member States in reducing alcohol related harm. The Communication identified the following priority themes and aims:

1. Protect young people, children and the unborn child
  - To curb under-age drinking, reduce hazardous and harmful drinking among young people, in cooperation with all stakeholders.
  - To reduce the harm suffered by children in families with alcohol problems.
  - To reduce exposure to alcohol during pregnancy, thereby reducing the number of children born with Foetal Alcohol Disorders.
2. Reduce injuries and deaths from alcohol-related road traffic accidents
  - To contribute to reducing alcohol-related road fatalities and injuries.
3. Prevent alcohol-related harm among adults and reduce the negative impact on the workplace
  - To decrease alcohol-related chronic physical and mental disorders.
  - To decrease the number of alcohol related deaths.
  - To provide information to consumers to make informed choices.
  - To contribute to the reduction of alcohol-related harm at the workplace, and promote workplace related actions.

4. Inform, educate and raise awareness on the impact of harmful and hazardous alcohol consumption, and on appropriate consumption patterns
  - To increase EU citizens' awareness of the impact of harmful and hazardous alcohol consumption on health, especially the impact of alcohol on the foetus, on under-age drinkers, on working and on driving performance.
5. Develop, support and maintain a common evidence base
  - To obtain comparable information on alcohol consumption, especially on young people; definitions on harmful and hazardous consumption, on drinking patterns, on the social and health effects of alcohol; and information on the impact of alcohol policy measures and of alcohol consumption on productivity and economic development.
  - To evaluate the impact of initiatives taken on the basis of this Communication.

Recognizing that Member States had the main responsibility for national alcohol policy, the Commission saw its role as encouraging cooperation and coordination between the Member States and lending support to their action. To do this, the Commission plans to set up an Alcohol and Health Forum, putting together experts from different stakeholder organizations and representatives from Member States, other EU institutions and agencies, with an initial focus on drink-driving and commercial communications.

## 9. RECOMMENDATIONS

### I. DEFINING AN ALCOHOLIC BEVERAGE

Defining an alcoholic beverage	Relevant actor
I.1. Public policies need to define alcoholic beverages in a uniform way across the European Union. A starting point could be the lowest definition for tax purposes (0.5% alcohol by volume).	(I) Eur. Inst.

### II. CREATING THE EVIDENCE BASE

Recommendations for research	Relevant actor
II.1. European infrastructures should be established and financed to undertake collaborative cross country alcohol research.	(I) Eur. Inst. (II) MS/region
II.2. European infrastructures should be created and financed to review and disseminate all major research outcomes in alcohol policy through, for example, registries and databases; the evidence base should be translated into easily understood policies and practices through practical toolkits and guidelines.	(I) Eur. Inst. (II) MS/region
II.3. Long-term publicly funded alcohol research programmes should be established and financed.	(I) Eur. Inst. (II) MS/region
II.4. Research capacity in alcohol policy should be developed through professional development programmes.	(I) Eur. Inst. (II) MS/region
Recommendations for information	Relevant actor
II.5. A European Alcohol Monitoring Centre (EAMC), with country based counterparts, should be established and financed.	(I) Eur. Inst. (II) MS/region
II.6. The importance of including alcohol-related indicators dealing with consumption, harm and policy and programme responses within the European Community Health Indicators short-list should be stressed to the EU Working Party on Health Indicators.	(I) Eur. Inst.
II.7. Alcohol surveillance programmes should be established so that data are comparable and analysable across Europe.	(I) Eur. Inst. (II) MS/region
II.8. A European database of laws and regulations and of effective polices and programmes at European, Member State and municipal level should be established and maintained.	(I) Eur. Inst. (II) MS/region (III) Municipal

### III. PREPARING AND IMPLEMENTING RESOURCED STRATEGIES AND PLANS

Recommendations for strategies and action plans	Relevant actor
III.1. A European mechanism and focal point for alcohol policy should be strengthened within the European Commission with adequate staff and financial resources to oversee the development of European alcohol policy and the implementation of the Commission's strategy on alcohol.	(I) Eur. Inst.
III.2. Co-ordinating mechanisms and focal points for alcohol policy should be established or reinforced at all levels of action and adequately financed.	(I) Eur. Inst. (II) MS/region (III) Municipal
III.3. Action plans on alcohol with clear objectives, strategies and targets should be formulated and implemented.	(I) Eur. Inst. (II) MS/region (III) Municipal
III.4. A predictable funding system should be set in place for organizations, programmes and human resources involved in reducing the harm done by alcohol. Analyses should be undertaken of the practicality and desirability of earmarking a proportion of alcohol taxes (hypothecated tax) to fund these.	(I) Eur. Inst. (II) MS/region (III) Municipal
III.5. Support for alcohol policy measures amongst civil and political society should be promoted through awareness-raising campaigns and initiatives.	(I) Eur. Inst. (II) MS/region (III) Municipal
III.6. Regular reports on alcohol should be prepared and made accessible to a wide public audience.	(I) Eur. Inst. (II) MS/region (III) Municipal

### IV. OTHER POLICIES AND ACTIONS AND CROSS BORDER SUPPORT

Recommendations for impact assessment and collective action	Relevant actor
IV.1. Health policy-makers and advisers should monitor the risks inherent in the process of trade liberalization and should ensure that health concerns are accounted for in trade negotiations at both the global and European levels.	(I) Eur. Inst. (II) MS/region
IV.2. Analytical and feasibility studies should be undertaken to determine when collective action on alcohol policy at both the European and global level is more appropriate and how comity of countries in relation to alcohol policy can be strengthened.	(I) Eur. Inst. (II) MS/region
IV.3. Increased resources should be provided to undertake thorough assessments of the impact of European community policies and activities (including agricultural policy) on the harms and costs associated with alcohol.	(I) Eur. Inst.

## V. REDUCING DRINKING AND DRIVING

Recommendations for drinking and driving	Relevant actor
V.1. A maximum blood alcohol concentration limit of 0.5 g/L should be introduced throughout Europe; countries with existing lower levels should not increase them.	(I) Eur. Inst. (II) MS/region
V.2. A lower limit of 0.2 g/L should be introduced for young drivers and drivers of public service and heavy goods vehicles; countries with existing lower levels should not increase them.	(I) Eur. Inst. (II) MS/region
V.3. Unrestricted powers to breath test, using breathalysers of equivalent and agreed standard, should be implemented throughout Europe.	(I) Europe (II) MS/region
V.4. Common penalties with clarity and swiftness of punishment, with penalties graded depending at least on the BAC level, should be implemented throughout Europe.	(I) Europe (II) MS/region
V.5. Driver education, rehabilitation and treatment schemes, linked to penalties, based on agreed evidence-based guidelines and protocols should be implemented throughout Europe.	(I) Europe (II) Country/region
V.6. Action to reduce drinking and driving should be supported by a Europe wide campaign.	(I) Europe
V.7. Existing designated driver campaigns should be evaluated for their impact in reducing drink driving accidents and fatalities before financing and implementing any new campaigns.	(I) Europe (II) Country/region
V.8. Effective and appropriate training for the hospitality industry and servers of alcohol should be implemented to reduce the risk of drinking and driving.	(III) Municipal
V.9. Comprehensive community-based educational and mobilization programmes, including urban planning and public transport initiatives, should be implemented to reduce drinking and driving.	(III) Municipal

## VI. SUPPORTING EDUCATION, COMMUNICATION, TRAINING AND PUBLIC AWARENESS

Recommendations for education and public awareness	Relevant actor
VI.1. Educational programmes should not be implemented in isolation as an alcohol policy measure, or with the sole purpose of reducing the harm done by alcohol, but rather as a measure to reinforce awareness of the problems created by alcohol and to prepare the ground for specific interventions and policy changes.	(II) Country/region (III) Municipal

VI.2. Funding should be provided to evaluate the design and impact of individual-based programmes that may show some promise.	(II) Country/region (III) Municipal
VI.3. Broad educational programmes, beginning in early childhood, should be implemented to inform young people of the consequences of alcohol consumption on health, family and society and of the effective measures that can be taken to prevent or minimize harm.	(II) Country/region (III) Municipal
VI.4. Educational type programmes imported from another country or culture should first be evaluated in the new setting before being widely implemented.	(II) Country/region (III) Municipal
VI.5. Media campaigns should be used to inform and raise awareness among citizens on implementation of policy initiatives.	(I) Europe (II) Country/region (III) Municipal

## VII. CONSUMER LABELLING

Recommendations on labelling	Relevant actor
VII.1. Containers of alcoholic products should carry warnings determined by health bodies, describing the harmful effects of alcohol when driving or operating machinery, and during pregnancy, or other messages as appropriate.	(I) Europe (II) Country/region
VII.2. Alcohol product packaging and labelling should not promote an alcoholic product by any means that are likely to create an erroneous impression about its characteristics or health effects, or that directly or indirectly appeals to minors.	(I) Europe (II) Country/region

## VIII. POLICIES THAT REGULATE THE ALCOHOL MARKET

Recommendations for tax, cross border purchases and smuggling	Relevant actor
VIII.1. Minimum tax rates for all alcoholic beverages should be increased in line with inflation; should be at least proportional to the alcoholic content of all beverages that contain alcohol; and should at least cover the external costs of alcohol as determined by an agreed and standardized methodology.	(I) Europe (II) Country/region
VIII.2. Member States should retain the flexibility to use taxes to deal with specific problems that may arise with specific alcoholic beverages, such as those that prove to be appealing to young people.	(II) Country/region
VIII.3. Alcoholic products should be marked to determine their origin and movement in trade, to enable estimates to be made of the value of the amount of alcohol smuggling into and within the EU.	(I) Europe (II) Country/region



VIII.4. Member States should have the flexibility to limit individual cross-border purchases so as not to diminish the impact of their current tax policies.	(I) Europe (II) Country/region
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<b>Recommendations for minimum purchase age and availability</b>	<b>Relevant actor</b>
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VIII.5. A minimum system of licensing for the sale of alcoholic products should be implemented throughout Europe, respecting existing licensing systems, where these are stronger.	(I) Europe (II) Country/region (III) Municipal
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VIII.6. The sales of alcoholic products to persons under the age set by domestic law, national law or eighteen years, whichever is the higher, should be prohibited and enforced.	(II) Country/region
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VIII.7. Jurisdictions that manage outlets through number and density, location and hours and days of sale should consider not relaxing their regulations; jurisdictions without such regulations or with very limited regulations should analyze the impact of introducing or strengthening them.	(II) Country/region (III) Municipal
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VIII.8. A range of increasingly severe penalties against sellers and distributors, such as withdrawal of license or temporary and permanent closures, should be implemented in order to ensure compliance with relevant measures.	(III) Municipal
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<b>Recommendations for commercial communications</b>	<b>Relevant actor</b>
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VIII.9. A level playing field for commercial communications should be implemented across Europe, building on existing regulations in Member States, with an incremental long-term development of no advertising on TV and cinema, no sponsorship, and limitation of messages and images only to those that refer to the quality of the product.	(I) Europe (II) Country/region
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VIII.10. Article 15 of the Television Without Frontiers Directive should be strengthened in terms of both content and volume, and an analysis of its adherence across MS should be commissioned.	(I) Europe (II) Country/region
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VIII.11. Where self-regulatory approaches adopted by the beverage alcohol industry or marketing industry are in place, they should be monitored and adjudicated by a body that is independent of the alcohol and marketing industries.	(I) Europe (II) Country/region
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## **IX REDUCING HARM IN DRINKING AND SURROUNDING ENVIRONMENTS**

<b>Recommendations for drinking and surrounding environments</b>	<b>Relevant actor</b>
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IX.1. Urban planning, community strategies, licensing	(III) Municipal
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regulations and restrictions, transport policies and management of the drinking and surrounding environments should work to minimize the negative effects that result from alcohol intoxication, particularly for local residents.	
IX.2. Effective and appropriate training should be implemented for the hospitality industry and servers of alcohol to reduce the harmful consequences of intoxication and harmful patterns of drinking.	(IV) Alcohol industry
IX.3. Adequate policing and enforcement of alcohol sales and licensing laws should be implemented, targeted at premises associated with a higher level of harm.	(III) Municipal
IX.4. Well-resourced community mobilization and intervention projects, involving different sectors and partners should be implemented to create safer drinking environments and to reduce the harm done by alcohol.	(III) Municipal

#### **X. ADVICE FOR HAZARDOUS AND HARMFUL ALCOHOL CONSUMPTION AND ALCOHOL DEPENDENCE**

<b>Recommendations for advice</b>	<b>Relevant actor</b>
X.1. Integrated evidence-based guidelines for brief advice for hazardous and harmful alcohol consumption should be developed and implemented in different settings upwardly to harmonize the quality and accessibility of care.	(II) Country/region (III) Municipal
X.2. Training and support programmes to deliver brief advice for hazardous and harmful alcohol consumption should be developed and implemented in different settings upwardly to harmonize the skills of primary care providers.	(II) Country/region (III) Municipal
X.3. Resources should be made available to ensure the widespread availability and accessibility of identification and advice programmes for hazardous and harmful alcohol consumption and alcohol dependence.	(II) Country/region (III) Municipal