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# **Alcohol consumption among elderly European Union citizens**

**Health effects, consumption trends and related issues**

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## About this report

With reference to its Presidency of the Council of the European Union from July to December 2009, the Swedish Government initiated the production of several reports on alcohol-related matters of importance to the EU. The Swedish National Institute of Public Health has been commissioned by the Swedish Ministry of Health and Social Affairs to produce a report concerning alcohol consumption trends and related harms among elderly EU citizens (60 plus). The report will be discussed at the EU Expert Conference on Alcohol and Health, organised by the Swedish Presidency. The main purpose of the report is to outline the main health, social and economic effects of alcohol use by the elderly; to discuss recent trends in alcohol consumption and alcohol related harms; and to determine whether current levels of consumption are problematic or warrant further attention. The ten countries that have been selected for inclusion in the report are: the Czech Republic, Finland, Germany, Italy, Latvia, Poland, Slovenia, Spain, Sweden, and the United Kingdom.

## Key points

- Alcohol use and ageing in the European Union is an under-researched area – significant information gaps exist in several Member States;
- Biological changes associated with ageing and the use of medication heighten elderly peoples' susceptibility to the negative effects of alcohol;
- Most elderly Europeans<sup>1</sup> drink alcohol: about 70–80 per cent of men, and around 50 per cent of women report consuming alcohol during the previous year;
- The elderly drink less alcohol per year compared to younger adults, but may drink almost as frequently;
- Elderly European men drink significantly more alcohol than elderly women, and are over-represented in alcohol hospitalisation and mortality statistics;
- "Younger" elderly Europeans (aged 60–70 years) drink more alcohol and are harmed more by their consumption compared to adults over 70 years;
- Wine and strong beer are the most popular alcoholic beverages among elderly Europeans (Poland is an exception, where strong beer and vodka are still preferred);
- There have been substantial increases in alcohol related deaths among elderly European men and women across all EU Member States surveyed, but this trend appears to be levelling out in recent years;
- Several Member States attribute recent increases in alcohol consumption, hospitalisation and mortality to reductions in the price of alcohol and increased availability;
- Five Member States (Finland, Sweden, the UK, Latvia and Poland) report significant increases in alcohol related hospitalisations over the past 5–10 years, but two (Slovenia and Germany) report small reductions;
- Only one country (Italy) has an alcohol consumption guideline for elderly adults (no more than one standard drink, or about 12 grams of pure alcohol, per day). The remaining Member States surveyed use the recommendation for all adults, which is typically no more than two standard drinks per day (or about 24 g of pure alcohol);
- Training programs to assist healthcare staff with the detection and management of alcohol problems among the elderly do not currently exist in most Member States, although three (Sweden, Finland and the UK) conduct programmes which touch on these issues;
- The economic impact of alcohol related harms of elderly Europeans was reported by only one country (the United Kingdom), where it has almost doubled in recent years.

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<sup>1</sup> In this context, "European" refers to the ten participating countries in this survey.

## Terminology and definitions

Throughout this report various terms are used to describe different amounts or patterns of alcohol consumption. In most instances, these are taken directly from the World Health Organization's (WHO) International Classification of Mental and Behavioural Diseases (ICD-10). On occasion, however, terms which are not found in the ICD-10 have also been used where they facilitate a discussion about alcohol consumption and related harms.

The definition of a 'standard drink' varies between world regions from 8 grams (g) of pure alcohol in the United Kingdom to 10 g in Australia and New Zealand, 14 g in the United States, and up to 19.75 g in Japan (Babor and Higgins-Biddle, 2001). In this report, unless otherwise stated, a standard drink refers to any alcoholic beverage containing 10 g of pure alcohol – the approximate equivalent of one can of full strength beer, a glass of wine or a small glass of sherry, or a single shot of spirits. This is the definition of a standard drink currently adopted by most European Member States (with some exceptions, such as the UK), and is the same definition used in the Alcohol Use Disorders Identification Test (AUDIT), a widely implemented screening instrument for hazardous drinking (Babor et al., 2001). Exactly how much alcohol is contained in a standard drink can vary over time, and will obviously depend on the amount served. Similarly, the terms "light", "moderate" and "heavy" consumption currently have no internationally accepted definition, but are frequently used in cardiovascular research, and consequently, are referred to in this report. In most cases, light drinking denotes 1–2 standard drinks per day (up to 20 g of pure alcohol) and heavy drinking at least 4 or 5 standard drinks per day (up to 50 g of pure alcohol). Episodic heavy drinking or "binge drinking" refers to the consumption of at least 5 standard drinks consumed during a single occasion (WHO, 1992).

The term alcohol "misuse" is often referred to in alcohol research, but is misleading because it implies that harmful alcohol consumption starts and ends at a particular point for all individuals, which is not the case. Consequently, it has been replaced in this report by "the harmful use of alcohol" which is a category in the ICD-10 (WHO, 1992). It refers to a condition in which physical or psychological harm has occurred to the individual as a result of drinking. "Alcohol-related harm" and "problems related to alcohol consumption" are equivalent terms, referring to the wide variety of health and social problems, to the drinker and to others, in which alcohol plays a causal role (WHO, 2007). "Risky consumption" or "hazardous alcohol consumption" have been defined as a level of consumption or pattern of drinking that is likely to result in harm should the drinking habits persist (Babor et al., 1994). There is no standardized agreement regarding what level of consumption constitutes hazardous drinking, and, as will be discussed in this report, any level of alcohol consumption can carry risk. Throughout this report, "harmful alcohol use" will be used to indicate a drinking level or pattern of consumption which results in harmful consequences, while "hazardous consumption" is used to indicate a level or pattern of drinking which puts the individual at risk of such harms.

Attempts have been made to define risky drinking levels by linking consumption data to detrimental health or safety outcomes (e.g., Rehm et al., 2008). In Sweden, for example, while no level of alcohol consumption is considered risk free, drinking more than 9 alcoholic beverages per week for women and 14 for men is considered "risky" because it is associated with significantly higher risks of alcohol related harm. However, population based estimates of risk say little about individual risk levels, and this is especially true for elderly people, whose changing metabolism, body composition and general health can

influence the effects of alcohol and the risks associated with consumption. Furthermore, both the total amount and the way alcohol is consumed can greatly influence the degree of risk associated with consumption. Therefore, definitions of risky, hazardous or harmful consumption must take into account a range of factors, including individual variation in response to the same amount of alcohol, age, gender and the pattern (frequency and volume) of consumption.

It is hereby also important to mention that at its first meeting in 2008, the Committee on Data Collection, Indicators and Definitions, set up by the European Commission as part of its strategy to support Member States in reducing alcohol-related harm<sup>2</sup>, agreed on the indicator "harmful drinking" as the intake of 60 grams or more of alcohol on one occasion, monthly or more often, during the past 12 months. The indicator will be used in the next European Health Interview Survey (HIS).

Two additional terms, although not frequently used in this report, should also be mentioned. The ICD-10 (1992) defines "alcohol dependence" as a cluster of physiological, behavioural and cognitive phenomena in which the use of alcohol takes on a much higher priority for a given individual than other behaviours that once had greater value. A central characteristic is the desire (often strong, sometimes perceived as overpowering) to drink alcohol. When a relapse to drinking occurs after a period of abstinence, it is often associated with the original features of the syndrome. "Alcoholism" is a term of long-standing use and variable meaning, generally taken to refer to chronic, continual

drinking or periodic consumption of alcohol which is characterized by impaired control over drinking, frequent episodes of intoxication and preoccupation with alcohol and the use of alcohol despite adverse consequences. The inexactness of the term led a WHO Expert Committee to disfavour it, preferring the narrower formulation of alcohol dependence syndrome as one among a wide range of alcohol-related problems, and it is not included as a diagnostic entity in ICD-10 (Anderson and Baumberg, 2006).

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<sup>2</sup> The EU alcohol strategy to support Member States in reducing alcohol-related harm was adopted in 2006. As one part of the strategy, the European Commission set up a Committee on Data Collection, Indicators and Definitions with the aim to outline and discuss indicators and definitions on alcohol consumption and the collection of data, with special emphasis on the comparability of data across EU Member States.

# Chapter 1:

## Introduction

Europe plays a significant role in the production, trade and consumption of alcoholic beverages. It also bears a heavy social and economic burden of alcohol-related problems with the highest per-capita alcohol consumption in the world (World Health Organization, 2007). Most Europeans drink alcohol, which is estimated to be responsible for about ten per cent of the total disease and injury burden in Europe and associated with more than sixty medical disorders (WHO, 2007). Harmful alcohol use is also linked to serious social problems, including violence, crime and work absenteeism, and, in the case of the elderly, traffic accidents, falls and other health complications (Babor et al., 2003).

There are several compelling reasons for a report on alcohol consumption and the elderly (aged 60 plus) in the EU. The first reason concerns the lack of available information about the health and social effects of alcohol use by elderly Europeans. On the one hand, alcohol is responsible for an estimated 195,000 deaths each year in Europe (EU25; Anderson and Baumberg 2006), and is the third highest risk factor for illness, ahead of obesity and behind only smoking and cardiovascular disease (WHO, 2007). Harmful alcohol use is also associated with substantial economic costs, which were estimated to exceed EUR 125 billion in EU25 in 2002 (Anderson and Baumberg, 2006). On the other hand, there is a positive side to regular but light alcohol use; it may help to reduce the risk of cardiovascular disease in some individuals and, for many, alcohol plays an important social role which should not be overlooked. However, it remains clear that much less is known about the health, social and economic impacts of alcohol use in elderly populations compared to younger adults. This may be a subject that until recently has fallen between two related, yet disparate research areas, namely, the health effects of ageing and alcohol research. Currently, only limited data is available con-

cerning alcohol related mortality among the elderly, with most studies focusing on adults up to age 65, and often with an emphasis on young people. A systematic review of the health-related effects of alcohol use in older people by Reid et al (2002) reported that the magnitude of the risk of falls, functional impairment, cognitive impairment and all-cause mortality posed by alcohol use among older adults remains uncertain. The present report aims to bridge this information gap by documenting recent trends in alcohol consumption and related harms among elderly EU citizens, using data from ten EU countries. Where data is available, it will also raise a number of related issues concerning the economic costs of alcohol use, the relationship between alcohol and health, staff training and the detection of alcohol problems.

### Changing demography in the EU

A second reason concerns recent demographic changes in the EU. The ageing of populations worldwide means that the absolute number of older EU citizens with alcohol-use disorders will rise and the impact of these changes must be considered. The elderly population is the fastest growing segment of the EU. The number of people over 80 years of age will rise from 18.8 million today to 34.7 million in 2030; and the EU's total working age population (15–64 years) will fall by 20.8 million (6.8 per cent) over the same period (European Commission, 2009). At least three factors lie behind the ageing of Europe; a significant fall in fertility, a significant increase in life expectancy and the ageing baby-boomer generation. Average life expectancy has risen by five years for women (to 81 years) and four years for men (to 76 years) since 1960, and will continue to rise in the coming decades (European Commission, 2009). These changes will have an enormous impact on European society. An ageing population typically increases the overall health burden within communities



and poses many challenges for public health policymakers. Demographic shifts have been paralleled by improvements in average disposable incomes and the buying power of many elderly Europeans. The elderly have become a market segment in their own right, and the targets of advertising campaigns for a range of products, including alcohol. Today's elderly Europeans live and work longer than before, and have more financial capacity to purchase alcohol compared to previous generations. Consequently, there is a great deal of interest in what impact these changes are likely to have and how best to respond to the challenges (and opportunities) they present. The recent publication "Healthy Ageing – A challenge for Europe" (Swedish National Institute of Public Health, 2007) highlights the impact of ongoing demographic and social change in Europe, and the need to develop effective interventions for an ageing European populace.

### **Alcohol and ageing**

A third important reason for focusing on alcohol use among the elderly is related to the biological changes associated with ageing. Research suggests that the elderly are more sensitive to alcohol's negative health effects compared to younger adults, which could mean that more harm results from equivalent amounts of consumption by the elderly (National Institute on Alcohol Abuse and Alcoholism [NIAA], 1998). One reason for this heightened sensitivity is the higher blood alcohol concentration (BAC) achieved by the elderly compared to younger people after consuming an equal amount of alcohol. The higher BAC results from an age-related decrease in the amount of body water in which the alcohol is diluted (NIAA, 1998). Ageing also interferes with the body's ability to adapt to the presence of alcohol (i.e. tolerance) and, through this decreased ability to develop tolerance, elderly subjects continue to exhibit certain effects of alcohol (e.g.

coordination problems) at lower doses than younger subjects whose tolerance increases with increasing consumption (NIAA, 1998). Thus, an elderly person can experience the onset of alcohol problems even though his or her drinking pattern remains unchanged. Brain research also suggests that ageing may render a person more susceptible to alcohol's effects. For example, it has been reported that older subjects with a history of chronic, heavy alcohol use exhibit more brain tissue loss than younger subjects with alcoholism, often despite similar lifetime alcohol consumption (Oscar-Bergman et al., 1997). It has also been shown that older people with alcoholism are less likely to recover from cognitive deficits during abstinence than are young people with alcoholism, again suggesting that the elderly are more vulnerable to alcohol's negative effects (Pfefferbaum et al., 1997). Altogether, the biological changes linked to ageing appear to heighten older people's sensitivity to alcohol, which may result in greater harm compared to younger adults. But this possibility needs to be explored further by examining consumption and alcohol-related harm trends among the elderly and comparing them to younger adults.

### **Ongoing research**

Also relevant to the background of this report are a number of recent social, economic and regulatory changes in Europe that have influenced alcohol consumption patterns across all age groups. For example, significant changes in global and EU trade policies have resulted in lower average alcohol prices and greater alcohol availability in many countries as the EU has expanded, and these changes have in turn influenced alcohol consumption trends (Anderson and Baumberg, 2006). In addition, economic developments since the mid-1990s have made alcoholic beverages more affordable in most EU countries (RAND Europe, 2009). In several EU Member States, the introduction of liberal trade and tax agreements during the

mid-1990s eroded traditional harm-prevention strategies developed from a public health perspective. The border effects of lower alcohol prices in neighbouring countries have also led to greater availability and affordability, especially in countries which neighbour those with a low excise tax on alcohol. These changes led to a notable increase in alcohol consumption in many countries during the 1990s (Leifman, 2002). Economic factors, such as increases in disposable income combined with changes in the average price of alcohol have also undoubtedly influenced drinking trends in Europe. For example, it has been shown that Gross Domestic Product (GDP) – a key measure of economic productivity – is an important factor affecting alcohol consumption levels in Europe (Andersson and Baumberg, 2006). The process of "globalisation" has also influenced alcohol consumption trends, especially the business practices of increasingly multinational drink operators in the EU, which have dominated beverage advertising and alcohol preferences in parts of Europe.

An important starting point for this report is to first describe the physical and mental health effects of alcohol, focusing on those which are most relevant to the elderly. Chapter 2 addresses these issues, starting with a discussion about the detrimental health effects of alcohol consumption across all ages. The health benefits of moderate alcohol consumption are then described, focusing on the purported cardiovascular benefits of moderate alcohol use, which have received considerable attention in the scientific literature and mass media, yet remain controversial. Chapter 3 examines a number of specific issues relevant to elderly people, including how alcohol interacts with medication, problems with the screening and detection of alcohol problems, the association between consumption and mental health, and the relationship between alcohol use and injuries. Chapter 4 presents alcohol

consumption and related harm statistics for the elderly from the nine European Member States included in this report. A summary of the main findings and conclusions are set out in the final Chapter.

It is important to acknowledge the ongoing development of a number of separate, but related projects. One new project, also being prepared for the European Commission, is "Good Health into Older Age" (the VINTAGE project). This project aims to build capacity at the European, national and local levels by providing the evidence base and examples of best practice to prevent the harmful use of alcohol among older people. VINTAGE will contribute to the objectives of the European Commission to share examples of best practice across countries and to provide guidance on preventing the harm done by alcohol to older people. The project commenced in May 2009 and a final report is expected to become available before the end of 2009. Further details about the project, including specific objectives, are available in Appendix A. The World Health Organization's "Health for All" database and the WHO "Global Information System on Alcohol and Health" are currently being updated by the WHO European office, and this update may include data for the 65+ age group (current data only extends to 2003). The WHO European office is coordinating an information request for consumption and related harm statistics from all EU Member States. However, due to the format of the questionnaire used, it is unlikely to include statistics on elderly (65+) consumption trends.

Two recently finished reports are also worth mentioning. In 2006 the UK Institute of Alcohol Studies published a report entitled "a public health perspective" by Dr. Peter Anderson and Ben Baumberg. This comprehensive report, also written for the European Commission, describes alcohol consumption, mortality and morbidity trends in the European Union with a focus on effective policy and

recommendations for harm prevention. The final report worth mentioning is the European Commission's Eurobarometer report, titled "Attitudes towards Alcohol" (2007).

This report paints a picture of EU citizens' alcohol drinking habits and their attitudes towards measures influencing alcohol-related harm. The Eurobarometer study includes data on elderly (55+) consumption and harm, but the sampling methodology used in the study has led some researchers to question the report findings.

## Chapter 2:

# Alcohol and health

This chapter presents an overview of how alcohol affects the body, and how different patterns of consumption are related to detrimental health and social outcomes. Some of this information is relevant to all individuals, regardless of age. Particular attention has been paid to research focusing on the biological and social effects of alcohol on the elderly.

### Alcohol related harms and patterns of consumption

Alcohol (ethanol or ethyl alcohol) is a drug and its consumption is not without physical consequence or risk. It is also a toxic substance related to over 60 different medical disorders (WHO, 2004). The structure and size of the ethyl alcohol molecule allows it to easily permeate cell membranes and spread through all cells and tissues in the body following digestion. Consequently, even a moderate intake can produce high blood alcohol concentration readings depending on gender, body size and constitution (Rimm et al., 1999). At higher concentrations or with repeated exposure, the short and long-term effects of alcohol can multiply. As a psychoactive substance, alcohol also produces immediate effects on mood, and can interfere with cognitive processes and motor function. As noted in the introduction, the elderly differ biologically from younger adults in ways that make them more susceptible to these effects, which means that some of the changes in cognition and motor function associated with alcohol consumption are more pronounced in older people compared to younger adults. Chronic health problems such as hypertension and cardiovascular disease tend to increase with age, and in many instances, alcohol may exacerbate these conditions, adding to the individual and social burden of the illness. The precise effect that alcohol consumption has on any individual is a complex interaction between the total volume of alcohol consumed, the pattern of consumption (i.e. the amount and frequency of alcohol

consumed), the individual's drinking history (tolerance) and various mediating factors, including gender, age, body composition, food intake and ingestion of drugs or medicines.

In addition to having potential toxic effects on the body, alcohol can also produce dependence in humans (Heather, 2001). Alcohol has reinforcing properties, both physical and psychological, which can strongly encourage repeated use. Some of alcohol's rewarding effects are thought to come via the endogenous opioid system, similar to other psychoactive substances (Heather, 2001). The direct action of chronic alcohol consumption can lead to longer-term molecular changes in the brain known as neuroadaptation. In many cases, these changes counteract or reverse the acute actions of alcohol, so that upon removal of alcohol, the body overcompensates in the direction of excitation and, in the worst case, seizures (WHO, 2004). This mechanism provides the basis for alcohol tolerance and withdrawal syndrome, where more alcohol must be consumed for the same effect. At the behavioural level, cravings for further drinking and difficulties controlling alcohol use are two signs of dependence, and the varied aspects of dependence can become mechanisms for continued heavy drinking, despite adverse social and health effects (Heather, 2001).

The mechanisms underlying the detrimental effects of alcohol consumption use are well documented, especially with regard to heavy drinking (Heather, 2001; Rimm et al., 1999; Corrao et al., 2000). Repeated alcohol consumption can expose the liver to hypoxia, harmful products of alcohol metabolism and reactive oxygen chemicals (Heather, 2001). Alcohol increases the levels of circulating lip polysaccharides, which together with these other toxins, cause liver damage (Heather, 2001). Alcohol can also exacerbate hepatitis C; in fact more than half of all patients with hepatitis C have a history of alcohol use, and chronic consumption of more than five standard

drinks per day in individuals with hepatitis C increases the rate of liver fibrosis and potentially death from liver disease (WHO, 2004). Research shows there is a relationship between irregular heavy drinking and cardiovascular death among the elderly (Murray et al., 2002), which is consistent with the physiological mechanisms of increased clotting and reduced ventricular fibrillation after heavy drinking bouts. Unlike low-volume alcohol consumption, heavy drinking bouts have been shown to increase low-density lipoproteins, which in turn have been linked to negative cardiovascular outcomes (Rimm et al., 1999). Chronic alcohol abuse can also have several adverse immunological consequences. Studies have documented wide-ranging deleterious effects on both innate and adaptive immunity from short and long-term alcohol use across all ages. For this reason, people with alcohol dependence are often immunodeficient and have an increased incidence of infectious diseases (Corrao et al., 2000). The mechanisms of alcohol related harm apply to all individuals who consume alcohol in harmful ways, but the effects may be greater or occur at a faster rate in older people due to existing health complications, medication use or gradual changes in immune function associated with ageing.

Certain patterns of alcohol consumption are more harmful than others, both for elderly and younger adults. Intoxication (or drunkenness) is a powerful mediating variable that is often associated with serious acute harms, such as injury and violence. In contrast, alcohol dependence, which is characterised by heavy and frequent drinking, is often associated with both acute and long-term harms, such as liver cirrhosis (Corrao et al., 2000). The elderly may experience both types of harm as a result of their drinking, although certain chronic health problems, such as liver cirrhosis, are more common among elderly people with a lifetime history of alcohol dependence (Na-

tional Institute on Alcoholism and Alcohol Abuse, 1998). Across all ages, both the pattern of consumption and the total volume consumed are broadly related to detrimental health outcomes. At the risk of oversimplification, chronic alcohol-related harms are likely to be higher in European countries with a high per capita consumption of alcohol, but where alcohol is consumed in regular and moderate amounts (Southern European countries tend to fall into this category). Conversely, acute alcohol-related harms tend to be more prevalent in countries where heavy, irregular drinking is more common – a pattern of drinking frequently observed in Eastern Europe and Scandinavia (Anderson and Baumberg, 2006). This raises an important point, namely that alcohol related harms and problems are not confined to an identifiable "high-risk" group of heavy consumers. Heavy drinkers may account for a disproportionate amount of total alcohol consumption, but it is frequently the "moderate" alcohol consumers who are responsible for the greatest proportion of alcohol related harm or disease burden within a community (Rossow & Romelsjö, 2006).

Alcohol is responsible for about 195,000 deaths each year in the EU (EU25; Anderson and Baumberg, 2006). Alcohol is also estimated to delay 160,000 deaths in older people through its cardio-protective effects, however as will be discussed, methodological flaws with this research have raised doubts about these beneficial effects. Measuring the impact of alcohol through Disability Adjusted Life Years shows that alcohol is responsible for 12 per cent of male and 2 per cent of female premature death and disability, taking health benefits into account (WHO, 2007). The health impact occurs across a wide range of conditions, including about 17,000 deaths per year due to road accidents, 27,000 accidental deaths, 2,000 homicides, 10,000 suicides, 50,000 cancer deaths and 17,000 deaths due to neuropsychiatric conditions, as well as 200,000 episodes

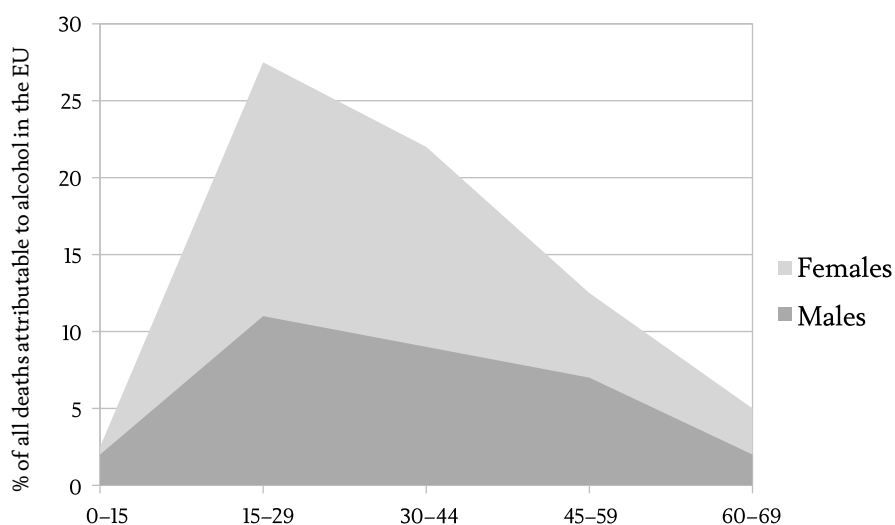
of depression. Many of the harms caused by alcohol are borne by people other than the drinker, for example, an estimated 10,000 deaths in drink-driving accidents involve someone other than the driver. Research shows that the health burden from alcohol is related to changes in consumption. These changes reflect the behaviour of the heaviest drinkers more than light drinkers (the top 10 per cent of drinkers in Europe account for about one-third of total consumption in most countries). Overall, it has been estimated that a one litre decrease in consumption would decrease total mortality in men by one per cent in Southern and Central Europe, and three per cent in Northern Europe.

The distribution of alcohol related deaths by age are shown in Figure 1, below. Young people are over-represented in alcohol related harm statistics, especially those aged 15–29 years. However, the elderly (aged 60–69 years) are clearly not immune to alcohol's deleterious effects and comprise about five per cent of all deaths attributable to alcohol in Europe. This equates to almost 10,000 deaths each year amongst elderly people aged 60–69 years, although this figure will be substantially higher when those over 80 years of age are included in the estimation. Furthermore, although there is currently no statistical evidence to support the claim, it has been suggested (see O'Connell et al., 2003) that this figure may underestimate the full extent of the problem among elderly people due to under-detection and misdiagnosis of hazardous and risky alcohol use; a subject taken up in Chapter 3 under the sub-heading "Screening and Detection".

Consumption patterns and the effects of alcohol vary between individuals and between genders, with men more likely to be drinkers and women abstainers (Babor et al., 2003). Across all ages, including the elderly, men consume significantly more alcohol than women – for example, men's share of total consumption in Europe is around two to three

times that of women's (Leifman et al., 2002). Moreover, men drink heavily (i.e., to intoxication, or in large quantities per occasion) much more often than women. This is consistently reported from a number of different countries in the EU, including the Nordic countries, Germany and the Netherlands (Anderson and Baumberg, 2006). Hence, there are more heavy drinkers and more heavy drinking occasions among men, and consequently harmful drinking is more typical among men than women, including the elderly. Heavy, long-term drinking and binge drinking are associated with significant physical and social harms; another domain in which men are over-represented. Countries differ in the size of the gender gap, but not according to a consistent geographical pattern across Europe, although a recent comparative study within Europe noted that there were three types of European societies where "egalitarian drinking patterns" could be found (Ahlström et al., 2001, cited in Anderson and Baumberg, 2006). These were countries where drinking was well-integrated into everyday life (Italy), where both this and a low employment status for women was visible (Switzerland), or where these two factors only result in an egalitarian pattern for those with a low employment status (Netherlands, Germany). The divergence between men and women for the frequency of both drinking and drunkenness appears to be lowest in the Nordic countries and the UK (Anderson and Baumberg, 2006)

Age-related differences in drinking habits are difficult to compare across countries because different measures of drinking and age groupings have been used in population surveys. Nevertheless, a common picture emerges from these studies: abstinence is more prevalent in older age groups, and intoxication and heavy drinking episodes are more frequent among young adults (Babor et al., 2003). There are a few notable exceptions to this general pattern; studies from Germany and the Nordic countries, for example, have found that



**Figure 1:** The share of deaths attributable to alcohol in EU citizens up to 70 years (2000).  
**Source:** Rehm, 2005.

Disease category	Number of deaths (thousands)			Percentage of deaths as a proportion of the deaths attributable to the disease categories listed		
	Males	Females	Total	Males	Females	Total
<b>Deaths caused</b>						
Maternal and perinatal conditions (low birth weight)	1	1	3	0.1	0.3	0.1
Cancer	361	105	466	18.7	25.0	19.8
Diabetes mellitus	0	1	1	0.0	0.2	0.0
Neuropsychiatric disorders	106	25	130	5.5	5.9	5.5
Cardiovascular diseases	452	77	528	23.3	18.2	22.4
Cirrhosis of the liver	293	77	370	15.2	18.2	15.7
Unintentional injuries	501	96	597	25.9	22.7	25.3
Intentional injuries	220	40	260	11.4	9.6	11.1
<b>Total "detrimental effects" attributable to alcohol</b>	<b>1 934</b>	<b>421</b>	<b>2 355</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Deaths prevented</b>						
Diabetes mellitus	-8	-5	-12	7.7	3.5	5.3
Cardiovascular disease	-90	-130	-220	92.3	96.5	94.7
<b>Total "beneficial effects" attributable to alcohol</b>	<b>-98</b>	<b>-135</b>	<b>-232</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>All alcohol-attributable net deaths</b>	<b>1 836</b>	<b>287</b>	<b>2 123</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
All deaths	29 891	27 138	57 029			
<b>Net deaths attributable to alcohol as a percentage of all deaths</b>	<b>6.1%</b>	<b>1.1%</b>	<b>3.7%</b>			

**Table 1:** Deaths attributable to alcohol consumption in the world, 2002.  
**Source:** WHO Expert Committee on Problems Related to Alcohol, Second report, 2007.

the average consumption or the proportions of high-volume consumers do not vary much across age groups (Mäkelä et al., 1999). The age gradient in drinking level and abstinence described in recent cross-sectional studies may be interpreted as an age effect (i.e., people tend to drink less heavily or become abstinent as they get older), a cohort effect (i.e., those who grew up in the second half of the 20th century were exposed to heavier drinking cultures than older cohorts), or a combination of both (Babor et al., 2003). Longitudinal studies have shown that elderly people are more likely than younger people to reduce their drinking or become abstinent, and much less likely than younger people to increase their drinking or take up heavy drinking (Fillmore et al., 1991). Importantly, these studies should not be seen as evidence that alcohol consumption is harmless for elderly people – the harms may be large and troublesome – but they should be seen in the wider context of age-related drinking patterns.

While there are clear associations between alcohol consumption and disease prevalence, the precise relationship is complex. The strength of the association between alcohol consumption and disease varies considerably. For some chronic health conditions, there is a strong linear relationship between increasing consumption and increasing risk of disease, with no evidence of a threshold effect (WHO, 2004). For other conditions, such as liver cirrhosis, the risk is curvilinear and increases markedly after a certain level of consumption is reached (Corrao et al., 2000). Nonetheless, across all ages, alcohol is a major contributor to death and disability. It has been linked to more than 60 medical disorders and represents approximately 10 per cent of the disease burden in Europe. The global burden of alcohol is shown in Table 1 below and by world region in Table 2. Table 1 also shows that although alcohol is presumed to prevent a number of deaths, it still results in a very large overall net loss of life.

Alcohol consumption has a well-recognized and significant contributory role in cancer of the mouth, larynx, pharynx, oesophagus, breast, liver, colon and rectum (Baan et al., 2007; Bagnardi et al., 2008; Boffetta and Hashibe, 2006; IARC, 2007; Rimm et al., 1999). Research has also specifically shed light on the role of alcohol intake for breast cancer in women (Allen et al., 2009; Institut National du Cancer, 2007; Smith-Warner et al., 1998; Suzuki et al., 2005). The risk relationship between alcohol and cancer emerges in an almost linear dose-response relationship between volume of drinking and the relative risk of disease, covering the range which is widely regarded as moderate consumption. These findings make it particularly complex to communicate a lower, "risk-free", limit of consumption to the general public (Allen et al., 2009; Bagnardi, 2001; Institut National du Cancer, 2007). While there have been speculations in the research concerning the relationship between cancer and certain patterns of drinking (for example, binge drinking), the current state of knowledge does not indicate that patterns of drinking per se are responsible for the aetiology of cancer (English et al., 1995). Neither can it be linked to type of alcoholic beverage but rather the breakdown of ethanol, and other mechanisms linked with the ethanol molecule (Baan et al., 2007; O'Hanlon 2005).

The relationship between consumption and disease risk is commonly expressed in "alcohol-attributable fractions". Some diseases are fully attributable to alcohol (e.g. alcohol dependence syndrome), whereas for other health conditions, several mediating factors are involved. In such cases, the alcohol-attributable fraction, or the relative contribution of alcohol to the disease, may be quite low, but not necessarily negligible (WHO, 2004). For example, if only ten per cent of all cases of a highly prevalent disease are attributable to alcohol, the alcohol related 'share' of the



WHO Region	Males (%)		Females (%)		Total (%)	
	2000	2002	2000	2002	2000	2002
African Region	3.3	3.4	0.9	1.0	2.1	2.2
Region of the Americas	2.3	8.7	0.8	1.7	4.8	5.4
South-East Asia Region	2.6	3.7	0.4	0.4	1.6	2.1
European Region	10.2	10.8	0.6	1.7	5.5	6.4
Eastern Mediterranean Region	0.6	0.8	0.1	0.1	0.4	0.5
Western Pacific Region	8.0	8.5	0.7	1.5	4.5	5.2
<b>World</b>	<b>5.6</b>	<b>6.1</b>	<b>0.6</b>	<b>1.1</b>	<b>3.2</b>	<b>3.7</b>

Table 2: Percentage of all deaths attributable to alcohol consumption by world regions. Source: WHO Expert Committee on Problems Related to Alcohol, Second report, 2007

disease may still outnumber diseases that are fully attributable to alcohol, but which are relatively rare (WHO, 2004). To the author's knowledge, AAF's for the elderly have not yet been published. Such information could help clarify which diseases are wholly or partly attributable to alcohol use among older people.

#### **The health benefits of alcohol consumption (heart disease and ageing)**

There is little dispute that chronic heavy drinking and binge drinking can be harmful, regardless of age. However, the effects of moderate alcohol consumption are more complex and have been debated at length in the scientific literature. Having considered the detrimental health effects of alcohol and the mechanisms which mediate these effects, this section examines the purported health benefits of alcohol, with a focus on the relationship between alcohol use and coronary heart disease (CHD) – a leading cause of death among elderly Europeans.

Both experimental and epidemiological research has linked light to moderate alcohol consumption to a reduced risk of CHD, presumably brought about through a reduction in lipoprotein concentrations associated with alcohol intake (Corrao et al., 2001; Mukamal et al., 2006). Epidemiological evidence for a protective effect comes largely from prospec-

tive mortality studies of alcohol use and all-cause mortality where a "J-shaped" association is commonly found. This research suggests that both heavy drinkers and abstainers from alcohol have a significantly higher mortality risk compared to adults who consume small amounts of alcohol on a regular basis. In other words, it suggests there may be a "protective effect" of light alcohol consumption against CHD.

These epidemiological findings have been replicated widely and reported by several authors (e.g., Heather, 2001; Corrao et al., 2001; Mukamal et al., 2006). In a meta-analysis of all experimental studies assessing the effects of moderate alcohol intake on risk factors for coronary heart disease, Rimm et al., (1999) reported that alcohol intake was causally related to lower risk of CHD through changes in lipids and haemostatic factors (i.e., processes which stop bleeding). More recent studies of diverse populations, including the elderly, are consistent with these findings. Results from a randomised, controlled trial reported by Davies et al., (2002) suggest that consumption of 30 grams of ethanol per day (about two standard drinks) meliorates serum triglyceride concentrations and insulin sensitivity in non-diabetic postmenopausal women. Similarly, a study by Shai et al., (2004) reported that moderate alcohol intake (less than three

standard drinks per day) by diabetic men aged 40–75 years was associated with lower levels of inflammation in arterial walls and endothelial dysfunction, which can in turn lower the risk of cardiovascular disease. The epidemiological evidence in favour of light alcohol consumption is also supported by biological research, where it has been estimated that up to 50 per cent of the protective effect of alcohol may be attributable to favourable changes in blood lipids (WHO, 2004). However, the purported health benefits of alcohol could be mediated through favourable effects on other variables, including: (1) coagulation profiles; (2) insulin resistance; (3) hormonal profiles, especially its oestrogen effects; and (4) inflammation (Ferreira & Weems, 2008).

In many countries, research supporting the cardiovascular health benefits of light alcohol consumption has translated into widespread media coverage promoting the health benefits of light, but regular drinking. However, the belief that alcohol has a protective effect against CHD is not unanimous in the scientific community. For example, the recent publication of a meta-analysis by Kaye Fillmore et al. (2006) has stimulated a serious re-assessment of previously accepted epidemiological findings. In their analysis of 54 published studies, the authors argue that much of the scientific evidence presented to date in support of the protective effect of light alcohol consumption is methodologically flawed due to confounding and/or misclassification errors. Specifically, they argue that a large proportion of the research has failed to adjust for possible confounding variables, such as poor health, and that misclassification of former and occasional drinkers as "abstainers" has biased findings in favour of positive health benefits for light drinkers. Such oversights are likely due to the view that occasional drinking is not enough to gain the protective effect mediated by potential biological mechanisms (i.e., lipid changes). The difficulty of assessing

shifts in drinking behaviour over time might also have caused misclassification errors.

In their meta-analysis, Fillmore et al (2006) sought to identify the extent to which these potential misclassification errors were present in prospective studies and whether they influenced the results. They also excluded studies from the analysis which classified unhealthy individuals as abstainers. The authors found that many of the studies reviewed had in fact combined former and occasional drinkers with abstainers, thereby misclassifying many individuals and possibly including more subjects with pre-existing illness in the abstainer category. Studies without these misclassification errors failed to demonstrate a protective effect of alcohol (Fillmore et al., 2006). The authors suggest that what is now required is a careful re-assessment of the voluminous epidemiological research positing a protective effect of light alcohol consumption on CHD, and that future research should report findings using a more rigorous classification system for participant drinking history.

A small number of studies have examined how the relative risk between alcohol consumption and heart disease changes with age. In general, risk factors for coronary heart disease increase with age. The "Honolulu heart program" (Abbott et al., 2002) aimed to determine the association between reported alcohol consumption and mortality among elderly men (75–93 years) in a prospective cohort study conducted over 26 years. They found that the protective effect of alcohol on CHD risk declined with advancing age. Comparing drinkers with non-drinkers, the relative risk converged towards 1.0 with increasing age, such that there was no evidence for a protective effect in men aged 75 years or older (Abbott et al., 2002). The Honolulu Heart Program results contrast with those reported by Mukamal et al (2006) who also used a prospective cohort study design to evaluate several aspects of the relationship between

alcohol use and CHD in 4410 adults aged 65+ years over an average follow-up period of 9.2 years. The authors reported that in this population, consumption of 14 or more drinks per week was associated with the lowest risk of coronary heart disease. There were consistent associations between alcohol use and risk of CHD in analyses stratified by sex, age (<75 and >75), ethnic group, aspirin use and baseline hypertension. Of relevance here is that the Mukamal et al (2006) study does not appear to include the misclassification errors described by Fillmore et al (2006), lending greater support to their findings. A recent study by Harris et al (2007) investigated the relationship between alcohol consumption and CHD in 38,000 men and women aged 40–69 years over an 11 year follow-up period. This study was after the Fillmore et al (2006) meta-analysis, and deliberately attempted to account for possible misclassification errors. Their results indicated that usual daily alcohol intake was associated with reduced cardiovascular disease and CHD mortality for women, but not for men.

An important question to consider at this point is whether gender differences exist in the relationship between alcohol consumption, CHD and mortality risk by age. To the authors' knowledge, no studies to date have examined gender differences in alcohol mortality risk in an elderly population. Rehm et al (2008) measured gender differences for lifetime risk of alcohol-attributable mortality, and found that above "moderate" levels of drinking (about 20 g or two alcoholic drinks per day) there are clear gender differences in lifetime risk of alcohol related mortality. For death from chronic illness, women are at greater risk than men at a given level of drinking, and the gender difference increases with higher amounts of drinking (Rehm et al., 2008). For death from injury, the results are not what might be expected. Despite the greater blood-alcohol level in women resulting from

a given number of drinks, men are at greater risk of dying from an alcohol related injury for a given number of drinks consumed the same number of times in a lifetime. However, this result is less about the effect of alcohol per se, and more about the greater propensity of men to engage in risky behaviours. Most likely, this propensity reduces with age, yet it remains unclear whether significant gender differences in lifetime alcohol-attributable risk exist for adults over 65 years of age.

The February 2008 edition of the scientific journal "Addiction Research and Theory" was devoted to a lively discussion about alcohol and CHD, with contributions from several leading researchers. In the final article, Fillmore and colleagues conclude by stating that "a careful reading of the contributions of the scientists commenting on our work should result in the conclusion that we simply do not know (if light alcohol consumption protects against CHD) – certainly not well enough to recommend regular alcohol intake for health reasons" (Fillmore et al., 2007, p.43). As noted, some evidence does suggest that the protective effect of alcohol on CHD declines with advancing age, at least among people over 75 years of age (Abbott et al., 2002). It should also be remembered that even when these purported health benefits are taken into account, the net consequences of alcohol use among the elderly are negative and result in significant health costs to society (WHO, 2007).

The risk of cerebrovascular disease (stroke) also increases significantly with age. There are several subtypes of stroke, the most common being ischemic stroke and haemorrhagic stroke, which are affected differently by alcohol. For ischemic stroke (the predominant subtype), the weight of evidence suggests effects similar to those reported for CHD; namely that low to moderate consumption may offer some protection (Ferreira & Weems, 2008). Conversely, research clearly shows that alcohol intake has mainly detrimental effects

on haemorrhagic stroke (Ferreira & Weems, 2008). It is conceivable, however, that the misclassification issues described in relation to CHD may equally apply to the positive findings associated with ischemic stroke, and this possibility has not yet been researched (Fillmore et al., 2007).

In addition to the purported physical health benefits outlined here, research indicates that there are psychosocial benefits of moderate alcohol consumption (Ferreira & Weems, 2008). For many people, increasing age is associated with varying degrees of loss, reduced financial independence, loneliness and reduced mobility. To offset these stressors, moderate alcohol consumption can provide a means to relax, socialise and enjoy the company of family and friends, all of which have been shown to improve self-perceived quality of life among elderly people. In one US study involving elderly retirement communities, moderate consumption was associated with improved social interaction and self-reported health status (Adams, 1996). In an Australian study involving women aged 70 years and older, moderate consumption was found to be positively associated with health-related quality of life and survival. Conversely, abstention and infrequent consumption was negatively associated with health-related quality of life and survival (Byles et al., 2006). Most investigations report significant associations between light drinking and positive psychosocial outcomes. Therefore, drawing conclusions regarding the causal effect of alcohol from these studies is tenuous. It may be, for example, that socialisation is responsible for these effects, and drinking provides an opportunity to facilitate this activity. Nevertheless, these benefits are real for many individuals and should not be overlooked in the wider context of alcohol related harms.

### **Alcohol consumption guidelines**

Rising alcohol related problems in many parts of Europe, combined with increasing public awareness about the purported health effects of moderate drinking, has led some countries to publish alcohol consumption guidelines. This activity has arisen spontaneously in many parts of Europe, often at sub-national levels, and without any particular top-down encouragement by, for instance, the WHO which does not publish drinking guidelines (Rehm et al., 2008). Some public health researchers have been sceptical about alcohol consumption guidelines, both in terms of their questionable effect on behaviour and of the possibility of undesirable effects, such as people "drinking up" to specified limits. There are sound reasons for this scepticism; it is difficult to develop guidelines which take into account the myriad of factors that contribute to mortality and injury risk. For example, most guidelines are based on health-related harms but do not consider the significant social harms associated with consumption, or the variable risks connected to different patterns of consumption. One argument in favour of drinking guidelines is that the public has a right to be informed of the evidence linking various amounts of alcohol to different health outcomes. In principle, this approach gives individuals the opportunity to make informed decisions based on accurate information. However, population-based guidelines say little about how alcohol will affect individuals. What constitutes a low risk for one elderly person may be harmful to another and, consequently, there is a risk that some individuals may be harmed by following population-based recommendations. This is especially applicable to older adults, who on average are more sensitive to the effects of alcohol compared to younger adults. At present, there is little research on the impact of available guidelines on drinking behaviour and/or alcohol related harm (Walsh et al., 1998). In both Denmark

and the United Kingdom, sensible drinking messages based on the concept of unit drinks, whilst having an impact on knowledge, have had a very limited impact on behaviour (Anderson and Baumberg, 2006).

Despite these difficulties, alcohol consumption guidelines have been published in several countries for specific age groups, including the elderly. While some guidelines appear to be based on a review of the scientific literature (e.g., see the Australian Guidelines to Reduce Health Risks from Drinking Alcohol, 2009), it is clear that others are more arbitrary (Rehm, et al., 2008) – this is particularly true of age-specific guidelines which often appear to be the same as adult guidelines with conditional warnings. Among those available, most recommend no more than 4 standard drinks per day for men and no more than two for women, with at least one alcohol-free day per week. In contrast, a recent publication by Rehm et al (2008) measuring the lifetime risk of alcohol-attributable mortality has recommended that adult men and women should not exceed a volume of two standard drinks per day (or 20 g of pure alcohol) for chronic disease mortality, and no more than three or four drinks for occasional (single session) drinking. Drinking levels above two drinks per day were associated with avoidable health risks among adults. Their results suggest that current drinking guidelines in Germany, France, Ireland, Spain and the United Kingdom, which recommend up to 3–4 standard drinks per day for adult men, may underestimate the health risks associated with alcohol consumption at these levels.

## Chapter 3:

### Issues relevant to elderly populations

The research outlined in previous sections indicates that age can mediate the effects of alcohol on health and well-being. Due to physical differences in metabolism and body composition, older adults are generally more susceptible to the effects of alcohol than younger adults. These differences – some of which have only recently been recognised in the scientific literature – complicate the relationship between consumption and well-being. They also raise a number of issues concerning alcohol, the elderly and injury, screening and detection, interactions with medication, and alcohol and mental health.

#### **Injuries and accidents**

The three leading causes of death due to injury among elderly people in Europe are self-inflicted injuries, falls and road traffic injuries. Falls resulting in hip and bone fractures are common among elderly people and increase with age. Given alcohol's negative effect on motor skills, it is reasonable to assume that these age-related health risks might increase with consumption. However, the relationship between accidental injuries (including falls) and alcohol consumption is not entirely clear. A systematic review of 84 studies examining the health effects of alcohol use in older persons (age 60 plus) by Reid et al (2002) found an increased risk of falls or fall injuries associated with light to heavy alcohol consumption (> 21 drinks per week), compared to non drinkers (<1 drink per week), in only four out of twenty-six studies reviewed. Twenty-one studies found no association between increased use of alcohol and falls, and one study found that participants who reported daily use of alcohol had a decreased risk of falls compared to non-drinkers. Epidemiological studies have also reported associations between alcohol use and injuries among the elderly. Mukamal et al (2004) reported a significant, positive association between moderate alcohol consumption (i.e. two standard drinks per day)

and increased falls among older adults, and Kurzthaler et al (2005) reported that falls and injuries increased significantly among older people when alcohol consumption, even at low levels, was combined with benzodiazepines or other sedatives.

The effects of alcohol on driving skills and road trauma have been widely documented (e.g., Plurad et al., 2008; Caputo et al., 2006). Research indicates two accident "peaks" associated with age – the first peak occurs early in life, typically between about 18 and 25 years, when motor vehicle accidents are frequently caused by inexperience and high risk-taking behaviour. The second accident peak emerges around 65+ years, but for different reasons, namely slower coordination and reaction time. Eyesight problems may also play a role (Caputo et al., 2006). Research has shown that blood alcohol concentrations as low as 0.02 per cent can impair driving skills, and these effects may be exaggerated due to age-related changes in reaction speed or interactions with medication. Although complete bans on youth drink-driving are common across Europe due to the high prevalence of youth-involved traffic accidents, similar restrictions do not currently apply to older drivers, even though the effects of alcohol may be stronger among the elderly due to metabolic changes, which raises the question of whether age-related driving restrictions should be considered for elderly drivers.

#### **Interaction with medication**

Elderly people are the largest per capita consumers of prescription medication. Statistics from the Swedish Pharmaceutical Association show clearly that medication use increases markedly with age. There are many hazards associated with medication use by the elderly that may be categorised as follows: non-compliance, inappropriate prescribing, drug-alcohol interactions, adverse reactions, and interactions with other treatments. With respect to

alcohol consumption, the most significant issue is how alcohol interacts with prescription medication. Many older adults take medication that may interact negatively with alcohol. Some of these negative interactions are due to age-related changes in the absorption, distribution and metabolism of alcohol and medicine. Others are due to the exacerbation of adverse effects of medications when combined with alcohol, or to alcohol's interference with the effectiveness of some medicines. A recent article by Moore et al (2007) summarises the various adverse drug/alcohol interactions most common among elderly populations. The authors note that such interactions may significantly increase the risk of hypertension (especially when combined with drugs for depression), gastrointestinal bleeding, decreased drug metabolism, sedation and impaired psychomotor function (when combined with benzodiazepines), insomnia and depression (more commonly associated with heavy drinking), liver disease, seizures and breast cancer.

The concomitant use of alcohol and prescription medicines has been identified as a source of possible health risks in a recent Finnish study. Aira et al (2005) used a population-based random survey of 700 elderly home owners (75 years plus) to find out how many were consuming alcohol with both prescription and non-prescription medicines together. They found that 44 per cent of the sample reported using alcohol, and 87 per cent used medications on a regular basis, among them were medications known to have potential adverse interactions with alcohol. Given that the sample used in this study was not institutionalised, it is also likely that the proportion of elderly people in care who take medication is higher than the level reported in this research. A recent German study by Du et al (2008) used the 1998 German National Health Interview and Examination Survey to analyse data on concomitant alcohol and medication use

among 726 male and 879 female participants aged 60 to 79. In this study, the last-week prevalence was 20.1 per cent for the use of psychotropic drugs, 47 per cent for alcohol, 15 per cent for heavy drinking, and 8 per cent for combined psychotropic drug and alcohol use. These two studies demonstrate that alcohol and medication use is common among some elderly European populations and a potential cause for concern. The clinical importance of these interactions needs to be studied further.

### **Screening and detection**

Several studies indicate that alcohol problems among older adults are frequently undetected or misdiagnosed, which can prolong or exacerbate the various symptoms associated with harmful consumption (Klein and Jess, 2002; Lejoyeux et al., 2003). One primary care study identified 10 per cent of older patients as meeting the diagnostic criteria for alcohol dependence, yet fewer than half of those patients had documentation of an alcohol problem in their medical records (Callahan and Tierney, 1995). Early detection of an alcohol problem is important to ensure timely treatment, which in itself may improve treatment success, while also minimising the physical and mental health harms associated with prolonged hazardous alcohol use. There are several explanations for the poor detection or misdiagnosis of hazardous or risky alcohol use by the elderly. Older people may be less likely to disclose a history of excessive alcohol intake, a problem which is compounded by the fact that healthcare workers have a lower degree of suspicion when assessing older people (O'Connell et al., 2003). Healthcare workers may also fail to report or initiate the treatment of hazardous alcohol use in older people because they regard such drinking behaviour as understandable in the context of poor health and changing life circumstances. Moreover, the presentation of elderly people with alcohol use problems may be atypical

(such as falls, confusion, depression) or masked by co-morbid physical or psychiatric illnesses, which makes detection difficult.

One factor which appears to contribute significantly to under-detection is poor staff training. At present, most elderly care professionals working in Europe are not formally trained to recognise alcohol problems, and routine screening for harmful alcohol use rarely occurs in elderly residence centres (O'Connell et al., 2003). Hazardous drinking may also be left unidentified because of ageism, denial, coexisting disabilities or the unique pattern of late-onset drinking which frequently masks its presence and complicates the diagnosis. Prescription medication may produce side effects similar to intoxication, further complicating accurate detection. It has been suggested that current screening instruments and diagnostic criteria are geared towards younger people, which hampers detection efforts (Swedish National Institute of Public Health, 2007). However, evidence supporting this assertion is not strong. One of the most commonly used detection instruments, the Alcohol Use Disorders Identification Test (AUDIT), has been validated in seven countries using primary care populations, where elderly people are over-represented (Saunders et al., 1993). Moreover, the AUDIT does not contain any "age-specific" items which refer to, for example, school or work activities, which do not apply to elderly populations. Because of strong cross-cultural research that validates the AUDIT for use with various ethnic minority groups, it is also recommended for the screening of ethnic minority older adults (Sorocco and Ferrell, 2006). Another popular diagnostic instrument, the Michigan Alcohol Screening Test (MAST) includes a geriatric version which has been validated with older populations. The CAGE (Cut-down, Annoyed, Guilty, Eye-opener) has also been recommended as a useful alcohol screening instrument amongst

older adults (Sorocco and Ferrell, 2006). Two other screening measures that have received some empirical support are the Alcohol-Related Problems Survey (ARPS) and its shorter version (sh ARPS). Moore et al (2002) designed these measures to identify older people whose use of alcohol, especially in combination with medication, may be placing them at risk of injury or causing them harm. Another advantage of these measures is that they identify specific risks associated with alcohol use not revealed by other screening instruments, and therefore, may assist in treatment planning. Despite the availability of these age-specific measures of hazardous and harmful alcohol consumption, regular use of such instruments is rarely part of routine clinical practice in primary care in Europe.

#### **Alcohol and mental health**

The prevalence of depression and other health problems is significantly higher in elderly populations. Hazardous alcohol use can magnify existing health risks, and has been shown to be an independent risk factor of suicide in elderly populations, reinforcing the importance of screening and early detection of hazardous alcohol use (Waern, 2003). The comorbidity of alcohol dependence with mental health problems is high, both in clinical and general population studies (Heather, 2001). The critical question in this respect is about causation. While the causality of the relation is hard to define, sufficient evidence exists to assume alcohol's causal role in depression, a high prevalence disorder affecting at least one in ten adults and up to twice as many elderly people. Among alcohol consumers in the general population, higher volume of consumption is associated with more symptoms of depression, and among patients in treatment for alcohol dependence, the prevalence of major depression is higher than in the general population (Ferreira & Weems, 2008). A higher prevalence of alcohol use disorders has also been



documented for patients in treatment for depression (Ferriera and Weems, 2008). At the individual level, it is often difficult to establish whether depression caused the alcohol dependence or *visa versa*. However, there is clear evidence that abstinence substantially removes depressive symptoms in alcohol dependent people within a short timeframe, which supports the strength of the association between alcohol and depression in general (Corrao et al., 2000).

Alzheimer's disease and vascular dementia are also public health concerns for ageing European adults (WHO, 2007). Some of the detrimental effects of heavy alcohol use on brain function are similar to those observed with Alzheimer's disease. Ethanol and acetaldehyde are toxins that negatively affect neural tissues, and chronic heavy intake of ethanol is associated with an increased risk of alcohol-related central nervous system disease and dementia in elderly people (Tyas, 2002). While the toxic effects of long-term, heavy alcohol intake on the central nervous system are well known, there is emerging evidence to suggest that moderate alcohol intake (one to three standard drinks per day) may be associated with a reduced risk of developing Alzheimer's disease and vascular dementia (Ruitenberget al., 2002; Mukamal et al., 2003). Carriers of the apoE4 allele, a marker of dementia development, achieve a risk reduction with an alcohol intake at the lower end of the moderate range (i.e., about one drink per day) (Finder & Sandler, 2004). But the association appears to differ by alcohol beverage type (i.e., beer, wine and spirits). For example, when consumed in moderation, wine may confer protective effects, whereas beer appears to confer a greater risk of dementia. Overall, however, epidemiological studies investigating the relationship between alcohol use and Alzheimer's have not provided strong evidence to suggest that alcohol use influences the risk of developing the disease, unless at high levels for a pro-

longed period of time. Due to the expected increase in the number of ageing women and men in Europe, additional research should aim to clarify these findings, and should also take into account the methodological problems described by Fillmore et al (2006) in heart disease studies.

## Conclusions

Across all ages, including the elderly, hazardous alcohol consumption is associated with detrimental health outcomes; alcohol carries a high disease burden and has been linked to more than sixty health problems. Evidence suggests that older people are more sensitive to the physical and cognitive effects of alcohol. This fact, combined with rapid demographic changes, lower average prices and greater availability of alcohol across Europe, suggests that increasing numbers of elderly people will exhibit alcohol related problems in the near future. In light of the minimal research published on this topic to date, a report about alcohol and the elderly in Europe appears timely.

It is likely that current estimates of alcohol related mortality among the elderly (around 6 per cent) under-represent the extent of the problem due to inadequate screening, detection and reporting of harmful alcohol use among older adults. The general health risks connected with ageing complicate and magnify the risks associated with alcohol. There is considerable debate regarding the purported health benefits of light alcohol consumption by the elderly, however, if a benefit does exist, those most likely to experience a positive effect are older people at high risk of coronary heart disease and ischemic stroke, and at low risk of injury, cirrhosis and other alcohol related diseases. To the author's knowledge, the net impact of alcohol consumption on the health of elderly Europeans has not yet been reported, but it has been estimated on a worldwide basis for all ages. Globally, alcohol

is estimated to cause a net harm of 3.7 per cent of all deaths and accounts for about 10 per cent of the disease burden in Europe (WHO, 2004). Yet amid the significant illness and injury that alcohol causes, it is also an undeniable source of pleasure, relaxation and social benefit for many – benefits which themselves are linked to positive health outcomes, and which should not be overlooked. These respective risks and benefits present a dilemma for public-health policymakers, who are faced with the challenge of developing feasible health promotion messages and policies that minimise the deleterious effects of alcohol while maximising the social and health benefits. The next two Chapters present data on current alcohol consumption and related harm trends among elderly Europeans, including the economic costs associated with consumption and the extent of staff training and detection in elderly care and healthcare.

## Chapter 4:

# Alcohol consumption trends and their impact in Europe

This chapter begins with a brief description of alcohol consumption trends and related harms across Europe for all ages (15 plus). This information provides a useful context for the data about elderly Europeans presented later in this chapter. Most of the information presented here has been borrowed from the report "Alcohol in Europe" by Peter Anderson and Ben Baumberg (2006), also written for the European Commission.

Globally, alcohol use is estimated to account for 1.8 million deaths and 4 per cent of the disease burden. In the European Region as a whole, however, the figure in 2002 was more than twice as high at 10.8 per cent, and it is estimated that 600 000 people died prematurely that year from alcohol related causes (WHO, 2007). Alcohol use and abuse also accounts for a disproportionate amount of lost life due to disability and illness in Europe, as shown in table 3 below. Alcohol use was thus the third most important risk factor for disease burden comparatively assessed in the European region, being surpassed only by hypertension and tobacco use. There are also striking differences between the different parts of Europe; while alcohol use accounts for only 1.5 per cent of the disease burden among women in some countries in the west of the region, it accounts for as much as 22 per cent among men in some

of the countries of Eastern Europe. The burden of alcohol-related disease is several times higher among men than among women in all parts of the region. Nevertheless, women figure more prominently among those who are injured or have social problems caused by other people's drinking.

The average total volume of alcohol consumed by adults in Europe has fallen from approximately 15 litres per year (100% alcohol) in 1997 to 11 litres per year per adult in 2005. Despite this reduction, the EU remains the heaviest drinking region in the world. Between countries, average consumption levels have begun to even out or "harmonise" over the last 40 years, but differences in the type and pattern of consumption still exist between regions. On average, Northern Europeans drink mostly beer, while those in Southern Europe drink relatively more wine. Increasingly, Northern Europe is consuming more wine than previously, and less spirits. While the level of daily drinking also shows a north-south gradient, frequent weekly drinking appears to be more common in Central Europe. Most Europeans drink alcohol, but about 15 per cent abstain for medical, social or lifestyle-related reasons. When abstainers are removed from the data, average consumption remains at around 15 litres of alcohol per adult

	European Region		World	
	Total	Percentage of all alcohol-attributable DALYs	Total	Percentage of all alcohol-attributable DALYs
Maternal and perinatal conditions	14	0.1	111	0.2
Cancer	858	5.5	4 175	7.0
Neuropsychiatric conditions	5 195	33.2	22 701	38.2
Vascular conditions	1 169	7.5	3 693	6.2
Other noncommunicable diseases	1 607	10.3	4 175	7.0
Unintentional injuries	4 867	31.1	17 044	28.7
Intentional injuries	1 933	12.4	7 452	12.6
All alcohol-attributable DALYs	15 643	100.0	59 351	100.0
Alcohol-attributable DALYs as a percentage of all DALYs	10.8		4	

Table 3: Alcohol related disease burden in DALYs (000s) in 2002 by disease category.

each year. Beer accounts for the largest proportion of alcohol consumed (around 44 per cent of the total volume) with the rest divided between wine and spirits.

Binge drinking patterns also vary across Europe, with Southern Europeans reporting less (average) monthly heavy drinking sessions than Central and Northern Europeans. Studies of binge drinking show occasional exceptions to the heavy pattern of drinking typical of Northern Europe. In particular, Sweden has one of the lowest rates of binge drinking (taking in to account all age groups). Adults report getting drunk about five times per year, but binge drink (five or more drinks on a single occasion) about seventeen times per year. This is the equivalent of 40 million EU citizens "drinking too much" monthly and 100 million (or about one in three) binge drinking at least once a month. It has also been estimated that about five per cent of European men and one per cent of European women are dependent on alcohol in any one year. On average, European men drink substantially more than women, and in riskier ways. Patterns of drinking also appear to be influenced by socio-economic status (SES), where people with low SES are less likely to drink alcohol at all. However, getting drunk and becoming dependent on alcohol are both more likely among drinkers of low SES.

The European Commission's 2007 report "Attitudes towards alcohol" provides additional information about recent consumption trends by elderly Europeans, measured between 2003 and 2006. The main findings are:

- Europeans aged 55+ are the largest group of abstainers from alcohol (33% compared to 19% of respondents aged 40–54);
- Older Europeans report the highest frequency of alcohol consumption (27% indicate daily alcohol use, compared to 12% of 40–54 year olds) (due to questionnaire wording changes, comparisons with 2003 were not possible);
- Across all ages, men tend to drink more heavily than women, and more frequently;
- Older Europeans report the lowest level of heavy and binge drinking, compared to other ages, with most consuming 1–2 drinks per occasion;
- Although more Europeans now report consuming alcohol than three years ago, the proportion of people who drink 3–4 drinks in one sitting has decreased slightly in favour of having 1–2 drinks or even less. Although the total number (all ages) reporting having four or more drinks in one sitting has remained stable since 2003.
- Young people remain the riskiest consumers of alcohol in Europe.

### **European alcohol consumption trends (all ages)**

This section of the report presents information and statistics on alcohol consumption, related harms, economic costs and staff training to identify alcohol use problems, from ten EU Member States, starting with an overview of the situation in Scandinavia.

#### **Alcohol consumption among the elderly in Scandinavia – an overview**

In 2007, the Nordic Centre for Welfare and Social Issues (NVC; formerly the Council for Alcohol and Drug Research, NAD) launched a project which aimed to evaluate the scope of Nordic research concerning alcohol use and the elderly. In 2008, NAD published its findings in the report "Åldrande och bruk av alkohol: En summerande översikt av nordisk forskning och diskussion" ("Ageing and the use of alcohol: A summary review of Nordic research and debate." Jyrkämä and Haapamäki, 2008). A summary of the report is outlined below.

Consistent with demographic changes across the EU, the Nordic countries (Finland, Sweden, Norway, Denmark, and Iceland) are rapidly ageing. At the same time, major changes are taking place with regard to alcohol policies, particularly alcohol availability. These changes have recently generated debate across the Nordic countries, particularly in Finland, about alcohol use among older people. The prevailing view is that alcohol consumption is on the rise among older people, presenting a challenge not only to care services for the elderly and to researchers, but also to the sense of tolerance in society at large. The NAD review of Nordic research on alcohol use among older people indicates that in the long term, alcohol use among older people is indeed increasing. On the other hand, there is no immediate indication of a sharp or dramatic increase in consumption. The same applies to heavy alcohol consumption: older people do not seem

to differ from the wider population, and if they do, they appear less inclined to drink heavily.

Assessing the full extent of the problem, and indeed assessing whether or not one exists, is difficult due to the current paucity of research. To date, the topic has not drawn serious research interest. It is also possible that research is failing to keep up with developments. Alcohol research has deeply-rooted traditions of its own, particularly with respect to its classifications, and remains firmly focused on health-related issues. No research designs have been developed for an examination of the bigger picture and of how the various dimensions involved are interwoven. The difficulty may also lie in the phenomenon itself: alcohol use among older people is a morally charged issue, which may explain why it tends to remain hidden in research even more often than alcohol use in other groups.

With an ageing population, it is possible that average alcohol consumption among older people will increase. At the very least, the absolute number of older people consuming alcohol and suffering alcohol related harms is likely to rise. Much will depend on what happens in consumption trends, alcohol culture and alcohol policy in general. The NAD review clearly suggests that more information is needed from all the Nordic countries about changes in alcohol use on the one hand, and about ongoing changes in ageing on the other. Key among these changes are the continuing growth of the elderly population, changes in age phases, the ongoing generational changes, cultural changes and above all changes in elderly policy and their impacts on older people's everyday life.

# Alcohol consumption and related harm trends in 10 EU countries: Finland

## Background

The information presented by Finland is based on published scientific literature, articles in the press and statistics from the Finnish National Institute for Health and Welfare and Statistics of Finland. The description of drinking habits is based on a series of surveys on Health Behavior and Health among Finnish Elderly conducted biannually since 1985 by the National Public Health Institute.

## Alcohol consumption

Between 1998 and 2007, total per capita alcohol consumption (both recorded and estimates of unrecorded consumption) increased 19 per cent in Finland, with the highest increase recorded between 2003 and 2004. This change was attributable to several factors. In January 2004, quotas for travellers' tax-free alcohol imports from other European Union Member States were abolished, and in March 2004, the prices of alcoholic beverages were lowered by 33 per cent on average. The relative decrease was higher for strong alcoholic beverages (44 per cent) than for beer (32 per cent) and wine (10 per cent).

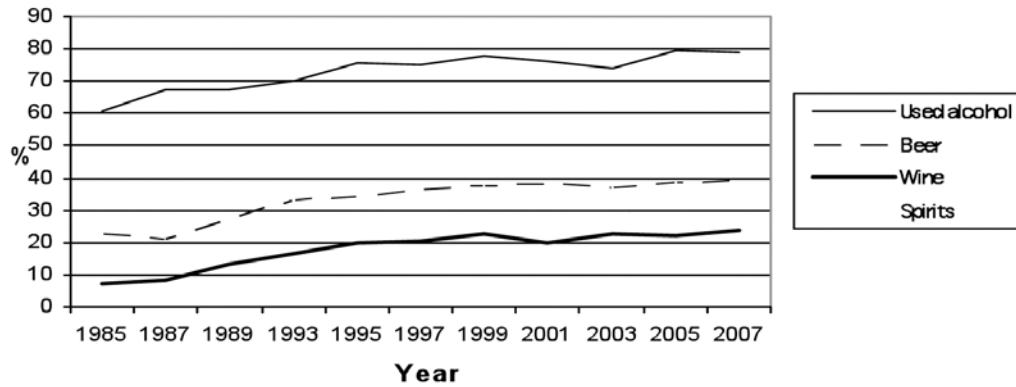
## Abstinence

The prevalence of retired abstainers decreased consistently between 1985 and 2007 in Finland. In 2007, 23 per cent of men and 46 per cent of women in the age group 65–84 years reported that they had not consumed any alcoholic beverages during the last year, whereas in 1993 the corresponding figures were 32 per cent for men and 63 per cent for women, respectively. In the short-term, even the lifetime prevalence of abstinence has decreased markedly; in 2005 it was 42 per cent and in 2007 only 36 per cent.

## Frequency

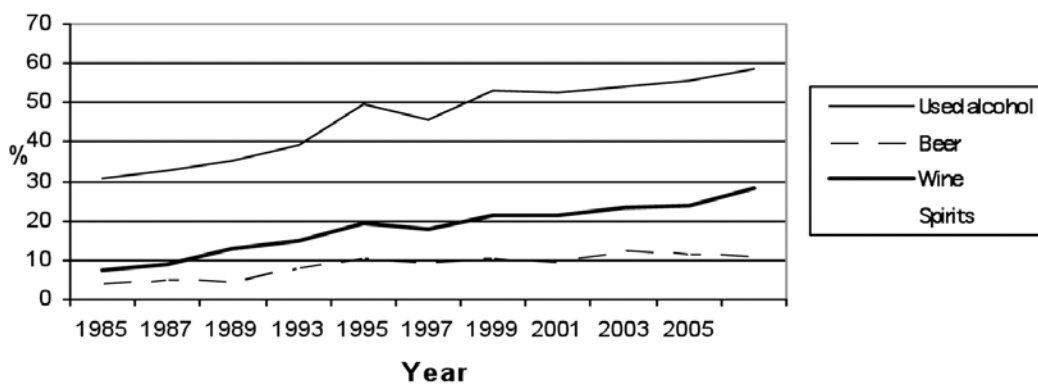
Between 1993 and 2007, the prevalence of drinking at least once a week has increased among both retired men and women. However, since 2005, the prevalence of drinking at least once a week has not increased among 65–84 year-old women. Among men there is a slight increase in this age group. In 2007, 38 per cent of retired men and 17 per cent of retired women reported that they had used alcoholic beverages at least once a week. Weekly prevalence of drinking was higher among younger than older respondents and among those who had a higher education than among those who had a lower education. Among men, the consumption of all alcoholic beverages – especially strong alcoholic beverages – has increased between 1985 and 2007 (Figures 1–2). However, among women only the consumption of wine has increased. Between 1985 and 2007, the proportion of men who drank at least eight alcoholic beverage portions (one portion corresponds to 12 g of 100 per cent alcohol) per week increased among 65–79 year-olds, with the highest increase among 65–74 year-olds (Figures 3–4). There was no change between 1993 and 2007 among 80–84 year-old men regarding the number who consumed eight or more alcoholic beverage portions per week. The proportion of men who drank at least eight alcoholic beverage portions weekly between 2001–2003 and 2005–2007 increased among 65–69 year-old men. However, among 70–74 year-old men, the proportions have decreased. In 2007, the differences in the proportions between age groups were as big as they were in the early 2000s, before the convergence between different age groups had taken place. The proportion of 65–74 year-old women who drink alcoholic beverages at least eight times per week has increased continuously since 2001. Among women in the age group 75–84 years, drinking at least eight portions of alcohol weekly is uncommon.

**Figure 1. Age standardized proportions of those 65–79 year-old men who have drunk alcohol during the last 12 months and who have drunk beer, wine and strong alcohol during the last week in 1985–2007 (%)**



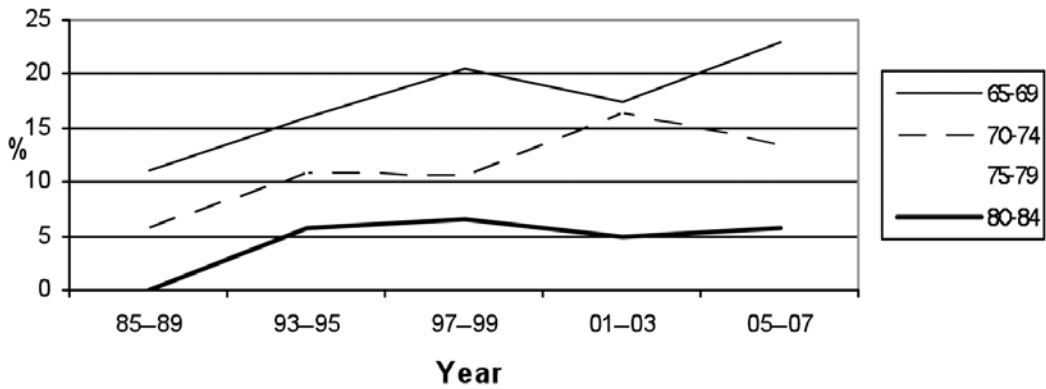
Source: Laitelainen, Helakorpi & Uutela 2008

**Figure 2. Age standardized proportions of those 65–79 year-old women who have drunk alcohol during the last 12 months and who have drunk beer, wine and strong alcohol during the last week in 1985–2007 (%)**



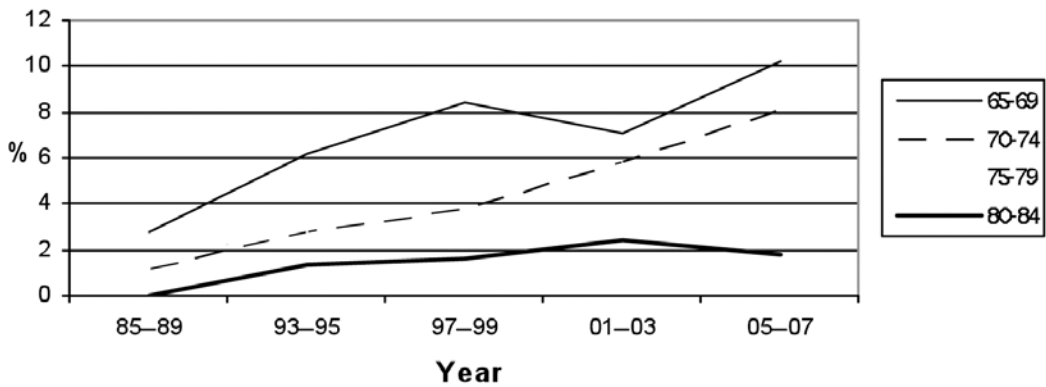
Source: Laitelainen, Helakorpi & Uutela 2008

**Figure 3. Proportion of those, among 69-79 year-old respondents who drink alcohol at least 8 portions weekly (men), by age group in 1985-2007 (%)**



Source: Laitelainen, Helakorpi & Uutela 2008

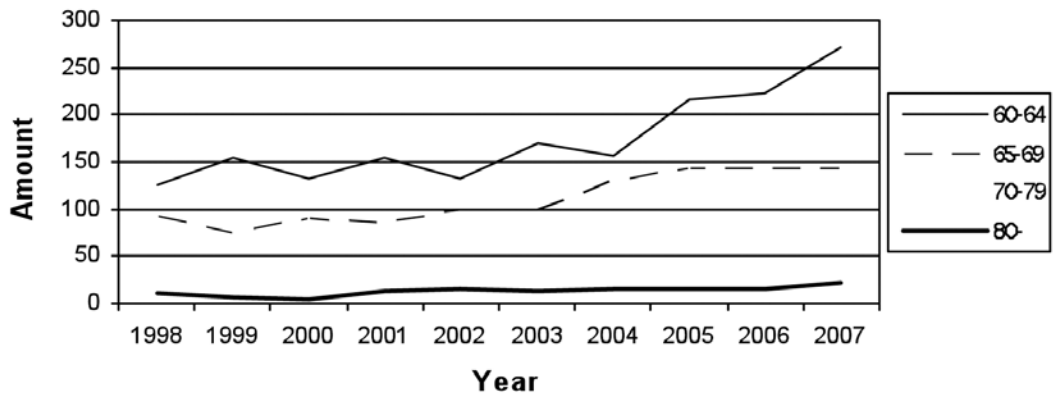
**Figure 4. Proportion of those, among 69-79 year-old respondents who drink alcohol at least 5 portions weekly (women), by age group in 1985-2007 (%)**



Source: Laitelainen, Helakorpi & Uutela 2008

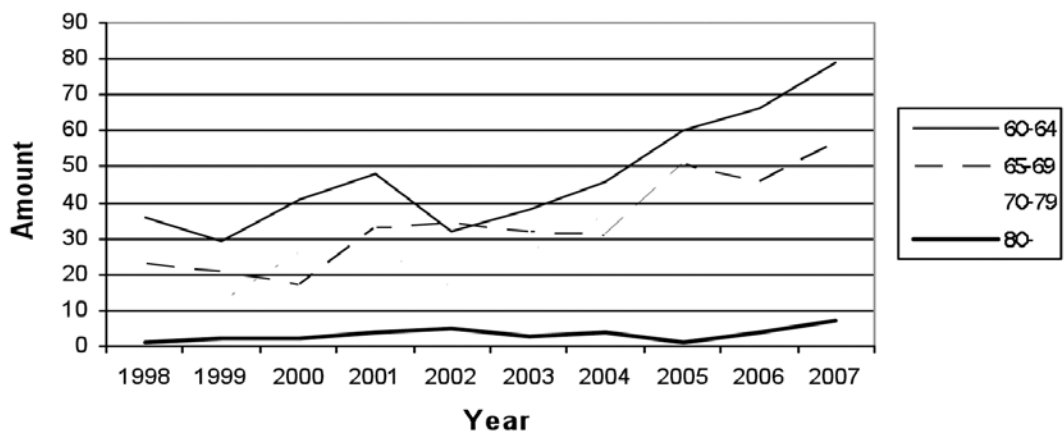


**Figure 5. Alcohol related deaths: alcohol attributable disease or poisoning among men, by age group in 1998-2007**



Source: Statistics Finland

**Figure 6. Alcohol related deaths: alcohol attributable disease or poisoning among women, by age group in 1998-2007**



Source: Statistics Finland

### **Alcohol-related deaths**

Deaths from alcohol-attributable diseases and poisonings in the age group of 60 years and older more than doubled between 1998 and 2007 (Figures 5–6). In 2004, total (all age) per capita consumption of alcohol increased 10 per cent, and has remained at that level ever since. The increase in alcohol consumption resulted in a dramatic increase in deaths from alcohol-attributable diseases and poisonings in both men and women. The growth in alcohol-related mortality was clearly largest in the 50–70 year-olds, while it was nonexistent among men (but not women) aged 35 and younger. Closer analysis of differences between age groups between 2004 and 2007 shows that the increase was biggest among 65–69 year olds, followed by 60–64 year-old men and women in the same age group.

Between 1998 and 2007, the increase in the amount of accidental and violent deaths with alcohol intoxication as a contributory cause in the age group 60 plus was smaller than that of deaths from alcohol-attributable diseases and poisonings. In figure 7, accidental and violent deaths are given for both genders because the rate for women was very low.

### **Alcohol-related hospitalisations**

Between 1998 and 2007, alcohol related hospitalisations among the elderly (60+) also rose, but the increase was smaller than the rise in alcohol-related deaths from alcohol-attributable diseases and poisonings (Figures 8–9). The increase in hospital discharges between 2003 and 2004 was strongly associated with age. There were no increases in alcohol-related hospitalisations in the age group of 15–44 in 2004, but rather a slight decrease. The increase mainly concerned those over 45 years: a 9 per cent increase among those aged 45–54 years, a

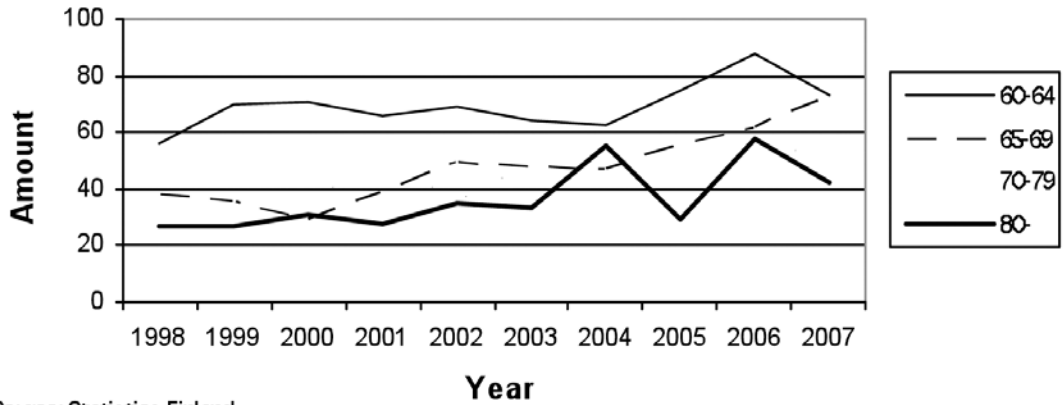
25 per cent rise among 55–64 year olds and an 11 per cent rise among those aged 65 plus. The increase in alcohol-related hospitalisations was the biggest in the age group 60–64 years, both among men and women (Figures 8–9).

### **Service Use**

Between 1998 and 2007, the increase in the number of clients in institutions that provide care for substance abusers was smaller than the increase in alcohol-related deaths from alcohol-attributable diseases and poisonings (Figures 10–11).

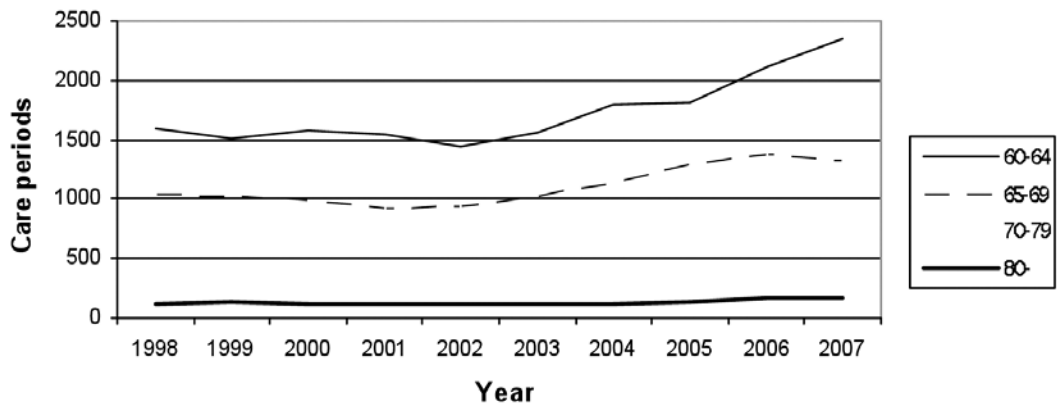
The increase in the number of clients in institutions that provide care for substance abusers was greatest in the 60–64 year age group for both men and women (Figures 10–11). The amount of clients in institutions that provide care for substance abusers does not, however, directly describe the demand for treatment as the number of treatment episodes are affected by local authorities' commitment to pay for treatment in substance abuse units. A national report describing the situation for the whole population from 2005, states that the supply of services for substance abusers has not been able to respond to the increasing need for such services (Inkeroinen & Partanen, 2006). Additionally, problem users with serious and immediate needs have frequently been left without treatment as a consequence of lengthy waiting lists, great distances to service units, and a shift among service providers favouring the more socially integrated problem users able to commit themselves to an intensive treatment relationship. When service demand exceeds supply under these conditions, the elderly are one group that could be marginalized from adequate and timely treatment.

**Figure 7. Accidental and violent deaths with alcohol intoxication as a contributory cause, by age group in 1998-2007**

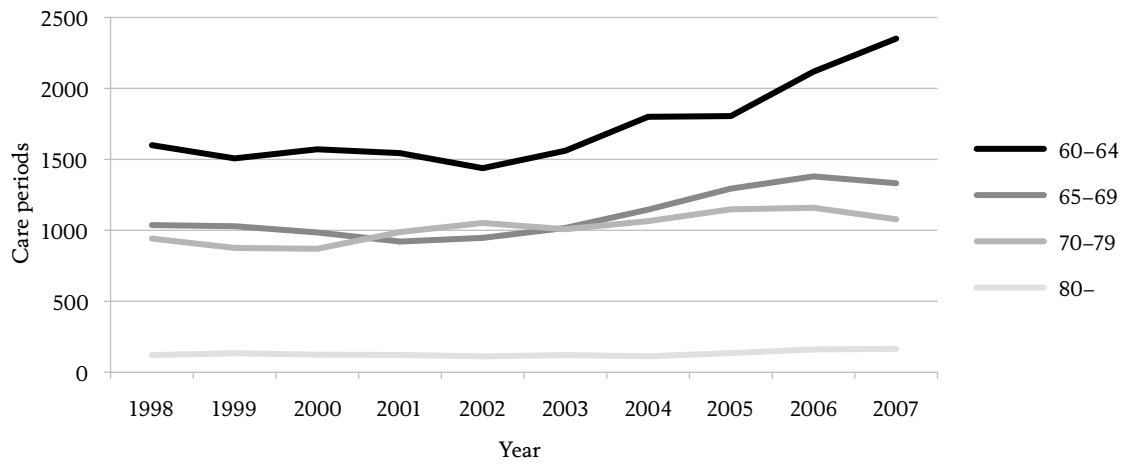


Source: Statistics Finland

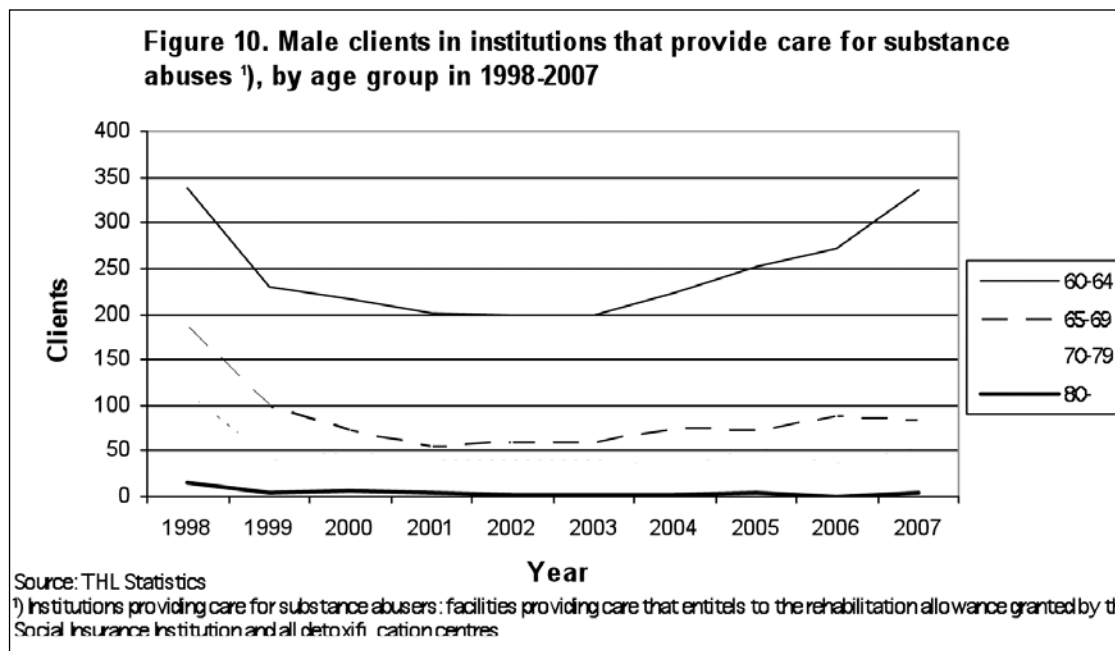
**Figure 8. Alcohol-related hospitalizations among men, by age group in 1998-2007**



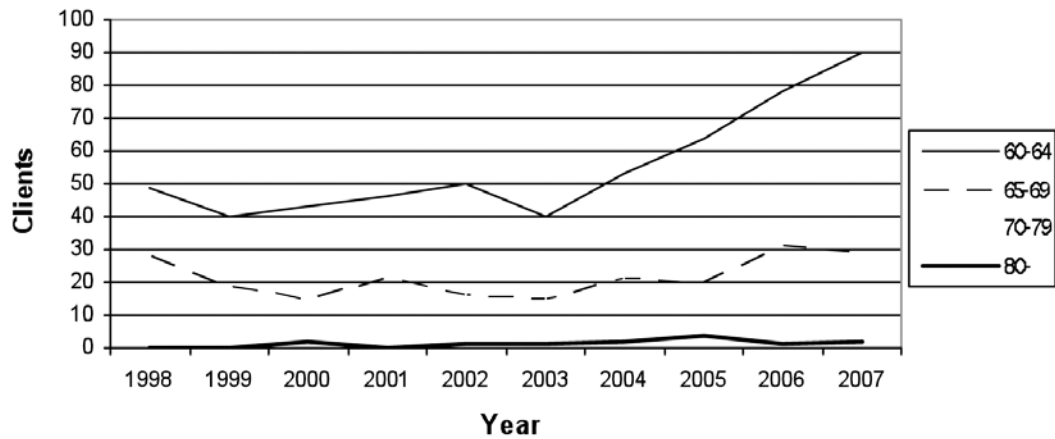
Source: THL Statistics



**Figure 9:** Alcohol-related hospitalizations among men, by age group in 1998–2007.  
**Source:** THL Statistics



**Figure 11. Female clients in institutions that provide care for substance abuses <sup>1)</sup>, by age group in 1998-2007**



Source: THL Statistics

<sup>1)</sup> Institutions providing care for substance abusers: facilities providing care that entitles to the rehabilitation allowance granted the Social Insurance Institution and all detoxification centres

### Economic Costs

The social costs of alcohol-related harm in Finland were assessed in 2003. Unfortunately, the costs were not evaluated by age groups. In 2006, Finnish society paid between EUR 0.7 and 0.9 billion in direct costs and between EUR 3.1 and 5.8 billion in indirect costs caused by alcohol. More than a third of the direct costs were caused by public disturbances. Healthcare accounted for one quarter and social services for just over a fifth of the direct costs caused by alcohol-related harm. Indirect costs continued to increase in 2006 due to the increase in alcohol-related sick days (Yearbook of Alcohol and Drug Statistics, 2008). The calculations do not allow comparisons between age groups.

### Alcohol Consumption Guidelines

The Finnish Ministry of Social Affairs and Health has not given official guidelines on alcohol consumption for the elderly. However, it published recommendations in a manual in 2006, *Otetaan selvää! Ikääntyminen, alkoholi ja lääkkeet* (Let's find out! Aging, alcohol and

medicine). The recommendation, no more than 2 portions of alcohol in one sitting for 65 year-olds or older, is based on the guidelines for American Geriatrics.

### Training of Healthcare Staff to Recognise Alcohol Dependence and Related Problems

The Ministry of Social Affairs and Health has not organised centralised training of healthcare staff to recognise alcohol dependence and related problems in the elderly. However, some non-governmental organisations have projects that aim to prevent alcohol-related harm among the elderly. For instance, in the City of Espoo, in Lippajärvi-Jupperi's home care service, a special model has been developed with a non-governmental organisation, *Sininauhaliitto* (the Finnish Blue Ribbon) and the Finnish Nurses' Association to tackle alcohol-related problems among the elderly. The model of operation is based on early intervention. The question of substance abuse is taken up when treatment and service plans for home care are drafted. The issue can be dealt with in connection with a mini nutritional

analysis by having the client do the Audit test. When needed, a more comprehensive alcohol mini-intervention is arranged and the information is recorded in the client information database. The main focus is on health-promoting activities and on increasing the quality of everyday life for the elderly, in cooperation with their caregivers and support services. The responsibility for treatment lies with the nurse in charge and the care team, but expertise in addiction services is also necessary. For example, a drink diary can be utilised to track the client's drinking. In addition, a pharmacy agreement is developed in order to control overuse of pharmaceuticals. Outside experts, such as a social worker and an addiction worker, will also take part in the treatment assessments during team meetings. Clients are assessed to determine if there is any need for treatment, and where appropriate, encouraged to contact mental health and addiction services. If the client refuses further treatment, good basic care is provided at home. If the client is under the influence and cannot be left alone at home after the visit, the doctor in charge, the local health centre or a detoxification centre is consulted. In all treatment situations, the safety of the staff and adequate work supervision must be ensured.

Five-day process training was arranged for the home care team, in support of building the new model of operation. During training, the group critically examined how they worked with clients, and discussed the values, attitudes, beliefs, assumptions and prejudices associated with substance abuse among the elderly. The workers assessed the training and the model of operations using SWOT analysis and evaluation discussions, six months after the model was introduced.

Another example is the new training folder "Ikääntyvän hyvinvointi ja alkoholi (Well-being and alcohol among the elderly)" developed by the Sininauhaliitto (the Finnish Blue Ribbon), a non-governmental organisation.

The folder gives basic information on alcohol consumption, encourages staff to discuss the elderly persons' well-being through experiences in alcohol use, nutrition, exercise and social contacts. The target group of the folder consists of training service providers, associations and non-profit organisations. The folder includes many exercises which can be used in group discussions as well.

# Sweden

## Background

Swedish alcohol data has been compiled monthly since the early 2000s, initially by the Temo Institute (now called Synovate), at the request of SoRAD (Centre for Social Research on Alcohol and Drugs), Stockholm University. The data collection project is funded by the Swedish government. All alcohol data is collected monthly by phone interviews. Towards the end of each month, participants are randomly selected from the public phone list. In total, 1,500 responses are collected monthly using this method (18,000 per year). Questions are framed to seek information about consumption during the last 30 days (corresponding with the last calendar month). The response rate has varied from about 60 per cent when the survey first began, to just under 50 per cent in recent years. The alcohol consumption questions come from the Quantity-Frequency Scale (QFS), which includes one item about binge drinking (early versions included questions about alcohol related harm). The main purpose of the survey, however, is to measure unrecorded consumption (i.e., all alcohol consumed by Swedes but not recorded in Sweden).

## Alcohol consumption

During the 2000s in Sweden, alcohol consumption reached a new and higher level while recorded sales have been relatively stable. Total consumption (for those aged 15+) is estimated at 9.7 litres of pure alcohol per resident. Much of the alcohol consumption in Sweden now comes from private imports whose share was estimated at 19 per cent in 2006. In the last seven years, sales figures show that annual consumption has amounted to about 10 litres of pure alcohol per adult, which is a historically very high level. Compared with the latter part of the 1990s, this represents an increase of about 2.5 litres, or slightly more than 30 per cent. The greatest increases have occurred in wine and beer drinking;

a preference which has been influenced by reduced prices and increased availability due in large part to Sweden's integration with the EU, and a drinking "culture" shift away from spirits and high alcohol content beverages.

Interestingly, average alcohol consumption (in litres of 100% alcohol, per year) decreased slightly across all age groups in Sweden between 2002 and 2007, except among the elderly, where it increased by 0.1 litres among both men and women (Figure 1). This was also the only age group to report a small increase in the frequency of drinking during the past week between 2002 and 2007, although the significance of this increase is unclear. The recent trend in self-reported consumption among all adults (including young adults) is towards slightly less total alcohol consumption. Similarly, all adults report binge drinking to a lesser extent in 2007 compared to 2002 (3.8 per cent to 2.9 per cent among women, and from 12.2 per cent to 11.7 per cent among all men). Elderly men and women report binge drinking during the last week less than all adults (only 0.5 per cent for elderly women and 2.5 per cent for men) (See Figure 2). There have also been recent shifts in the average frequency of alcohol consumption by the elderly, especially with regard to wine. For example, in 2007, 33 per cent of women compared to 26 per cent of all adults reported drinking wine at least once a week. Women reported drinking wine more frequently than men in both 2002 and 2007, but men drank strong beer more often than women. Overall, however, it can be said that elderly women drink less alcohol than elderly men, and the elderly drink less alcohol, and are intoxicated less often compared to all adults.

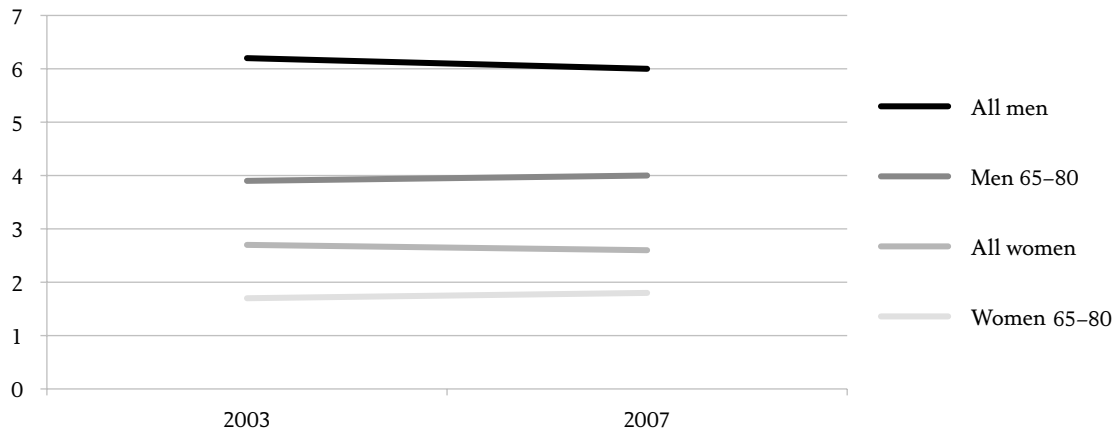


Figure 1: Average alcohol consumption in liters per year by age and sex, Sweden 2003–2007.

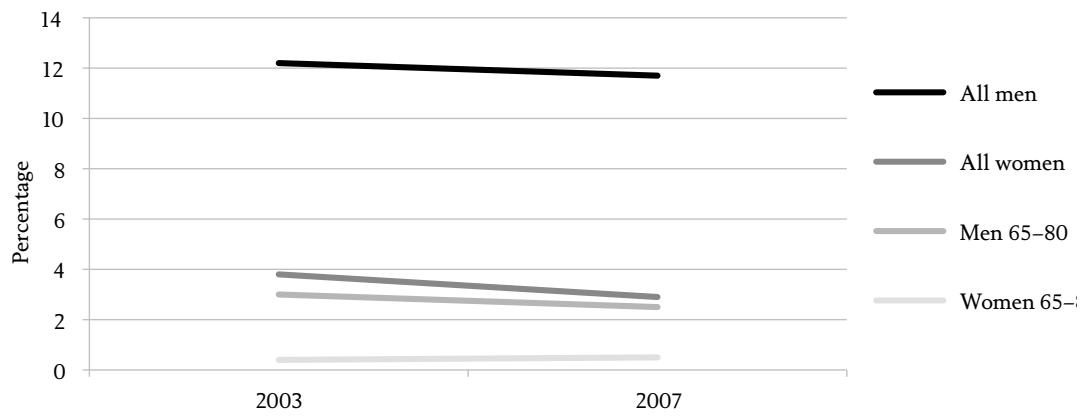


Figure 2: Binge drinking (at least 1g) per week by sex and age 2003–2007.

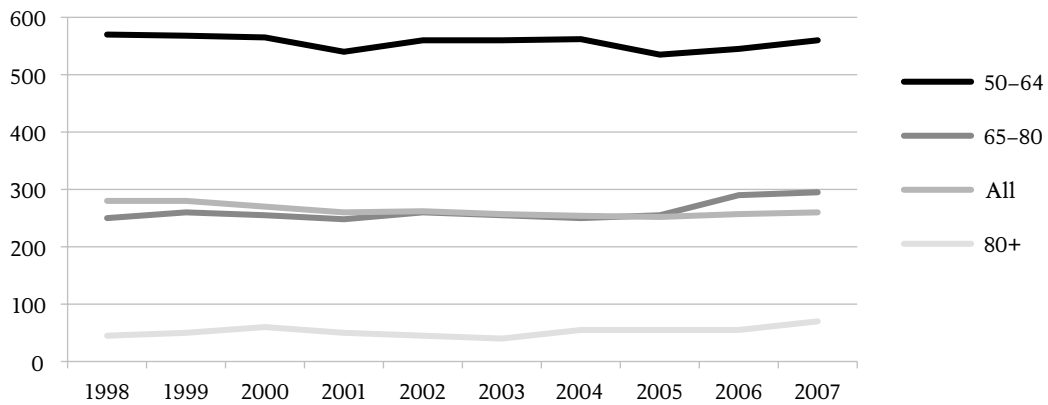


Figure 3: Male alcohol related hospitalisations per 100,000 by age (1998–2007).



### **Alcohol related hospitalisations**

Trends in alcohol related hospitalisations based on all ICD-10 categories where alcohol is the main cause among men and women are shown in Figures 3 and 4, below. These figures include all alcohol specific diagnoses and are based on the number of patients admitted (not the number of admissions). Data comes from all hospitals in Sweden. Across all ages, the number of alcohol related treatment episodes increased 18 per cent between 1998 and 2006. Among both men and women, adults aged 50–64 present with alcohol related diagnoses more than all other age groups, especially among men. Three important trends are worth noting here. Firstly, across all ages, including the elderly, men are over-represented in alcohol related hospitalisation data. This trend is most likely due to the higher average alcohol consumption by men, and more frequent heavy drinking, which is consistently related to greater alcohol related harm. Secondly, unlike elderly women, the proportion of elderly men aged 65–80 hospitalised with an alcohol related diagnosis is greater than the total number of alcohol related hospitalisations for "all adult men", which again points to a potential problem among elderly male drinkers. Finally, among both men and women, the proportion of hospitalisations among elderly people above the age of 80 is relatively small and has remained stable over the past ten years.

### **Alcohol-related deaths**

Consistent with the alcohol related hospitalisation data, the elderly are over-represented in alcohol-related deaths, where the proportion of elderly men and women dying from alcohol-related causes has increased among both men and women over the past ten years (see Figures 5 and 6). This increase is likely due to several causes, including the higher average amount and frequency of consumption, and the cumulative effects of long-term alcohol use (especially heavy use), which manifests in a variety of disorders including alcoholic liver disease (especially liver cirrhosis), hypertensive and heart disease, cancer, mental and behavioural disorders. It is cause for concern that steady increases in alcohol-related deaths have been observed among men and women aged 65–80 years in recent years.

### **Economic data**

There is no Swedish data available regarding the economic cost of alcohol-related problems and harm among the elderly. The estimated annual cost to Swedish society of alcohol-related problems is about SEK 20–40 billion (or about EUR 2–4 billion) (Jarl et al., 2002).

Training for geriatric care staff: There are no specific programs in Sweden which aim to teach geriatric care staff how to identify and work with elderly people with alcohol use disorders. However, from January 2007, a short education programme targeting primary care providers (mainly nurses) has been implemented by STAD (Stockholm Prevents Alcohol and Drug Problems, Stockholm County Council). The course content includes information about how to screen and manage alcohol problems among elderly people. It uses motivational interviewing techniques to screen alcohol problems in primary care.

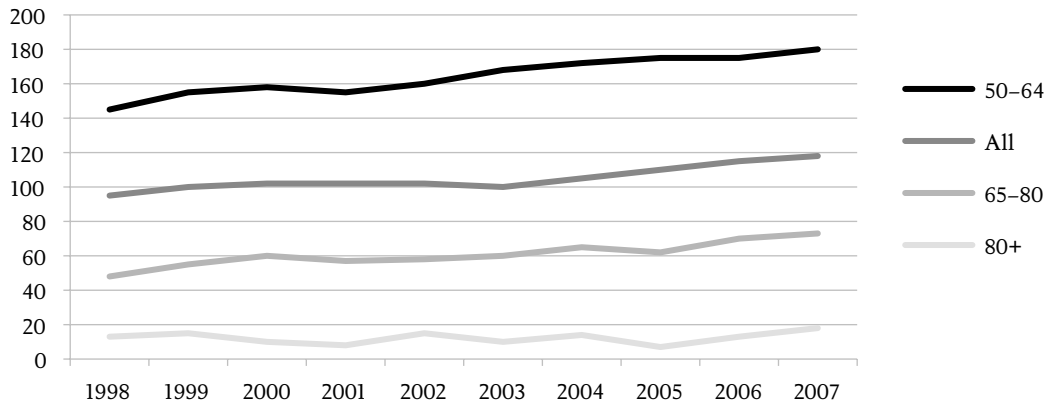


Figure 4: Female alcohol related hospitalisations per 100,000 by age (1998-2007)

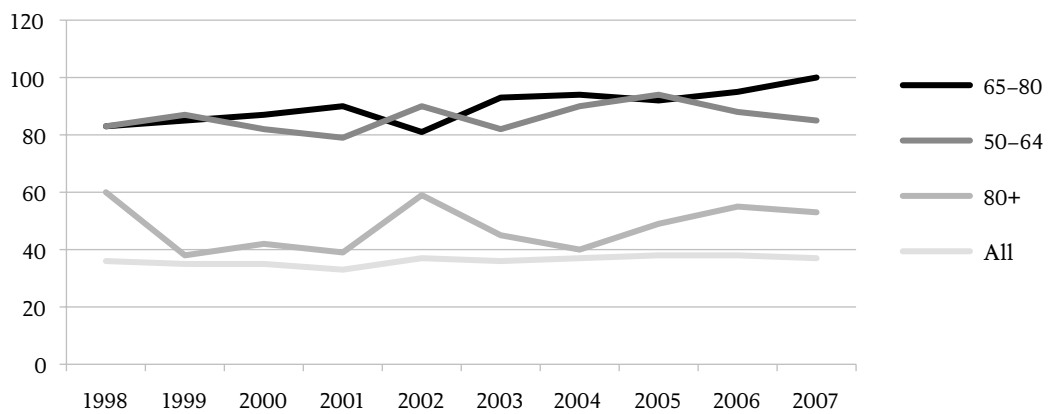


Figure 5: Male alcohol related deaths per 100,000 by age group (1998-2007)

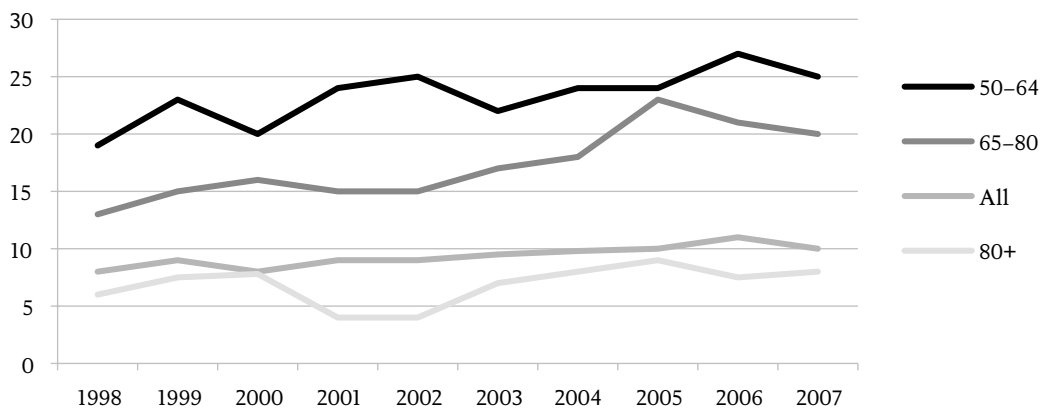


Figure 6: Female alcohol related deaths per 100,000 by age (1998-2007)

# Italy

## Background

The National Institute of Statistics (ISTAT) collects national information describing the social, economic and demographic conditions of the country. The Multiscopo survey is an established interview monitoring standard used to collect information on the health status, lifestyles habits and (among other things) alcohol consumption of approximately 60,000 individuals nationally (22,000 families).

## Alcohol consumption

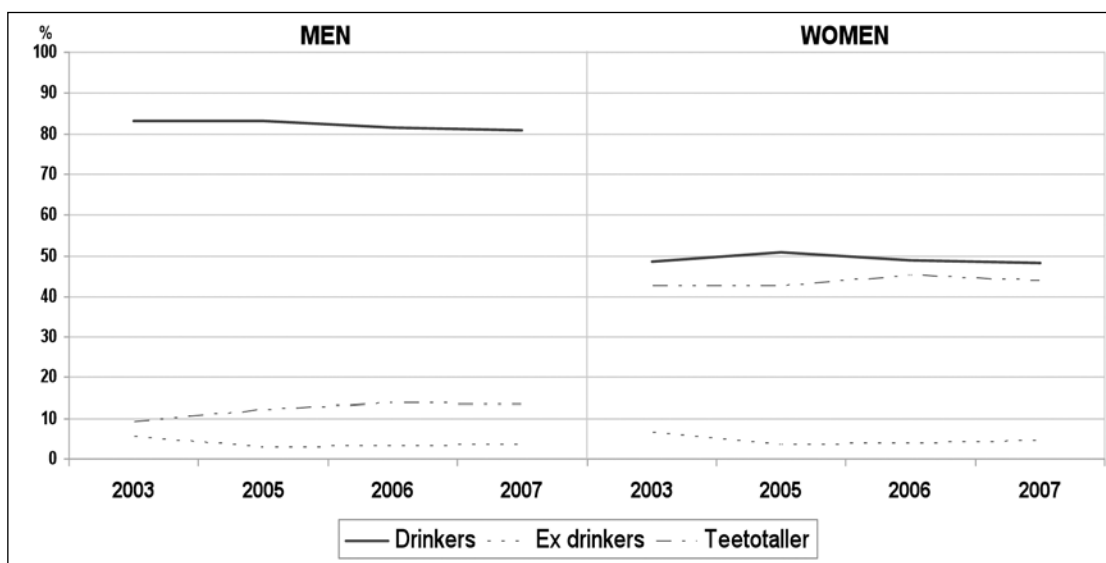
According to the ISTAT survey conducted in 2007, 62 per cent of Italians aged 65+ consumed at least one alcoholic beverage in the previous year, with a marked gender difference (81 per cent for males and 48 per cent for females – see Figure 1, below). As shown, the reported number of elderly people, both men and women, who drank alcohol in the past year has remained stable since 2003.

## Type of alcohol

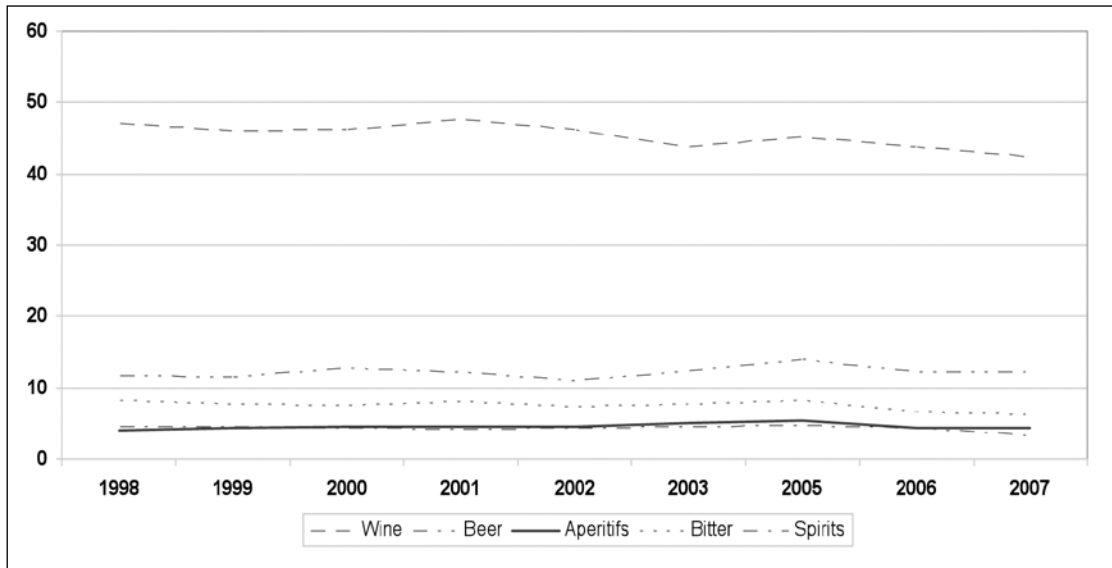
The percentage of adults aged 65+ who consumed wine in 2007 was 56, with a higher percentage among males (76 per cent) than females (42 per cent). In 2007, 23 per cent of

the population aged 65+ consumed beer, and again the percentage was higher among males (37 per cent) than among females (12 per cent). Regarding aperitifs, the prevalence of consumers aged 65+ in 2007 was 10 per cent (M=18 per cent; F=4 per cent). The consumption of bitters ("amari" in Italian), and liqueurs was reported by 14.5 and 10 per cent of adults over 65 years, respectively, with men consuming significantly more of both than women. Furthermore, an increase in beer and aperitif drinkers aged 65+ was identified between 1998 and 2007, together with a decrease of wine, bitters and liquor drinkers.

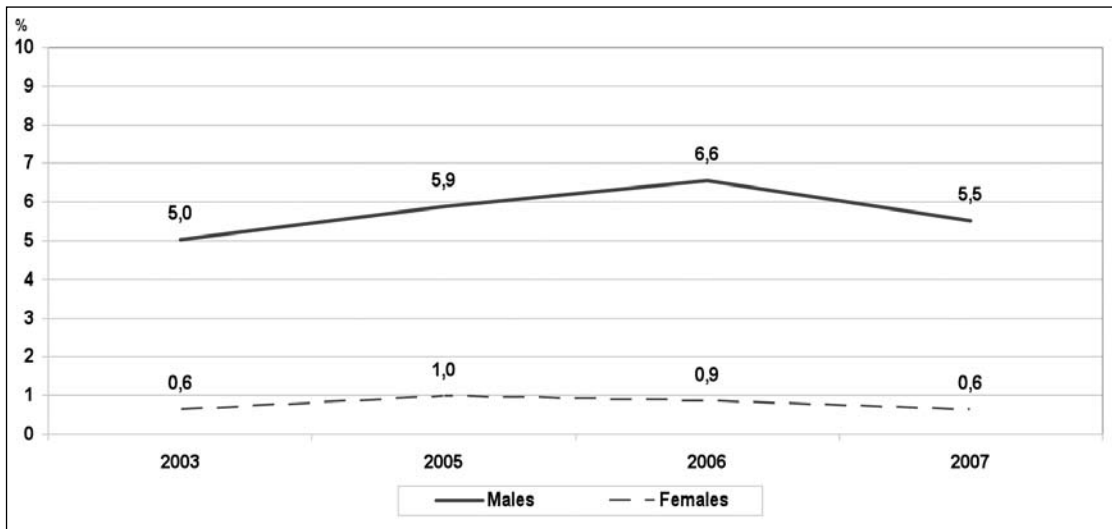
Three main trends emerge from the consumption data between 1998 and 2007: First, across all beverage types, elderly Italian men consume more alcohol (on average) than women; second, both men and women drink more wine compared to all other beverages; and third, the only notable change in consumption was a reduction in wine consumption by women (from about 48 per cent in 1998 to about 42 per cent in 2007, see Figure 2, below). With this exception, all other drinking trends among the elderly have remained stable between 1998 and 2007.



**Figure 1:** Percentage of Italian men and women (age 65+) who consumed alcohol at least once in the past 12 months  
**Source:** Data from the 2003–2007 Multiscopo ISTAT study processed by the Osservatorio Nazionale Alcol CNESPS and the WHO CC Research on Alcohol



**Figure 2:** Percentage of Italian females, aged 65+, consuming different alcoholic beverages (1998–2007)  
**Source:** Data from the 1998–2007 Multiscopo ISTAT study processed by the Osservatorio Nazionale Alcol CNESPS and the WHO CC Research on Alcohol



**Figure 3:** Percentage of Italians age 65+ who report binge drinking during the previous 12 months  
**Source:** Data from the 2003–2007 Multiscopo ISTAT study processed by the Osservatorio Nazionale Alcol CNESPS and the WHO CC Research on Alcohol – Istituto Superiore di Sanità

### Hazardous drinkers

In Italy, drinkers considered to be "at risk" are those whose alcohol consumption exceeds the quantities recommended by the National Guidelines for Nutrition. The definition for drinkers "at risk of harm" is based on the World Health Organization definition, which defines hazardous consumption as drinking behaviours that can result in harm if they persist. The modalities generally considered risky in Italy are the following: (1) the consumption of alcoholic beverages between meals (i.e., far from meal time); (2) the daily quantities of alcohol consumed over the limit set by the National Guidelines with regular/persistent frequency as indicated by the WHO and ICD-10 guidelines for gender and age; and (3) binge drinking.

### Subjects who drink between meals

Since 2003, the ISTAT survey has collected data concerning when alcoholic beverages are consumed by adults. The prevalence of Italians aged 65+ who drink between meals was 23 per cent for men and 4 per cent for women in 2007 – a reduction of 3.6 and 1 percentage points, respectively, compared to 1998.

### Binge drinkers

Binge drinking (60 grams of alcohol consumed during a single drinking occasion) is much more frequent in Italy among elderly men. In 2007, 2.7 per cent of the population above 64 years reported that they had engaged in binge drinking during the previous 12 months (M=5.5 per cent; F=0.6 per cent). Between 2003 and 2007, the prevalence of binge drinkers in this age group increased 0.5 per cent among men, but remained stable among women (Figure 3).

### Daily drinkers who exceed the National Guideline limits for alcohol consumption

Italy's national guidelines for a healthy diet include alcohol consumption guidelines. They were developed on the basis of existing WHO indicators, with input from the Italian Ministry of Health, Italy's National Health Institute and the Italian Society of Alcoholology (SIA). Drinkers considered at major risk of harm are people who exceed the following daily alcohol amounts: (1) adult men who consume more than 40 grams of alcohol per day (4 glasses of any type of alcohol); and (2) adult women who consume more than 20 grams

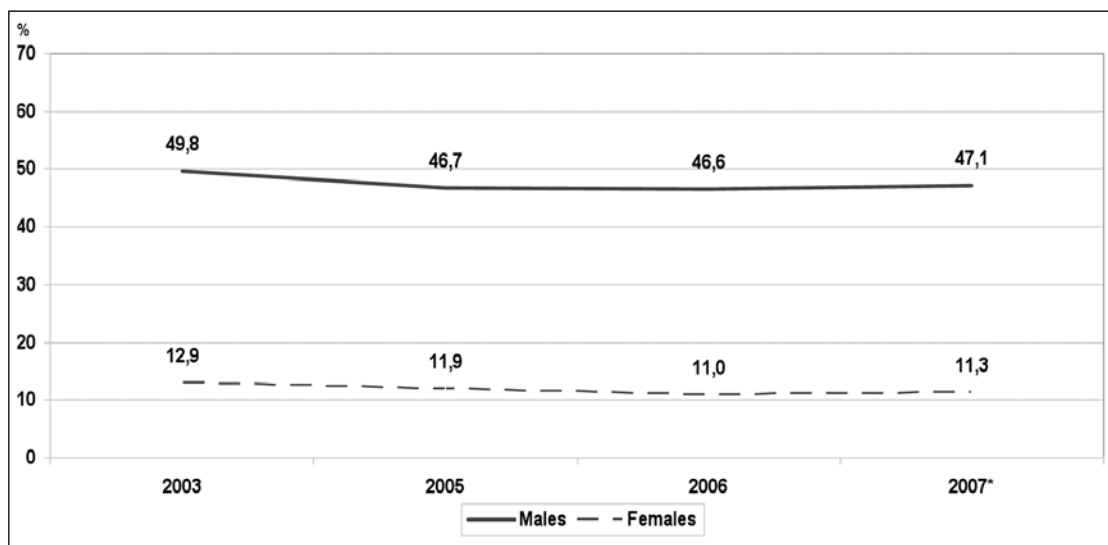
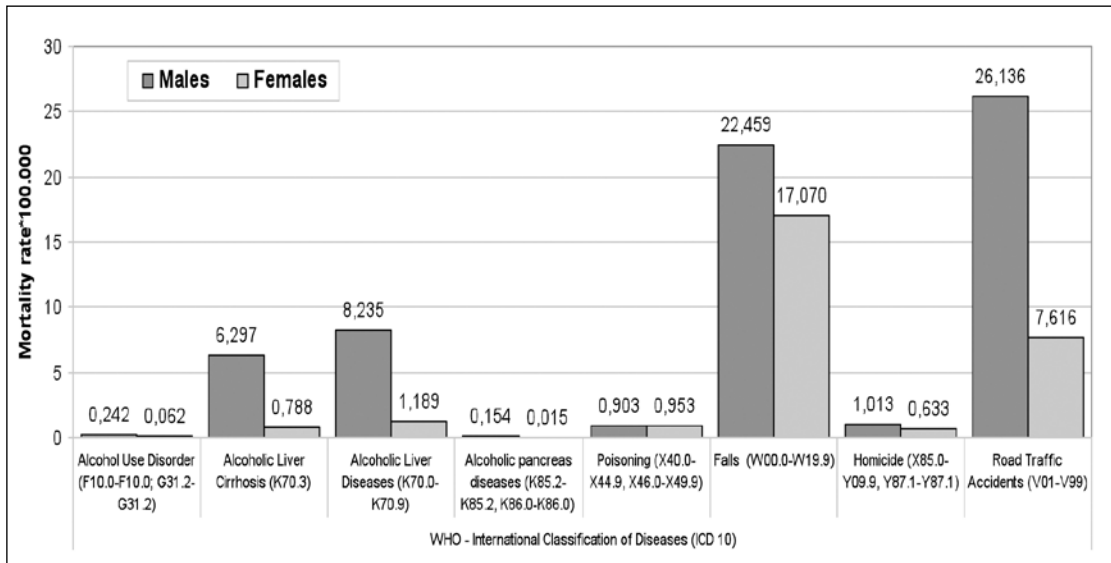
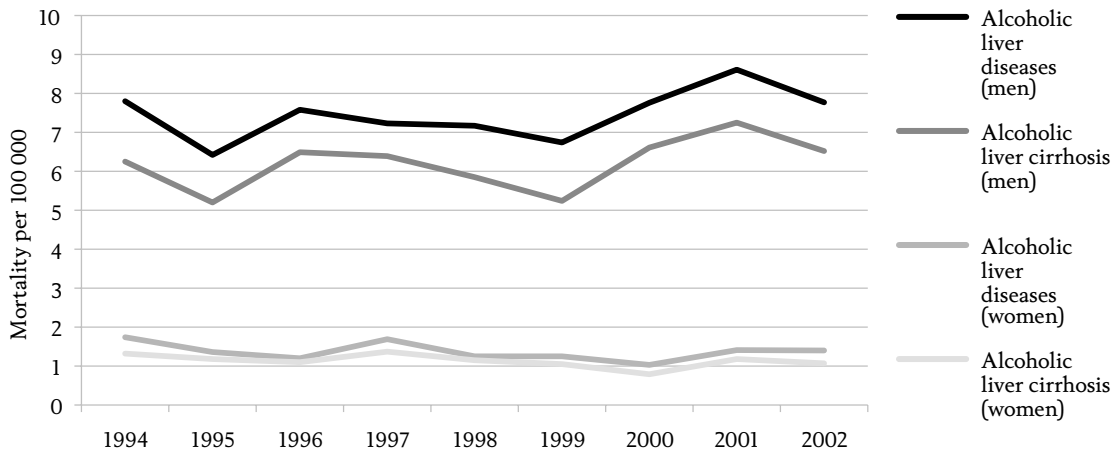


Figure 4: Percentage of Italian men and women aged 65+ who meet the criteria for "hazardous drinkers"

Source: Data from the 2003–2007 Multiscopo ISTAT study processed by the Osservatorio Nazionale Alcol CNESPS and the WHO CC Research on Alcohol



**Figure 5:** Alcohol related mortality rates (per 100 000) for Italian men and women aged 65+ (2003)  
 Source: Data from Causes of mortality ISTAT database processed by the Osservatorio Nazionale Alcol CNESPS and the WHO CC Research on Alcohol



**Figure 6:** Gender differences in mortality rate for alcohol related diseases: Italian adults 65+

per day (2 standard drinks). Some age-specific limits/guidelines have also been set for individuals aged 65+, namely, no more than one alcoholic beverage per day (or about 8 g of pure alcohol).

In 2007, the prevalence of subjects aged 65+ who exceeded the daily amount of alcohol set by the National Guidelines was 47.1 per cent among males and 11.3 per cent among females. These values decreased slightly between 2003 and 2007 for both men and women (Figure 4).

#### **Alcohol related mortality**

In 2003, the mortality rate for alcoholic liver diseases (which is strongly related to chronic, heavy alcohol use) was 8.2 per 100,000 among men and 1.1 among women. The mortality rate for alcoholic liver cirrhosis during the same period was 6.3 per 100,000 among men and 0.79 among women. For most alcohol related problems, elderly men are harmed more than women. Among the elderly, there is also a relationship between alcohol consumption and the risk of accidental falls, homicide and road traffic accidents (see Figure 5, below)

Liver cirrhosis and alcoholic liver cirrhosis are both strong indicators of alcohol related problems. Between 1994 and 2002, the liver cirrhosis mortality rate decreased among both men and women aged 65+ (from 130.7 to 84 per 100,000 men, and from 76.1 to 54.3 per 100,000 women, respectively). The mortality rate for alcoholic liver cirrhosis for both men and women aged 65+ remained largely unchanged over the same period (from 6.25 to 6.52 per 100,000 men). With the exception of Poisonings, the alcohol related mortality rate is higher among elderly men than women (Figure 6).

#### **Hospital discharges**

In 2005, over four million hospital discharges among Italians aged 65+ were due to alcohol consumption. The most important among these is alcoholic cirrhosis of the liver which increased from 2,146,482 in 2002 to 2,209,210 in 2005. Over the same period, however, several other categories of alcohol dependence decreased, including: alcohol dependence syndrome, alcoholic fatty liver and alcoholic liver.

#### **Motor-vehicle accidents**

The mortality rate for transport accidents decreased between 1990 and 2002, particularly among men aged 65–74 (from 3.79 per cent to 2.20 per cent), and among men aged 75+ (from 6.09 per cent to 3.48 per cent). Smaller reductions were also observed among women during this period, although the magnitude of change was smaller because significantly fewer women than men are involved in motor vehicle accidents. The "accident mortality index" (the number of deaths divided by the number of car accidents) among those aged 65+ decreased slightly between 2000 and 2006 (from 2.8 per cent to 2.4 per cent)

#### **Economic or cost data associated with alcohol-related harms**

According to published data the different estimates for total costs associated with alcohol related harm ranges from 0.7–0.8 per cent of GDP (1994) to 3.5 per cent in 2000. The most recent estimate (2004) from the Italian Society of Alcoholology estimates the cost at EUR 47 billion per year (approximately 3 per cent of GDP).

### **Alcohol consumption guidelines for the elderly**

Alcohol consumption guidelines exist for the entire population and for specific age groups, including the elderly. Italy's national guidelines for a healthy diet contain information regarding recommended alcohol consumption levels. The "Osservatorio Nazionale Alcol", in collaboration with scientific societies such as the Italian Society of Alcoholology, provides information to improve public awareness about the levels of exposure to alcohol-related risks in general and risks to specific groups, including the elderly and adolescents. In these guidelines, alcohol consumption is described in terms of "standard drinks", where, in Italy, a standard drink commonly contains 12 g of pure alcohol. The guidelines recommend that elderly people do not exceed one alcoholic beverage daily. In addition to these guidelines, the National Public Health Institute has a clinical guideline for the identification of alcohol problems and brief intervention strategies for the general population. These guidelines are intended for primary health care providers (physicians and nurses), managers, educators, financiers and evaluators of primary health care services. The guidelines aim to advise health care providers about the techniques for assisting people who consume alcohol in a hazardous or harmful way.

### **Training**

Training of healthcare staff to recognise alcohol dependence and related problems exists for the entire population, but not for specific age groups. In 2008, the National Public Health Institute began to organise training courses for GPs and public health professionals in the identification and management of alcohol risks and problems among their clients.



# The United Kingdom (England, Scotland and Wales but not Northern Ireland)

## Alcohol consumption

The UK has seen a long-term rise in alcohol consumption, with per capita consumption increasing by 60 per cent from 1970 to 2006 in the general population. This rise in alcohol consumption reflects two developments: a shift to higher alcohol strength beverages, including a shift from beer to both wine and spirits, and alcohol becoming more affordable (the affordability of alcohol doubled between 1970 and 2001). Analysis suggests that it is the increasing affordability of alcohol that has played the most significant role and that it is in the off-licence trade where the increase in relative affordability has been particularly strong. In the general population, there has been a slight drop in the proportions of men and women who say that they had an alcoholic drink in the previous week compared to four years ago. Figure 1, below, shows that the numbers of elderly people drinking at least once a week has remained broadly stable, but has shown a slight rise for men (65 per cent in 1998 increasing to 67 per cent in 2007, although this is down from a peak of 69 per cent in 2003).

The data indicates that some 33 per cent of men and 55 per cent of women over 65 report not having drunk alcohol at all in the past week, compared to 28 per cent of the male and 43 per cent of the female adult population as a whole. The 16–24 and 65+ age ranges were consistently less likely to report drinking in the past week, although the elderly that did drink were more likely to drink on five or more days in the last week than both the 16–24 and the 25–44 age ranges (Figure 2). This reflects the data shown in Figure 3, where consumption has remained broadly stable in the 65+ age range, with only minor fluctuations.

The proportion of the elderly population exceeding recommended drinking limits has remained substantially lower than in all other age ranges throughout the period covered (Figure 4).

## Alcohol type and location of consumption

In the UK, there are marked differences in the drink preferences of men and women. In the general population, women are less likely than men to drink beer and more likely to drink wine, fortified wine, spirits and alcopops. In terms of amounts drunk, even though women drink much less than men overall, they drank a similar amount of wine. Consumption of wine by the over 65s has increased by the largest amount for both men and women, rising from 1.8 and 1.2 units<sup>3</sup> in 2000 to 3.1 and 1.8 units, respectively, in 2006. Consumption of other drinks has remained either largely stable or has fallen. The change in methodology for calculating units means that figures for 2005, 2006, 2007 and 2008 cannot be directly compared to previous years in the UK.

In both the general and the elderly (65+) population, the home is the most popular location for the heaviest or most recent drinking occasion. In the general population, the percentage of people who had bought alcohol from a licensed bar in the past week was stable between 1998 and 2002, but has since appeared to fall slightly. There was very little change over time in the percentages of elderly people who had bought alcohol from other outlets in the previous week.

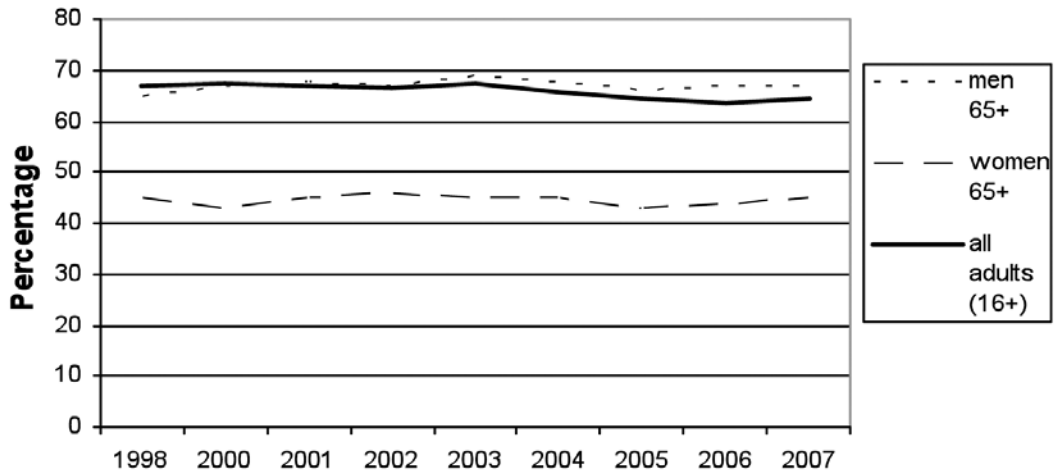
## Alcohol related hospital admissions in England

Alcohol related hospital admissions for over 65s in England are based upon a wide range of diseases and injuries in which alcohol plays a part, including falls and motor-vehicle accidents. Data relating to alcohol-related visits to accident and emergency wards is not collected centrally in England.

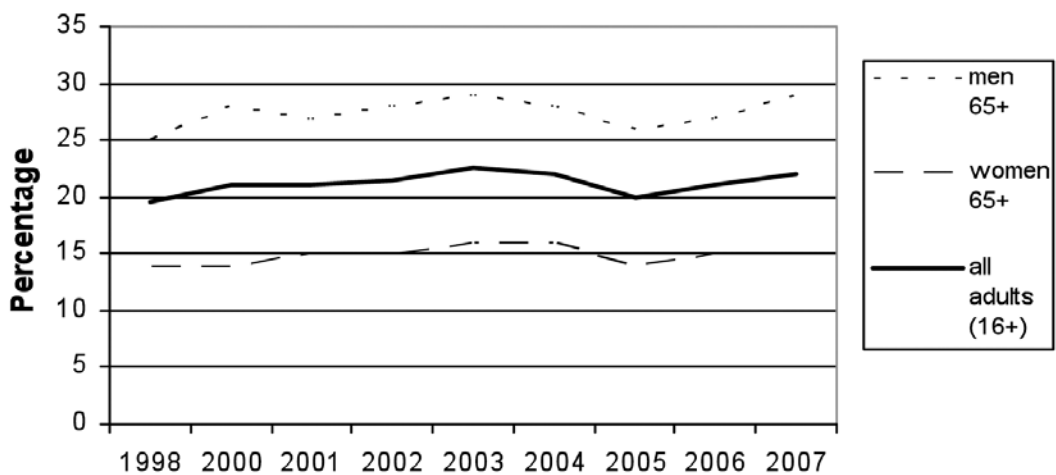
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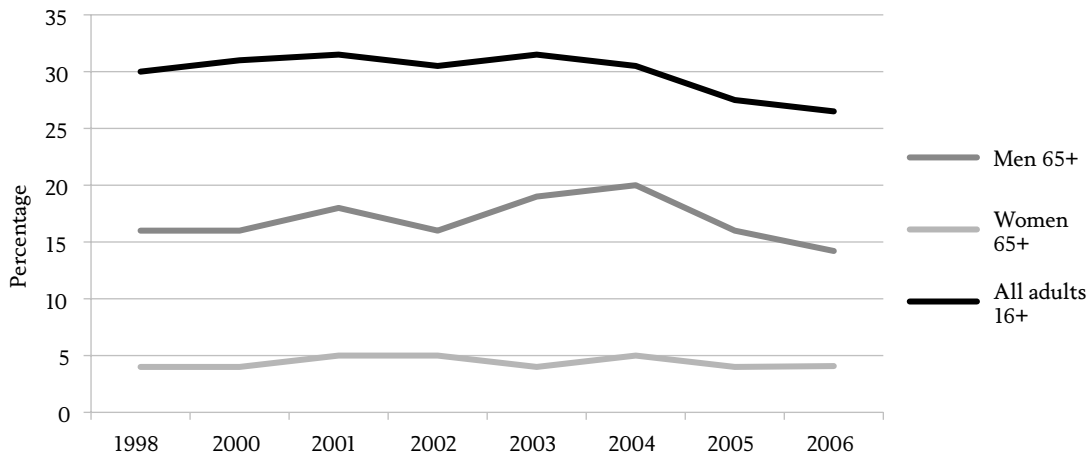
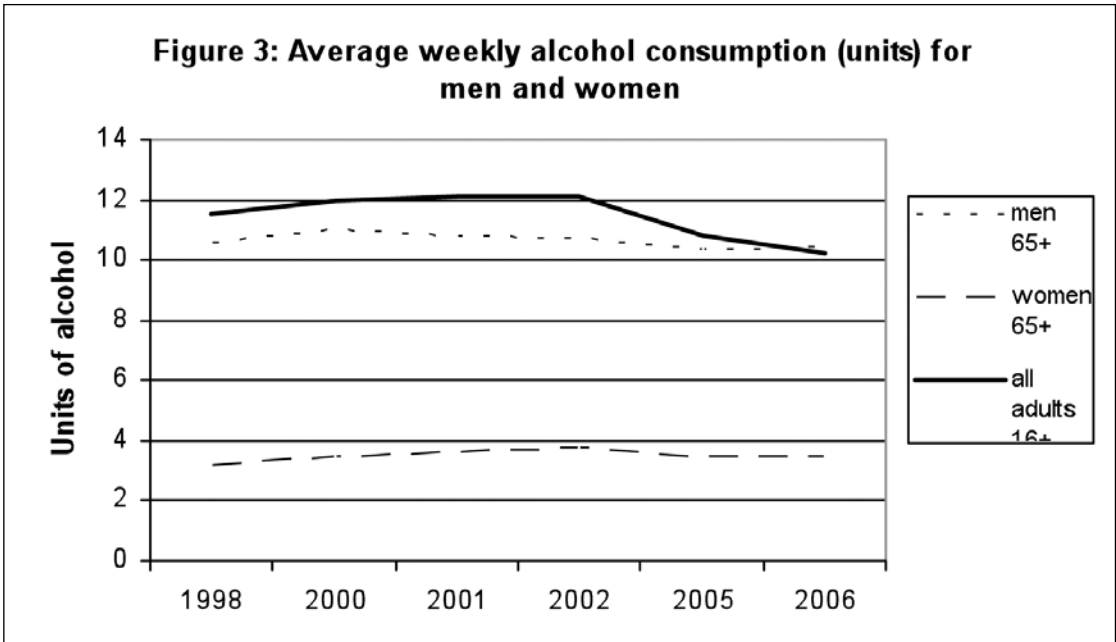
<sup>3</sup> In the UK, one "unit" of alcohol equals 12 ml or 8 g of pure alcohol.

**Figure 1: Percentage of adults who consumed alcohol during the last week (1998-2007)**



**Figure 2: Percentage of adults who drank alcohol on 5 or more days during the past week (1998-2007)**





**Figure 4:** Percentage of men and women who drank more than 4 and 3 units of alcohol, respectively, in one sitting during the past week.

	2002	2003	2004	2005	2006	2007	% increase 02–07
Malignant neoplasm of oesophagus	3665.8	3825	3828.7	4101.98	4119.4	3908.38	6.6
Fall injuries	6728.3	7031.2	7431	7874	7957	8026.96	19.3
Liver disease	4563	5105	5527	6044	6405	6657	45.9
Epilepsy and Status epilepticus	12900	13728.5	15361	17267.9	18583	19578.7	51.8
Cardiac arrhythmias	67637	74631	83320	95545.2	104449	115619	70.9
Mental / behavioural disorders	10733	12419	14254	16323	17255	18986	76.9
Hypertensive diseases	75124	88998.7	107593	128161	146911	164826	119.4
Sub total	181351	205738	237315	275317	305680	337603	86.2
Total admissions	197577	222601	254781	293744	323587	357294	80.8

**Table 1:** Changes in selected alcohol related hospital admissions age 65+ (2002–2007)

**Source:** Hospital Episode Statistics (HES), The British National Health Service (NHS) Information Centre for Health & Social Care

Total numbers of alcohol-related hospital admissions have been rising year by year for the elderly (65+), where it rose from 197,577 in 2002/3 to 357,294 in 2007/8. This represents a 75 per cent increase in the crude rate of alcohol-related hospital admissions among people aged 65 plus. Where the primary alcohol-related diagnosis was alcoholic liver disease, the crude rate of admissions increased by 41 per cent from 58 in 2002/03 to 82 in 2007/08, although the rate of increase has been declining since 2005/6. Increases in the absolute number of alcohol-related admissions for this age group can be seen across most conditions, but the highest number of alcohol-related admissions are consistently alcoholic liver disease, mental and behavioural disorders due to use of alcohol, fall injuries, malignant neoplasm of oesophagus, hypertensive diseases, cardiac arrhythmias and epilepsy and status epilepticus (Table 1).

In 2007/8, these conditions accounted for almost 89 per cent of alcohol-related hospital admissions for 60–64 year olds and over 94 per cent of admissions in the 65+ age group. For those aged 65 and over, the number of hospital admissions for alcohol-related hypertensive diseases alone rose by more than 100 per cent in the period 2002/3–2007/8, from 75,124 to 164,826. Some reviews of alcohol assessment of older people have found that the identification of problem drinkers is generally thought to be

more difficult. A number of barriers may exist including atypical symptoms, the tendency for older people to be less accurate in self-reporting their alcohol consumption, and health professional, caregivers and family members either ignoring or failing to identify problems.

#### **Alcohol related deaths in the UK 1998–2007**

This data is based on a definition of alcohol-related deaths that has been agreed across the UK. The trend in the rate of alcohol-related deaths in the UK now appears to be levelling out following rapid increases since the early 1990s. Office for National Statistics (ONS) data on the total number of alcohol-related deaths in the UK for 2007 shows that there were 8,724 alcohol-related deaths in 2007, lower than in 2006, but more than double the 4,144 recorded in 1991. In 2007, the alcohol-related death rate for all persons was 13.3 per 100,000 population, compared with 6.9 per 100,000 in 1991.

In 2007, the male alcohol-related death rate for all ages was 18.1 per 100,000 of the population, more than twice the rate for females at 8.7 per 100,000. The rate of male deaths has almost doubled from 9.1 per 100,000 of the population in 1991, while there have been steadier increases in female rates, rising from 5.0 per 100,000 in 1991. The data for those aged 65+ for the last 10 years reflects the changes in the wider population with a steady increase

in the number of alcohol-related deaths, leveling off in 2006/7.

Since 1991, the highest death rates for men and women have occurred in those aged 55–74. In contrast, the lowest rates have been in men and women aged 15–34, although there were slight increases for these groups between 2006 and 2007.

#### **Alcohol-attributable deaths in England 2001–2006**

The data for those aged 65+ shows the chronic conditions, either alcohol-specific or attributable, and degenerative diseases associated with long-term (often heavy) use of alcohol that are consistently responsible for the majority of alcohol-attributable deaths in England. The proportion of deaths attributable to each classification of conditions remained largely the same throughout this period (2001–2006).

#### **Economic costs associated with alcohol-related hospital admissions for those aged 60+ years:**

UK figures are based upon the hospital admissions figures from the National Health Service which have been calculated using 2006/7 rates of £1,490 as an average figure for each admission. Over the period from 2002/3–2007/8 the costs to the NHS associated with treating alcohol-related harm have risen from £363,338,051 to £667,055,853, which represents just over 50 per cent of total costs for all ages.

#### **Alcohol consumption guidelines**

The Government advises adult women to not regularly drink more than 2–3 units of alcohol a day, and adult men should not regularly drink more than 3–4 units of alcohol a day. The risk of harm from drinking above these lower-risk levels increases the more alcohol that you drink, and the more often you drink over these levels. Drinking alcohol also involves a personal assessment of the particular risks and responsibilities of drinking at the time, e.g. driving or when taking certain medications.

The UK Government has a number of sources of information and advice, which are available to everyone and are intended to enable consumers of all ages to make informed, healthy choices about their consumption of alcohol. In May 2008, the national unit awareness campaign, Know Your Limits, provided patients, nurses and GPs specially tailored materials, including fact sheets, a wall chart and leaflets to all GP practices to help health professionals give the best advice possible.

#### **Staff training for alcohol screening and detection**

Guidance has been published, Substance Misuse in the Undergraduate Medical Curriculum (April 2007), which defines the aims and core learning objectives in hazardous substance use that medical students should achieve during the undergraduate stage of their basic medical education. This guidance specifically aims to ensure that, upon graduation, students should be able to define and describe mechanisms of dependence and the common treatment regimes and therapies for the various types of addictions relating to hazardous substance use.

A programme to embed this guidance in the English undergraduate curriculum is supported in the UK. Training for GPs and other primary care staff in identifying and supporting patients with alcohol problems is also being developed. There are more learning pathways planned which will provide the same learning outcomes but will be tailored for practitioners in different settings, e.g. hospital settings and community pharmacies.

The Department of Health and the National Treatment Agency have published Models of Care for Alcohol Misusers (2006), which provide best practice guidance for commissioning and providing interventions and treatment for adults, including vulnerable adults, affected by harmful alcohol use. It contains specific guidance on the assessment of alcohol problems including dependence. Older people are specifically referred to in the publication (See Appendix B).

# Latvia

## Alcohol use patterns and prevalence

Data in this section refers to two national studies on drug abuse prevalence carried out in Latvia among the 15–64 year-old population in 2003 and 2007. No consumption data is available for the 65 plus age group. The sampling is representative of the population aged 15–64 with sample sizes around 4500 (the net sample size aged 60–64 was 435 in 2003, and 301 in 2007). Both studies included questions regarding alcohol prevalence over the lifetime, last year and last month; in 2007, additional questions on alcohol use patterns were included. Data from both studies suggests that the proportion of abstainers is very small, including those aged 60–64 (across all adult age groups, around 4 per cent lifetime abstinence) (Table 1).

There are significant gender and age differences in the proportion of abstainers. Males and those aged 20–34 (or 44) more often report alcohol use at least once during the last year than females or those older than 44. The data also suggests that females aged 60–64 more often abstained from alcohol use during the last year (44%), while males aged 60–64 are the second lowest prevalence group (23% abstainers). Within the last month, less than one-half of population aged 60–64 report drinking any alcoholic beverages. Data also suggests that alcohol use prevalence rates between 2003 and 2007 were significantly different for the whole population, while deviations observed in the oldest age group (60–64) are likely to be observed because of the relatively small sample size. Data from the study carried out in 2007 indicates that the drinking frequency reported most often by elderly men was 1–3 times a month (28%) and 1–2 times a year (36%) among females (Table 2). About half (48%) of the population aged 60–64 most commonly consume two standard drinks (about 20 grams) or less of pure alcohol at one drinking occasion, while about 27% drink five or more drinks on one occasion.

## In-patient alcohol treatment

Data on in-patient alcohol treatment care is collected from all specialised public alcohol and drug treatment centres except those located in prison settings. The database started in 1996 and is managed by the Riga Centre of Psychiatry and Addiction Disorders (RCPAD). In Latvia, there are no alcohol treatment services specifically for elderly people, instead, alcohol treatment is provided within specialised addiction treatment centres across the country. The major treatment centre (RCPAD) is located in Riga city and covers about one-third of all treated clients under in-patient alcohol treatment. In every major city, there is a publicly funded hospital working with addiction treatment. In recent years, the coverage of such centres has not increased as no new centres have opened. In-patient treatment in Latvia consists of traditional forms of alcohol treatment, e.g. detoxification, motivational programmes, etc. After in-patient treatment patients are referred for treatment to a regional out-patient treatment centre according to their place of residence.

Data on in-patient alcohol treatment over the period 1996–2007 suggests that there were 138,464 specialised in-patient alcohol treatment episodes; of these, 11,000 (or 8 per cent) were persons over 60 years of age, and 4,475 (or 3.2 per cent) were older than 65 (see Table 3). As shown in the data there has been a steady increase in the number (and percentage) of episodes for people older than 60 and 65 years.

The alcohol treatment data in Latvia is based on a unique personal identifier which prevents double counting of reported cases. Data shows that between 1996 and 2007 there were 64,340 clients accessing alcohol treatment services, of which 5,349 (8.3 per cent) were older than 60 and 2,343 (or 3.6 per cent) were older than 65 (see Table 2). Figure 1, below, shows the proportion of patients entering alcohol treatment for the first time according

to primary diagnosis and year. The incidence among those older than 60 (or 65) shows a rather stable increase until 2002 then some decrease until 2005, while over the last few years the number of first-time treated clients has increased again. In recent years, there has also been an increase (about four-fold as compared with 2004 data and ten-fold as compared with 2003 and earlier) in the incidence of diagnoses related to alcohol intoxication or harmful use, but there is no straightforward trend or explanation of this data.

Between 1996 and 2007, about 20 per cent of patients older than 60 years of age entering in-patient treatment were females. As shown in Figure 2, below, the gender distribution of those older than 60 shows an increase in female patients asking for alcohol treatment (17 per cent in 2002, compared with 24 per cent in 2007); while among those older than 65 nearly one-third were female patients.

First-time treated patients older than 60 (or 65) have lower levels of education compared with all patients. Seven per cent of patients older than 60 and 8 per cent of those older than 65 have no formal education as compared with 2 per cent among all treated clients (see Table 5).

#### **Alcohol-related mortality**

The General Mortality Register (GMR) in Latvia is managed by the Health Statistics and Medical Technologies State Agency, which records data on all deceased persons using the ICD-10 classification system. Data reported here are categorized according to diagnostic groups that are 1) alcohol specific and 2) alcohol attributable. Since alcohol-attributable fractions have not been calculated specifically for Latvia, those reported by English et al (1995) and others are used, where relevant.

#### **Alcohol-specific mortality**

According to the GMR, there were 5,822 cases of death (75 per cent males) with alcohol-specific conditions during 1999–2008. The most common causes of alcohol-specific death were accidental poisoning by and exposure to alcohol (ICD-10: X45), alcoholic cardiomyopathy (I426), mental and behavioural disorders due to the use of alcohol (F10), alcoholic liver disease (K70), degeneration of the nervous system due to alcohol (G312). The remaining alcohol-specific conditions were mentioned in less than 100 cases during the ten year period. The proportion of alcohol-specific deaths among people aged 60 plus was about one-fourth (27 per cent). Alcohol-specific causes of death and the proportion older than 60 by gender is shown in Table 6, below.

Over the observed time period (2002–2007), there has been an overall increase in alcohol specific mortality among those aged 60 and over (see Figure 3, below).

#### **Alcohol-attributable mortality**

While not easy to interpret, data on alcohol-attributable mortality in Latvia is reported below. Since alcohol-attributable fractions (AFs) have not been calculated for Latvia, the main limitation of these figures is that attributable fractions calculated from more developed countries, such as the US, Canada, and the UK, have been used instead. Most likely, some if not all of these AFs are different in the Latvian context. Some of the most prevalent alcohol-attributable disorders are presented in Table 7, below.

	15-64						60-64					
	Total		Male		Female		Total		Male		Female	
	2003	2007	2003	2007	2003	2007	2003	2007	2003	2007	2003	2007
Lifetime prevalence <i>ever drinkers</i>	96.4	95.5	97.5	95.2	95.5	95.5	95.2	96.0	98.3	98.6	92.6	94.1
Last year prevalence <i>current drinkers</i>	86.1	86.3	89.3	87.5	83.3	83.2	71.9	63.6	85.4	66.6	62.3	56.1
Last month prevalence	64.2	66.3	75.3	74.6	55.7	58.3	39.8	43.0	59.0	59.2	26.4	28.5

**Table 1:** Alcohol use prevalence rates among general population (15-64) and those aged 60-64, by gender

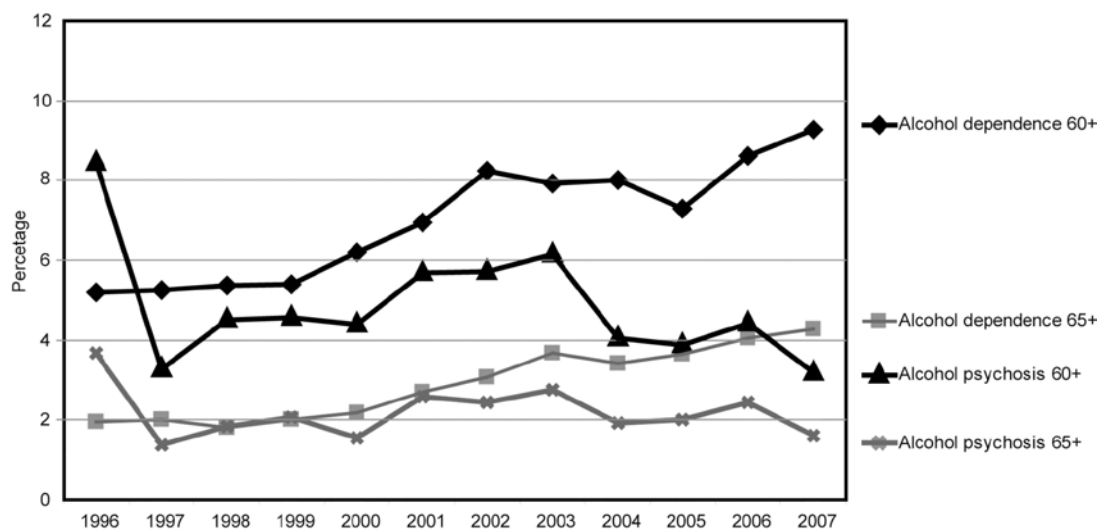
	Males	Females
1-2 times a year	9	36
3-6 times a year	15	24
7-11 times year	13	13
1-3 times a month	28	16
1-2 times a week	19	7
3+ times a week	16	4
<b>Total</b>	<b>100</b>	<b>100</b>

**Table 2:** Drinking frequency among elderly people (60-64), percentage of "current drinkers"

Year	All ages (n)	60+		65+	
		N	% of all ages	N	% of all ages
1996	7537	458	6.1	186	2.5
1997	9947	593	6.0	242	2.4
1998	11289	735	6.5	257	2.3
1999	10511	729	6.9	242	2.3
2000	10970	808	7.4	267	2.4
2001	9756	839	8.6	326	3.3
2002	10107	835	8.3	295	2.9
2003	7016	624	8.9	262	3.7
2004	10491	880	8.4	371	3.5
2005	16658	1434	8.6	603	3.6
2006	17331	1495	8.6	678	3.9
2007	16851	1570	9.3	746	4.4
<b>Total</b>	<b>138464</b>	<b>11000</b>	<b>7.9</b>	<b>4475</b>	<b>3.2</b>

**Table 3:** The number of specialised in-patient alcohol treatment episodes in Latvia, 1996-2007  
**Source:** RCPAD data, Public Health Agency calculations

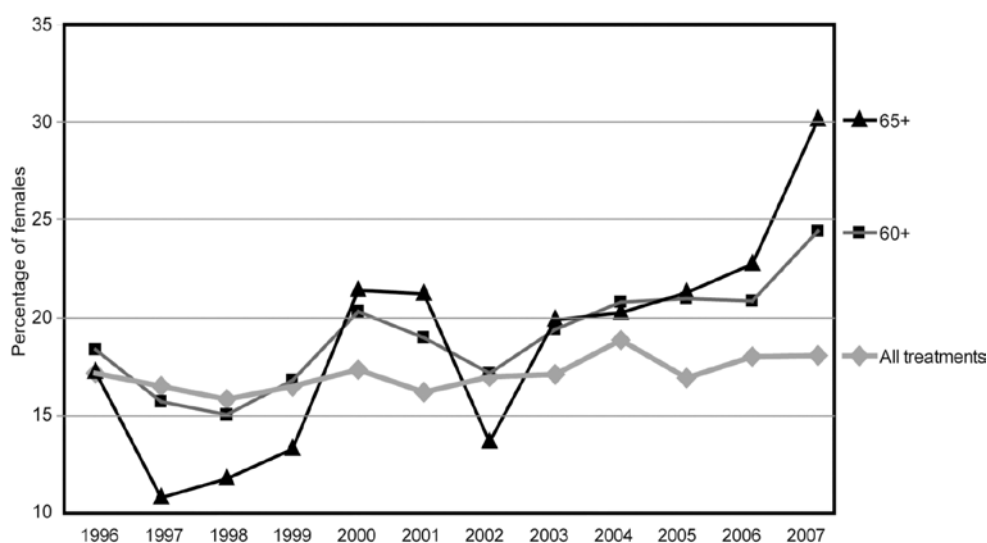




**Figure 1:** Incidence of in-patient alcohol treatment by diagnosis (% of all ages) in Latvia.  
**Source:** RCPAD data, Public Health Agency calculations

Year	All ages (n)	60+		65+	
		N	% of all ages	N	% of all ages
1996	5711	352	6.2	142	2.5
1997	5994	380	6.3	150	2.5
1998	5690	407	7.2	151	2.7
1999	4837	354	7.3	146	3.0
2000	4432	339	7.6	120	2.7
2001	3697	333	9.0	141	3.8
2002	3776	383	10.1	151	4.0
2003	2424	235	9.7	107	4.4
2004	4055	361	8.9	165	4.1
2005	6552	557	8.5	271	4.1
2006	6357	605	9.5	300	4.7
2007	10924	1043	9.5	499	4.6
<b>Total</b>	<b>64449</b>	<b>5349</b>	<b>8.3</b>	<b>2343</b>	<b>3.6</b>

**Table 4:** Number and percentage of first-time treated clients at specialized in-patient alcohol treatment centres in Latvia  
**Source:** RCPAD data, Public Health Agency calculations



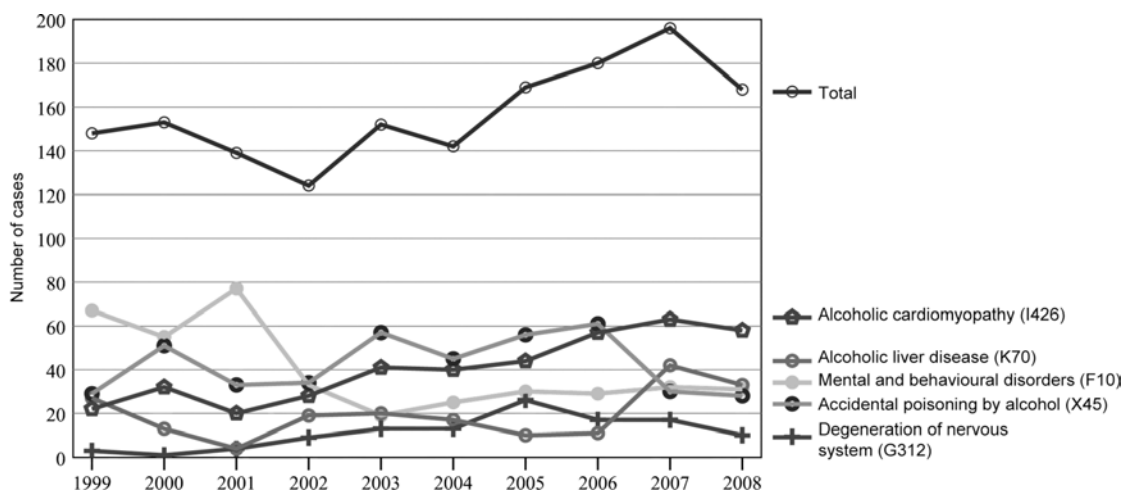
**Figure 2:** Proportion of female clients at in-patient alcohol treatment services (% of females in respective age group) in Latvia.  
**Source:** RCPAD data, Public Health Agency calculations

	All ages	60+	65+
Never went to school/ incomplete primary	1.6	6.6	8.4
Primary level of education	15.3	28.1	30.8
Secondary level of education	57.7	39.1	34.7
Higher education	11.5	10.3	8.7
Not known, missing	14.0	15.8	17.5
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Table 5:** Education level of patients treated for an alcohol related problem for the first time in Latvia (2007)  
**Source:** RCPAD data, Public Health Agency calculations

		Overall mortality		Attributable fractions		Alcohol-attributable mortality	
		Male	Female	Male	Female	Male	Female
Malignant neoplasm of stomach	C16	2422	2088	0.2	0.2	484	418
Malignant neoplasm of other digestive organs	C17-21	2599	3204	0.2	0.2	520	641
Hypertensive diseases	I10-15	1012	1997	0.08	0.04	81	70
Ischaemic heart disease	I20-25	34621	45 914	0.01	0.01	173	230
Stroke	I60-69	19 077	37 301	0.08	0.08	1 555	3 003
Pneumonia and influenza	J12-18	1 291	807	0.05	0.05	65	40
Chronic liver disease	K73-74	803	694	0.49	0.52	389	361
Road accidents	V01-89	722	467	0.4	0.31	289	142
Fall injuries	W00-19	852	1 068	0.29	0.25	246	263
Intentional self-harm/ Event of undetermined intent	X60-84, Y10-33	1 307	699	0.34	0.16	446	115

**Table 6:** Selected alcohol-specific mortality in Latvia by age (2008)  
**Source:** HSM TSA data



**Figure 3:** Selected alcohol-specific mortality causes among people aged 60 and older in Latvia.  
**Source:** HSMTSA data

		Overall mortality		Attributable fractions		Alcohol-attributable mortality	
		Male	Female	Male	Female	Male	Female
Malignant neoplasm of stomach	C16	2422	2088	0.2	0.2	484	418
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Hypertensive diseases	I10-15	1012	1997	0.08	0.04	81	70
Ischaemic heart disease	I20-25	34621	45 914	0.01	0.01	173	230
Stroke	I60-69	19 077	37 301	0.08	0.08	1 555	3 003
Pneumonia and influenza	J12-18	1 291	807	0.05	0.05	65	40
Chronic liver disease	K73-74	803	694	0.49	0.52	389	361
Road accidents	V01-89	722	467	0.4	0.31	289	142
Fall injuries	W00-19	852	1 068	0.29	0.25	246	263
Intentional self-harm/ Event of undetermined intent	X60-84, Y10-33	1 307	699	0.34	0.16	446	115

**Table 7:** Selected alcohol-attributable mortality in Latvia age 60 plus (2008)

# Slovenia

## Alcohol consumption

Results from the European Health Interview Survey in Slovenia (2007), which includes residents of Slovenia aged 15 years or more, indicate that:

- 30.5 per cent of the adult population aged 60 years or over did not drink any alcoholic drinks in the last 12 months;
- 29.5 per cent drank alcoholic drinks "a few times" in the last 12 months;
- 15.2 per cent consumed alcohol between two and four times a month;
- 10.3 per cent drank a few times a week; and
- 14.2 per cent drank alcohol every day.

With regard to heavy consumption, almost 80 per cent of the population aged 60 years or over said that they never consumed six or more beverages in one sitting within the last 12 months. Fourteen per cent had drunk six or more alcoholic drinks at one occasion "less than monthly" in the last 12 months; and 5.8 per cent had drunk six or more alcoholic drinks at one occasion more than once a month during the last year.

## Alcohol related mortality and hospitalisation trends (age 60+) 1997–2007

The alcohol related mortality trend (1997–2007) shows a significant increase since 2005. This increase is mainly attributable to increases in the number of deaths from alcoholic liver cirrhosis. Since 2005, Slovenia has used a more precise methodology for gathering and coding the data for alcoholic liver cirrhosis, which is most likely the cause of this increase, rather than a change in actual deaths. Using another methodology (Hill's coefficient), the results show that in the years before 2005, Slovenia probably underestimated the number of deaths due to alcoholic liver cirrhosis (see Figure 1). The trend in alcohol related hospitalisations (1997–2007) shows a more stable pattern, with a slow decrease

in the number of hospital discharges due to alcohol related causes<sup>4</sup> (Figure 2).

## Traffic accidents

Alcohol-related traffic accidents among people aged 64+ in Slovenia increased from 124 in 2000 to 137 in 2008. During the same period, the percentage of elderly people involved in alcohol-related traffic accidents increased by 1.8 per cent. Over the past nine years, elderly people were involved in 5.8 per cent of all traffic accidents, and during this period 443 people (aged 64+) were killed, which represents 18.4 per cent of all road accident fatalities. The over-representation of elderly people in road accident deaths is related to the rise in serious road traffic injuries among this age group in recent years.

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<sup>4</sup> The following ICD-10 disease categories are included in the group 'all alcohol-related causes of death and hospitalisations': Mental and behavioural disorders due to use of alcohol (F10), Degeneration of nervous system due to alcohol (G31.2), Alcoholic polyneuropathy (G62.1), Alcoholic miopathy (G72.1), Alcoholic cardiomyopathy (I42.6), Alcoholic gastritis (K29.2), Alcoholic liver disease (K70), Alcohol-induced chronic pancreatitis (K86.0), Maternal care for (suspected) damage to fetus from alcohol (O35.4), Fetus and newborn affected by maternal use of alcohol (P04.3), Fetal alcohol syndrome (Q86.0), Finding of alcohol in blood (R78.0), Accidental poisoning by and exposure to alcohol (X45), Intentional self poisoning by and exposure to alcohol (X65), Poisoning by and exposure to alcohol, undetermined intent (Y15), Toxic effect of alcohol – Ethanol (T51.0), Toxic effect of alcohol – Methanol (T51.1) and Toxic effect of alcohol – Alcohol, unspecified (T51.9).

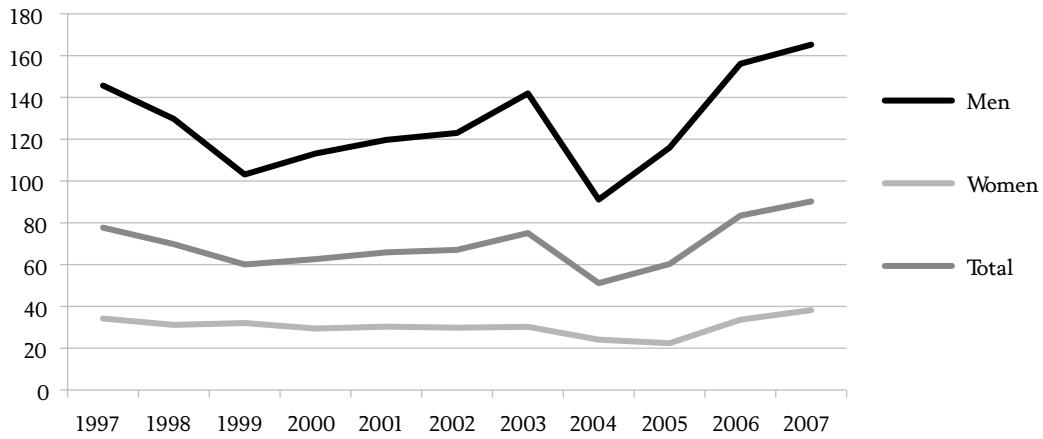


Figure 1: Alcohol related mortality rate per 100.000 adults age 60+ (1997–2007)

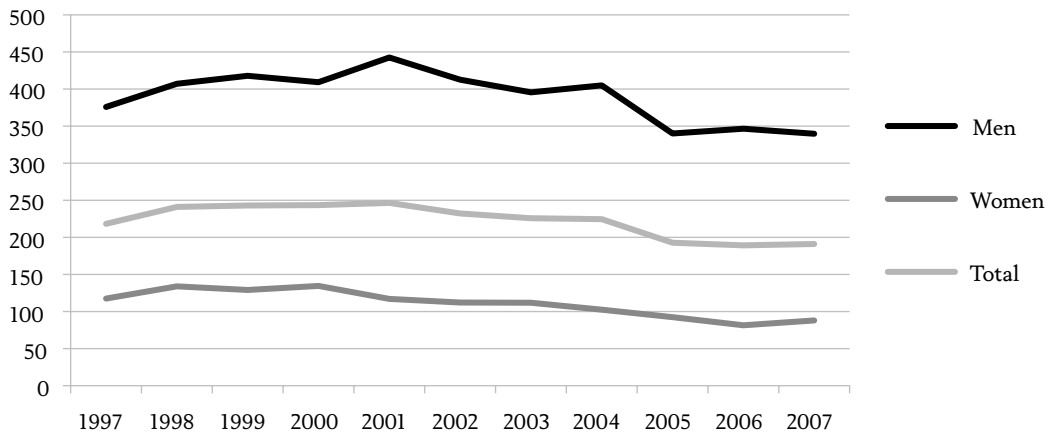


Figure 2: Alcohol related hospital discharges rates per 100.000 population, age 60+ (1997–2007)

# Czech Republic

## **Background**

The Czech Republic belongs to a group of European countries with higher than average alcohol consumption and alcohol-related problems. However, there are currently no reports or studies about alcohol use and the elderly in the Czech Republic. Two national surveys were conducted in 2002 and 2006 (using different methodologies, age ranges, etc.) which may nevertheless provide some insight into the extent of consumption and especially rates of problem drinking. Because the 2002 survey was limited to the age range 18–64 years, the data presented here, like that of Germany, represents the younger subgroup (age 60–64). In 2006, there was no upper limit for age, so the data more accurately represents the elderly population over 60 years.

## **Alcohol consumption**

Results from both surveys (see Tables 1 and 2) suggest that there was only a modest change over time in "last year" and "last month" prevalence of binge drinking, and also that differences between genders are not as large as those seen in per capita alcohol consumption. The last year prevalence of binge drinking corresponds with the prevalence of problem drinking based on CAGE scores, and it could be concluded that the overall prevalence of heavy or problem drinking in the population over 60 years is around 5–6 per cent.

## **Alcohol-related harm**

With regard to alcohol-related mortality, four diagnostic categories most closely associated with alcohol consumption were selected for analysis. The data shows marked increases between 2000 and 2006 in mortality for alcoholic liver disease and alcohol use disorders/dependence. One possible reason for this may be the continuous increase of per capita alcohol consumption, especially since the end of

the 1980s. Registered per capita consumption rose by about 1 litre of pure alcohol between 1990 and 2007, but has remained stable in recent years.

Alcohol problems among the elderly have not been studied in the Czech Republic until now, and the lack of knowledge about this population may be the reason why there are currently no programs targeted at this growing part of Czech society. There is no economic data available concerning costs to society, which anecdotally are thought to be substantial.

Year of data collection	Gender	Consumption in g/day (mean,SD)	Consumption in l of pure alcohol per year (mean)	Binge drinking (% last year)	Binge drinking (% last month)	Problem drinking % CAGE 2+	Abstainers (% last year)
2002	M	20.7 (28,1)	9.56	8.2	7.1	n.a.	–
	F	4.3 (9,6)	1.97	4.2	3.9	n.a.	–
	T	12.6 (22,6)	5.84	6.8	6.3	n.a.	–
2006	M	n.a.	n.a.	6.1	4.9	6.8	8.9
	F	n.a.	n.a.	4.8	4.2	3.2	24.2
	T	n.a.	n.a.	5.5	4.7	5.6	17.2

**Table 1:** Alcohol consumption by persons aged 60 plus, based on general population surveys (national level), Czech Republic  
**Note:** Data from the year 2002 are based on the GENACIS study, N=2526, age range 18 – 64. Data from the year 2006 are based on a study from the National Institute of Public Health, N = 1793, age range 15 and higher.

ICD-10 Code	Disease category	2000	2001	2002	2003	2004	2005	2006	2007
C22	Liver Cancer	725	720	759	810	764	685	684	659
F10	Alcohol use disorders	28	31	23	39	50	81	66	67
K70	Alcoholic liver disease	255	270	286	308	335	383	384	467
X45	Alcohol poisoning	17	21	16	18	27	25	20	30
<b>Age specific rates per 100 000 population</b>									
C22	Liver cancer	38.14	37.87	39.57	41.52	38.35	33.66	32.76	30.54
F10	Alcohol use disorders	1.47	1.63	1.20	2.00	2.51	3.98	3.16	3.10
K70	Alcoholic liver disease	13.41	14.20	14.91	15.79	16.82	18.82	18.39	21.64
X45	Alcohol poisoning	0.89	1.10	0.83	0.92	1.36	1.23	0.96	1.39

**Table 2:** Alcohol-related mortality in the Czech Republic in population over 60 (absolute numbers and age specific rates per 100 000 population)  
**Source:** Zemřelí podle podrobného seznamu příčin smrti, pohlaví a věku v ČR a v krajích. Czech Statistical Office, <http://www.czso.cz/csu/2008edicniplan.nsf/p/4017-08>.

# Germany

## Background

For the purposes of this report, German literature and publications concerning alcohol and the elderly were reviewed by the German Centre for Addiction Issues (DHS), Germany. Most of the data is derived from two epidemiological studies and the 'statistical report for 2006 on treatment facilities for substance-use disorders in Germany'. Additional information comes from articles concerning specific research projects. Along with the rest of Europe, an increasing percentage of the German population is getting older and living longer. This demographic change is frequently discussed in relation to health related issues. Increasingly, substance abuse (including hazardous alcohol use) among the elderly is gaining attention, but to-date representative empirical and epidemiological data is lacking in Germany.

## Alcohol in German society

In recent years, the overall per capita consumption of Alcohol has decreased slightly. Nonetheless, consumption remains high when it is compared internationally. In 2007, the per capita consumption was 9.9 litres of pure alcohol, a reduction of 0.2 litres from 2006. Running parallel with consumption, the economic costs of alcohol-related diseases also remain high. In 2002 the costs were estimated to be EUR 24.2 billion annually, which includes EUR 8.4 billion in direct costs for the healthcare system and EUR 16 billion for indirect costs to society.

## Drinking Habits

In the "Bundesgesundheitsurvey" (Federal Health Survey) (1998) a representative epidemiological study from 1998, the Robert Koch-Institute found that with increasing age, there are fewer people with alcohol related problems. Among men aged 50–59, average alcohol consumption is 17.5 g/day. It drops to 14.7 g/day among the 60–69 year-olds, and

down to 12.2 g/day among the 70–79 year-olds. Average daily consumption among women is significantly lower. A decrease among women in these age groups is also clear: women aged 50–59 drink 5.1 g/day (on average), women aged 60–69 drink 3.4 g/day and women aged 70–79 drink 2.4 g/day. The survey also shows that with increasing age the proportion of older people drinking more than 20 g/day (men) and 10 g/day (women) decreases. The proportion of men with hazardous consumption drops from 39 per cent among those aged 45–54 to 31 per cent among the 55–64 years olds, and to 28 per cent among men aged 65–79. The percentage for women in the respective age groups drops from 22 to 17 to 11 per cent, respectively<sup>5</sup>.

Data from the "Epidemiologischer Suchtsurvey 2006" (Epidemiological Search Survey) was also examined. While data from this survey stops at 65 years, it includes the 60–64 year age group. While the majority (60.8 per cent) of men and women in this age group report drinking in ways that are not hazardous<sup>6</sup> (i.e., less than 30 g per day for men, less than 20 g for women), at least 4 per cent report drinking at clearly hazardous levels, which is more than the total population (all ages), due largely to the drinking patterns of elderly men (Figure 1).

Similarly, the percentage of elderly Germans drinking at very high levels each day (i.e., more than 120 g for men, and more than 80 g for women) was also slightly higher among the elderly (0.5 per cent) compared to

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<sup>5</sup> Depending on the Author of the articles, age groups are clustered differently. The Trends in these two paragraphs show similar direction nonetheless.

<sup>6</sup> Germany defines hazardous consumption as more than 30 g pure alcohol in one sitting for men, and more than 20 g for women. The definition is based on research conducted by Bühringer et al (2000), which takes into account German data, WHO recommendations and those of the British Medical Association. Reference: Bühringer, G (2000) Alkoholkonsum und alkoholbezogene Störungen in Deutschland – Band 128 Schriftenreihe des Bundesministeriums für Gesundheit, Nomos Verlagsgesellschaft Baden-Baden. German Ministry for Health.



the general population (0.4 per cent). It is unclear, however, whether this is a new pattern of drinking by the elderly, or if it has remained stable over time.

**Binge-drinking**

Figure 2, below, shows that 10.7 per cent of German men and women aged 60–64 binge drank between one to three times within the last 30 days, and a further 10.3 per cent binge drank four times or more. A bout of binge-drinking is defined as drinking more than five glasses of alcohol on one occasion. The figures for men in this category are noticeably higher than those for women.

**Prevalence of alcohol addiction**

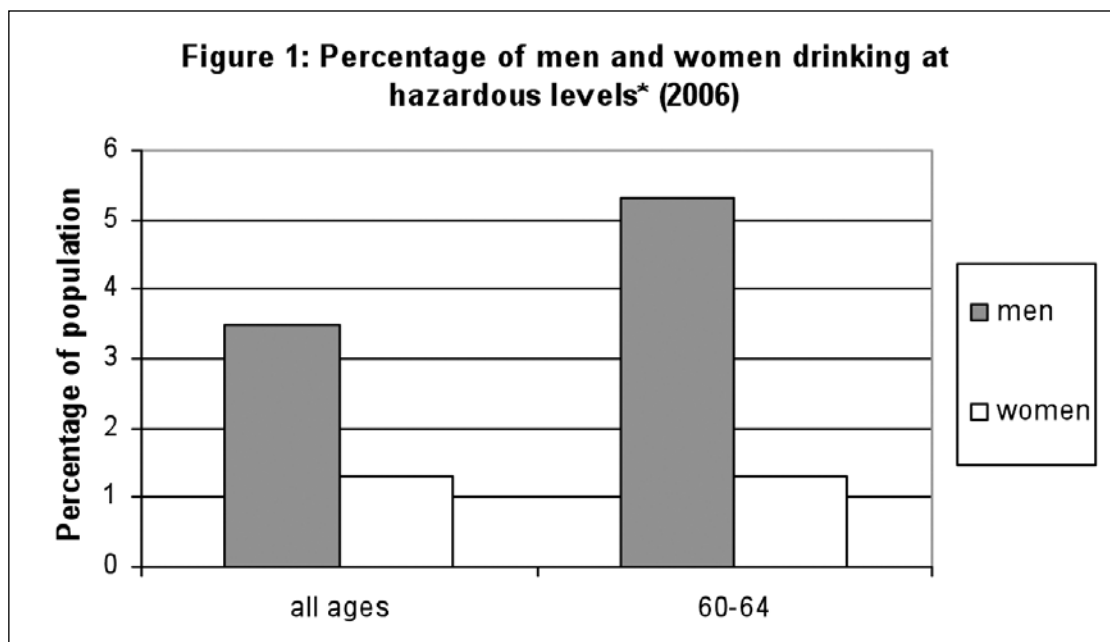
Harmful alcohol consumption according to the DSM-IV has been diagnosed for 2.5 per cent of German men and women aged 60–64 years. Addiction has been diagnosed for 0.8 per cent. German men are more likely to use alcohol in a hazardous way or to be addicted.

**Alcohol-related harm**

Germany reports that there is currently no accurate data for the elderly. Among the elderly, a distinction between "late onset" drinkers and "early onset" drinkers is commonly made. It is estimated, that one third of those over 60 years of age are late onset drinkers, which means that for some, the development of alcohol problems takes place late in life.

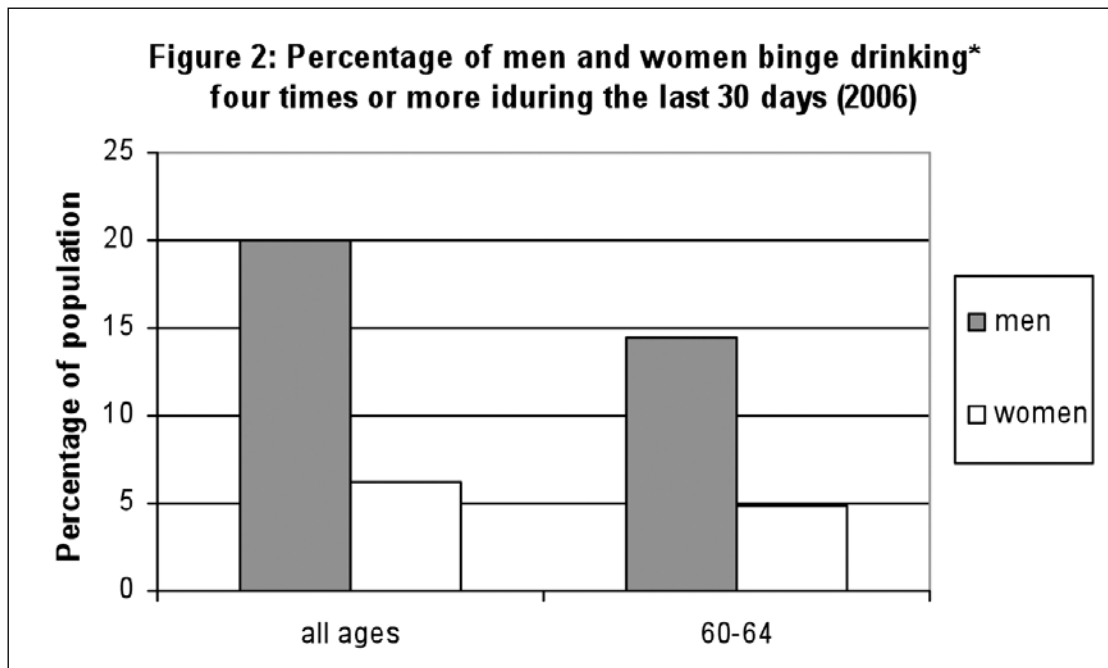
**Outpatient treatment**

The statistical report for 2006 on treatment facilities for substance-use disorders in Germany shows that among all persons in outpatient treatment, more than 54.7 per cent are treated because of alcohol-related problems. Among the total with an alcohol diagnosis (73,968), 12.7 per cent were 55 years or older in 2006 (an increase of 0.8 per cent from 2005).



Source: Epidemiologischer Suchtsurvey 2006

\*Hazardous drinking = 60–120g pure alcohol per day for men, and 40–80 g per day for women.



Source: Epidemiologischer Suchtsurvey 2006

\*Binge drinking = 5 or more glasses of alcohol during one occasion.

### Inpatient treatment

There has been a slight decrease in the total number of patients with alcohol related diagnoses, from 24,380 in 2005 to 23,894 in 2006. Among these patients, the percentage of >55 year olds increased slightly from 11.9 to 12.5 per cent.

### Residential homes for the elderly

A study<sup>7</sup> titled "Alcohol problems among residents in old age homes in the city of Mannheim" shows that hazardous use of alcohol and addiction is more common among residents than non-residents (of the same age). Another finding was that alcohol problems among residents were more of a cause than a consequence of living in a residential home, and that a large proportion of residents with alcohol problems retained their problematic drinking behaviour. The study also found that

the average age of persons entering residential homes is significantly lower when hazardous use or addiction is prevalent.

### Economic costs

Germany does not currently have accurate economic data concerning alcohol related harms and the elderly. The overall costs caused by alcohol to German society are estimated to be 24.2 billion Euros annually.

<sup>7</sup> Weyerer, S., Schaufele, M., & Zimer, A (1999) Alcohol problems among residents in old age homes in the city of Mannheim, Germany. Australian and New Zealand Journal of Psychiatry, 33, 825-830.

# Poland

## Background

Alcohol mortality data comes from the National Institute of Public Health (National Institute of Hygiene) data base; treatment statistics are derived from the database operated by the Institute of Psychiatry and Neurology; and information on drinking habits were computed from a 2002 survey involving a random sample of the general population (over 3000 people) aged 16 plus. Mortality and treatment data are provided in absolute figures. The number of people aged 60+ in Poland increased by 10 per cent during the last 10 years but the total population has not grown.

## Drinking habits

Between 1998 and 2007, recorded alcohol consumption increased by 40 per cent in Poland from 6.5 to 9.3 litres per capita. A major increase in consumption has been noted since 2002 when the alcohol excise tax was reduced by 30 per cent. Currently, beer and spirits (vodka) are beverages of choice, while wine consumption fluctuates around 10 per cent of total consumption. The proportion of abstainers among people aged 60+ years is 3–4 times higher compared to the population below 60 years of age. Almost 50 per cent of women and more than 25 per cent of men in the 60+ age group reported not drinking during last 12 months (Figure 1). It is worth noting that abstention rates among 60–64 years old are much lower compared to older cohorts, and their average consumption levels are higher. This is partly attributed to the fact that the retirement age for men is 65 years.

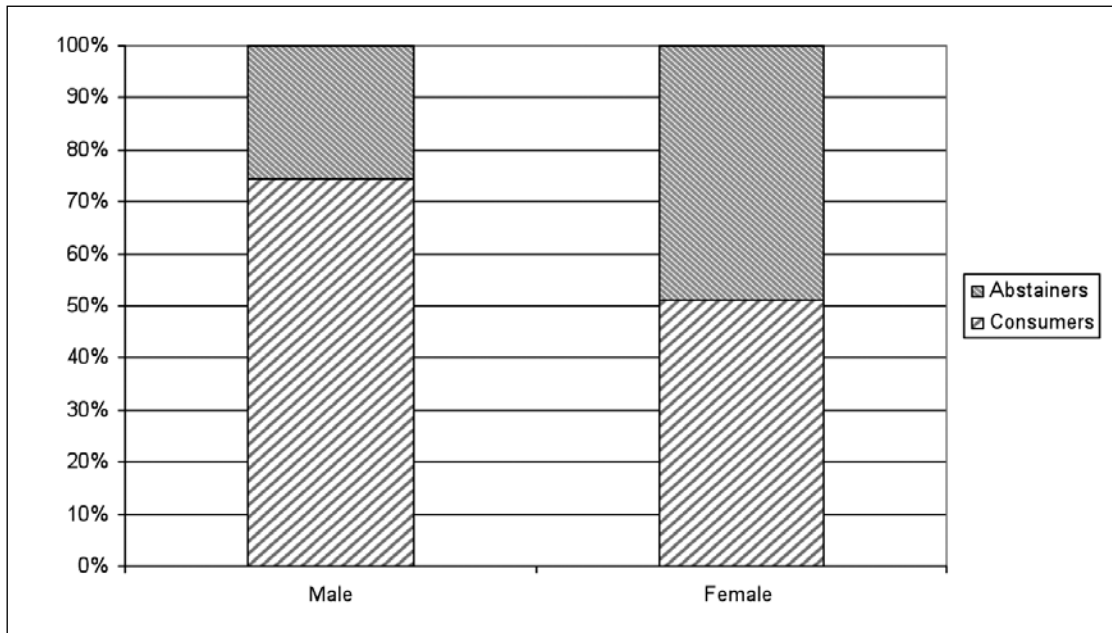
The beverage preferences of older consumers are similar to those of the general population. The beverage of choice for men and women alike is vodka followed very closely by beer. Wine seems to be the least popular beverage among men and women (Figure 2).

Annual alcohol consumption among older consumers is two times lower compared to the general population. The majority of men and women in this age group consume less than 1.2 litres of pure alcohol annually. Only 18 per cent of men and less than 2 per cent of women drink over 6 litres annually. Less than 10 per cent of men and 1 per cent of women drink more than 12 litres of pure alcohol each year (see Figure 3, below).

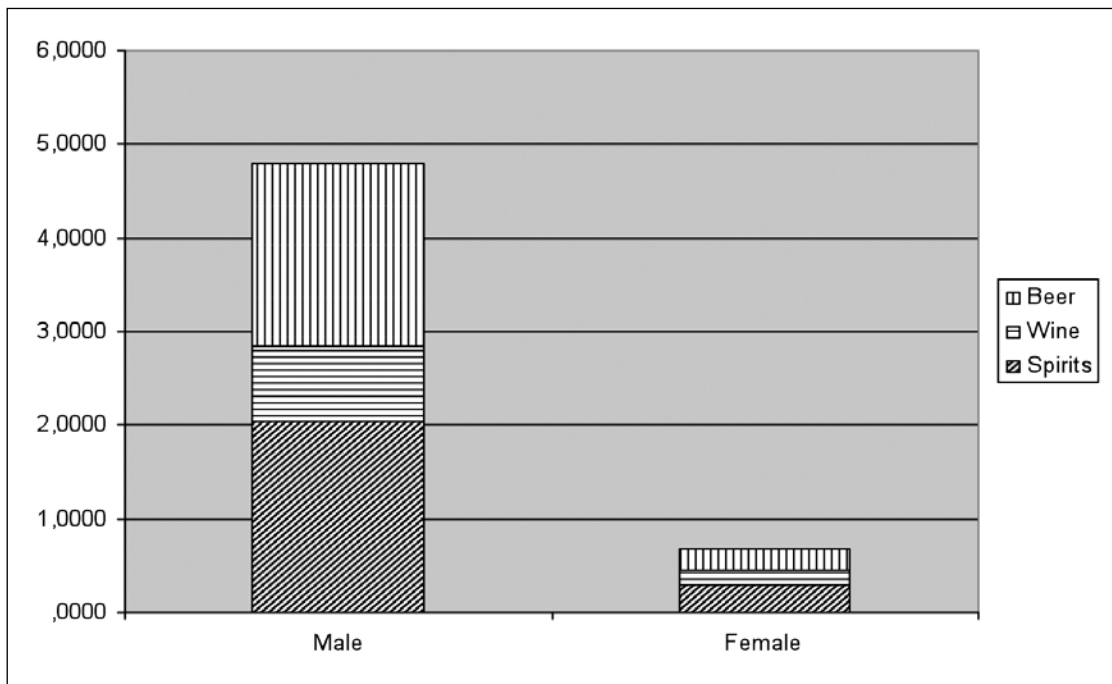
## Trends in alcohol-related harm

To calculate the total alcohol-related mortality, four major diagnostic categories were considered: Mental and behavioural disorders due to alcohol, Alcoholic cardiomyopathy, Liver diseases, and Alcohol poisoning. These four diagnostic categories account for over 10,000 deaths annually in Poland. Most alcohol mortality is caused by liver diseases, followed by deaths due to mental and behavioural disorders and alcohol poisoning. Recorded mortality due to alcoholic cardiomyopathy is very low (less than one hundred annually) as doctors are reluctant to give such a stigmatizing diagnosis.

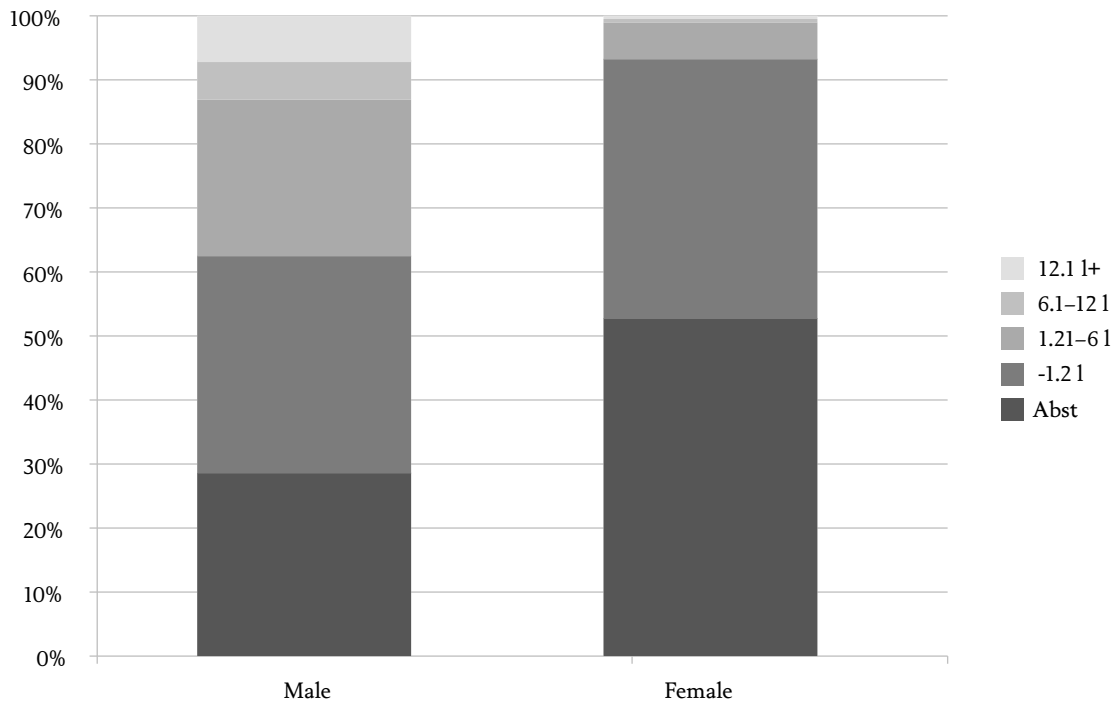
Deaths in the population aged 60+ years constitute one third of the overall alcohol-related mortality. Last year witnessed a growing number of deaths in older age groups, in particular among those aged 60–64 years who are still alcohol consumers. Among all older men (excluding 80+ years), this growth was initiated in 2003 just after the excise tax was reduced. In the age group 60–79 years, the number of deaths increased by 25 per cent between 2002 and 2007. A similar but less prominent growth was observed among older women (see Figures 4 and 5, below).



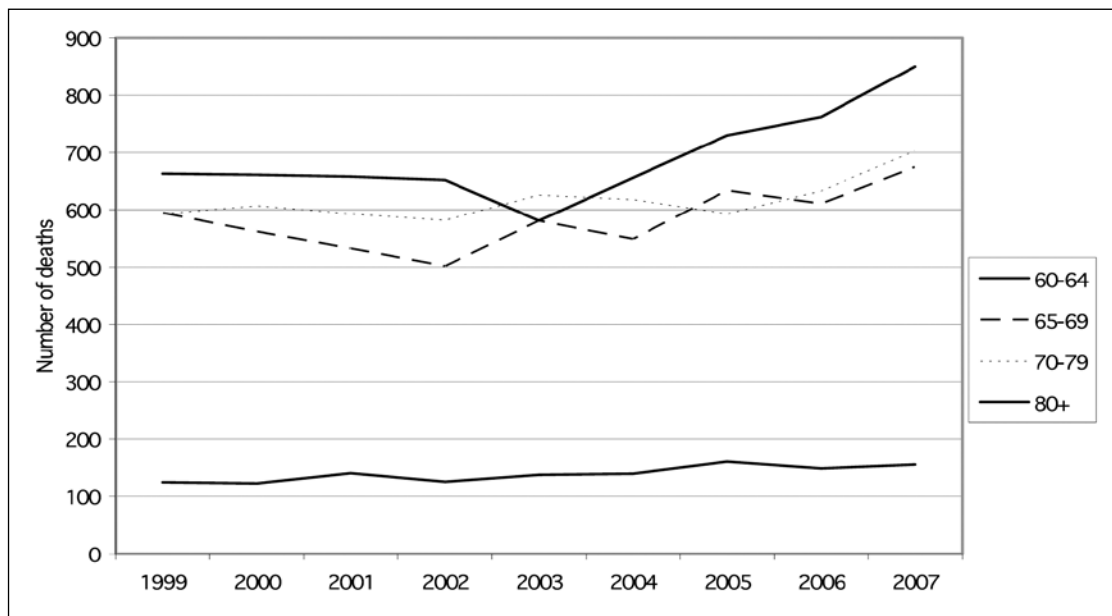
**Figure 1:** Percentage of abstainers and alcohol consumers aged 60+ (2002)  
**Source:** National population survey 2002



**Figure 2:** Estimated annual consumption of spirits, wine and beer in litres of pure alcohol among adults aged 60+ (2002)  
**Source:** National population survey 2002



**Figure 3:** Distribution of annual alcohol consumption (litres of pure alcohol per year) among men and women aged 60+ (2002)  
**Source:** National population survey 2002



**Figure 4:** Deaths due to alcohol-related diseases or poisoning among men (1999–2007)

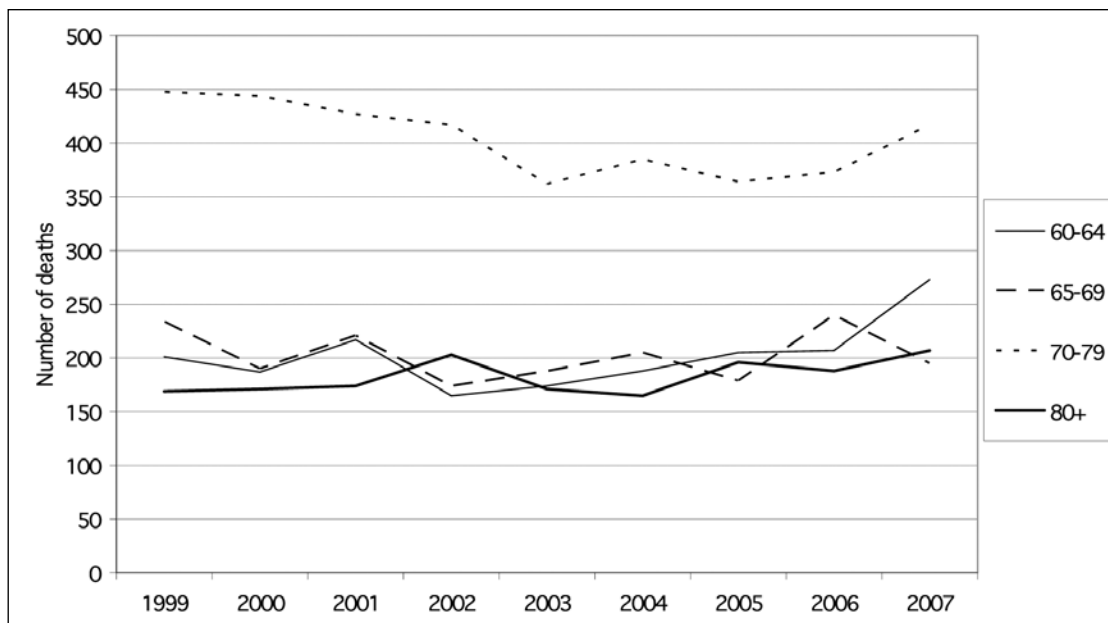


Figure 5: Deaths due to alcohol-attributable diseases or poisonings among women (1999–2007)

#### Treatment for mental and behavioural disorders due to alcohol use

Out-patient treatment statistics offer aggregate data for the number of patients treated for mental and behavioural disorders due to alcohol use in mental health clinics, alcohol treatment clinics and drug treatment clinics. Exact data for specific age groups are only available for 2003–2006. During this period the number of patients aged 65+ increased by one third from 4278 to 5677 and their share among all patients changed from 2.7 to 3.4 per cent.

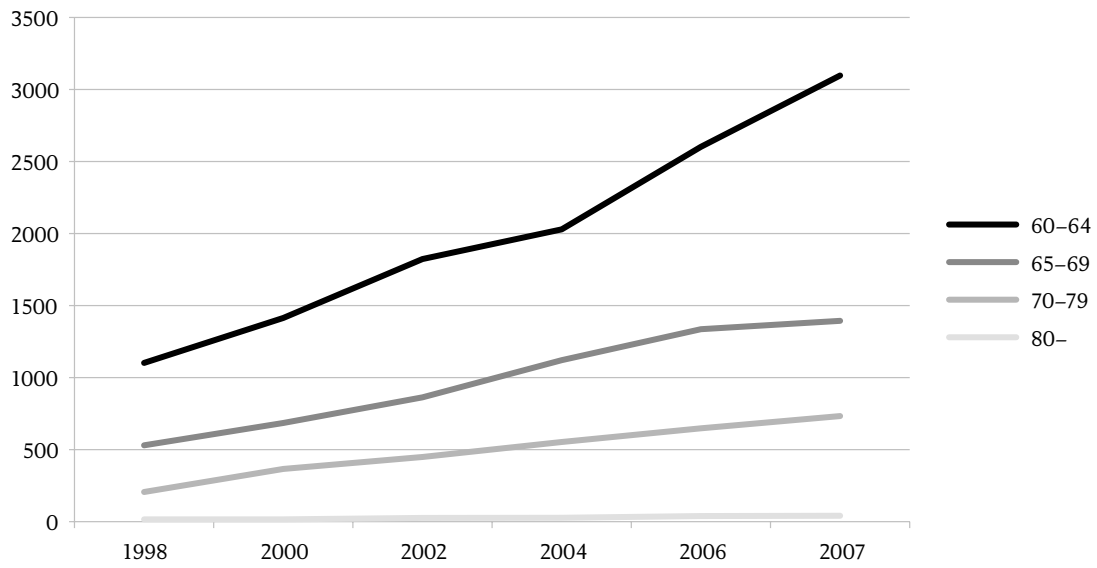
All patients hospitalised due to mental and behavioural disorders are combined to calculate their total number. Between 1998 and 2007, the number of older patients in residential treatment increased 2.8 times among men and 3.2 times among women. In 1998, patients in the 60+ age group constituted 4.6 per cent, compared to 8.3 per cent in 2007 (see Figures 6 and 7, below).

#### Economic or cost data

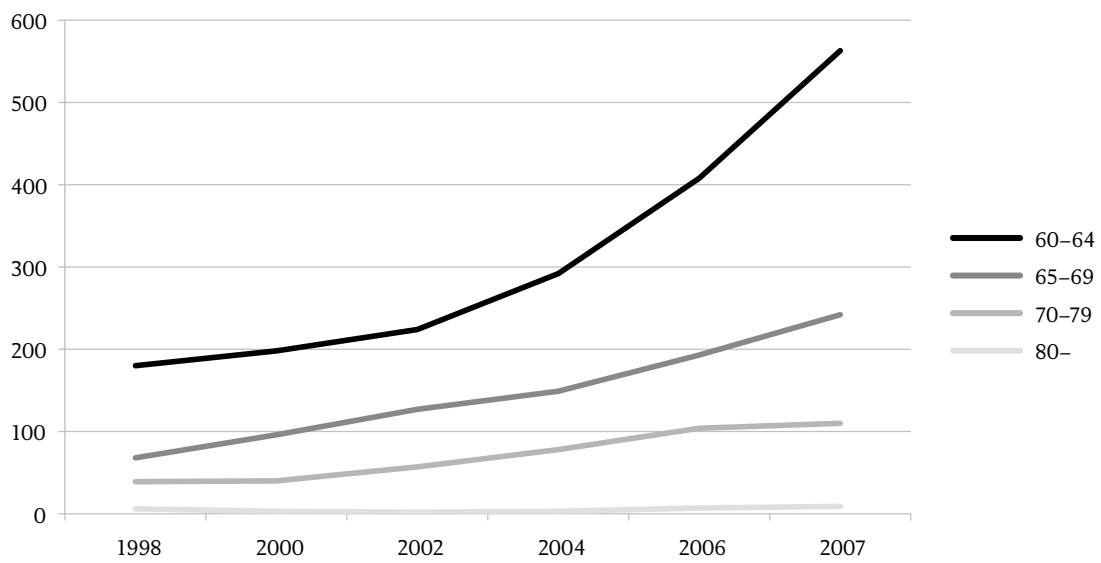
No economic data on cost of alcohol harm are available.

#### Alcohol consumption guidelines for the elderly

There are no special guidelines on alcohol consumption for the elderly in Poland, nor is there any training offered to treat alcohol problems among elderly citizens. For the last few years, the State Agency for Solving Alcohol Problems has offered special training for staff of residential social welfare institutions, which accommodate mostly elderly people. The program does not include any lectures or tutorials that take into consideration any issues pertinent to elderly people, nevertheless, practical questions in this regard come to the surface during training sessions.



**Figure 6:** Alcohol-related hospitalizations among men 60+, by age group in 1998–2007 in Poland (in inpatient and intermediate care facilities).



**Figure 7:** Alcohol-related hospitalizations among women 60+, by age group in 1998–2007 in Poland (in inpatient and intermediate care facilities).

# Spain

## Background

Three surveys are conducted on a regular basis in Spain to assess levels of alcohol use, but only one, the National Health Survey (NHS), gathers data on alcoholic beverage use among people over 65 years of age. The NHS conducts a population survey distributed to people living in private households. The sample consists of: (1) 29,478 interviews with adults (age 16+); and (2) 9,122 interviews with the mother, father or legal guardian of children aged 0–15 years. Only one major historic series exists, which is the use of alcoholic beverages in the past two weeks (from 1987).

## Alcohol consumption (last two weeks)

From 1987 to 2006, self-reported consumption of alcohol during the last two weeks increased from 34.5 per cent to 48 per cent in both sexes in the 65–74 age group. During the same period, consumption among the 75+ age group increased from 25 per cent to 37 per cent. In recent years, a considerable increase in alcoholic beverage use has been observed in both men and women. Elderly women report a higher abstention rate compared to elderly men of the same age. For example, in 2006, 71 per cent of men aged 65–74 years reported consuming alcohol during the last two weeks compared to 30 per cent of women in the same age group. In the same year, 58 per cent of men and 23 per cent of women aged 75 plus reported drinking alcohol at least once during the past two weeks. Compared to the general population (all adults 16+), the percentage of abstainers is higher in the older age groups for both men and women. Differences in abstention rates between older people and younger adults are more pronounced among women. In older men, the differences across age are smaller (in 2006, men 75+ years = 58 per cent; 65–74 = 71 per cent; 55–64 = 73 per cent; 25 to 34 = 72 per cent – see Figures 1, 2 and 3, below).

## Alcohol consumption (last 12 months)

Data was only available for 2003 and 2006. The percentage of individuals aged 65–74 and 75+ who consumed alcoholic beverages increased from 56 per cent in 2003 to 68 per cent in 2006. Consistent with consumption trends reported during the past two weeks, elderly people reported lower average alcohol consumption during the past 12 months compared to the general population.

## Consumption and socioeconomic status (SES)<sup>8</sup>

This data was collected during the last two NHS surveys in 2001 and 2006. The use of alcoholic beverages was observed to be somewhat lower in men and women from lower SES populations (Figure 4). Similar differences were found in both genders in the 65+ age group, with the largest difference observed in women (Figure 5).

## Living with a partner

According to the data from 2001 and 2006 surveys, the percentage of individuals aged 65+ who reported consuming alcoholic beverages was higher among those who lived with a partner, compared to those individuals who do not. The same trend also occurred in the general population (all adults 16+) in Spain.

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<sup>8</sup> Socio-economic status (or social class) is defined here according to the Spanish National Classification of Occupations (CNO), 1994. They are defined as follows - Class I: Directives from the Public Administration and companies with 10 or more employees. Professions with a degree corresponding to second and third university cycle. Class II: Company Directors with less than 10 employees. Professions with a degree corresponding to the first university cycle. Class III: Clerks and administrative assistants. Workers from personal and safety services. Freelance workers. Supervisors of manual workers. Class IVa: Qualified manual workers. Class IVb: Semiqualfied manual workers, and Class V: Non qualified workers.



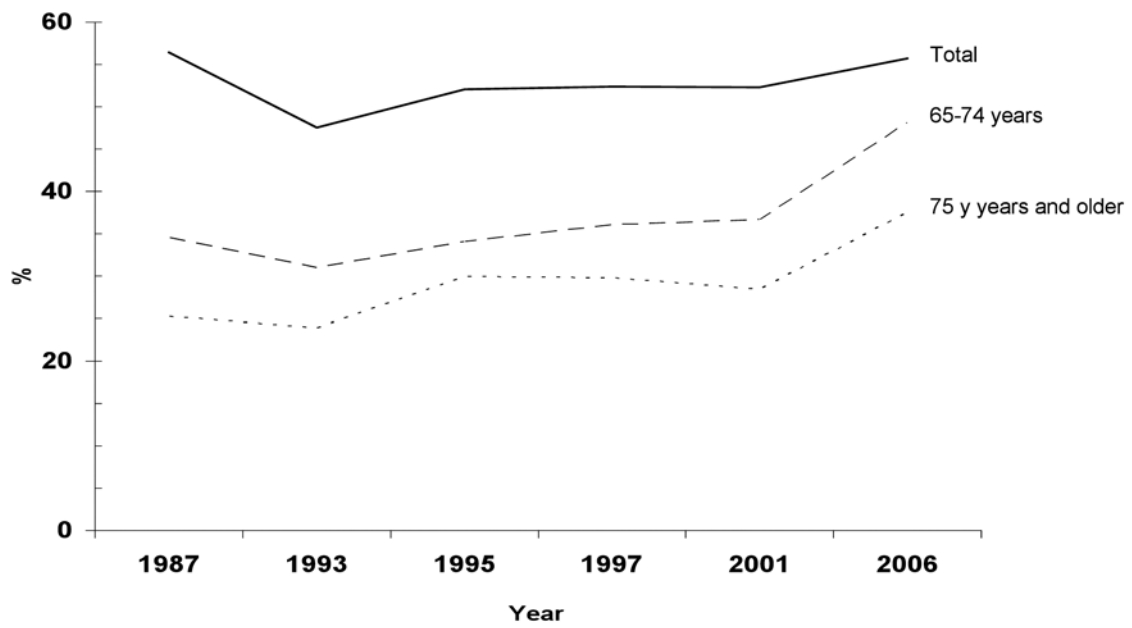


Figure 1: Self reported alcohol use during the last two weeks among men and women (1987–2006)

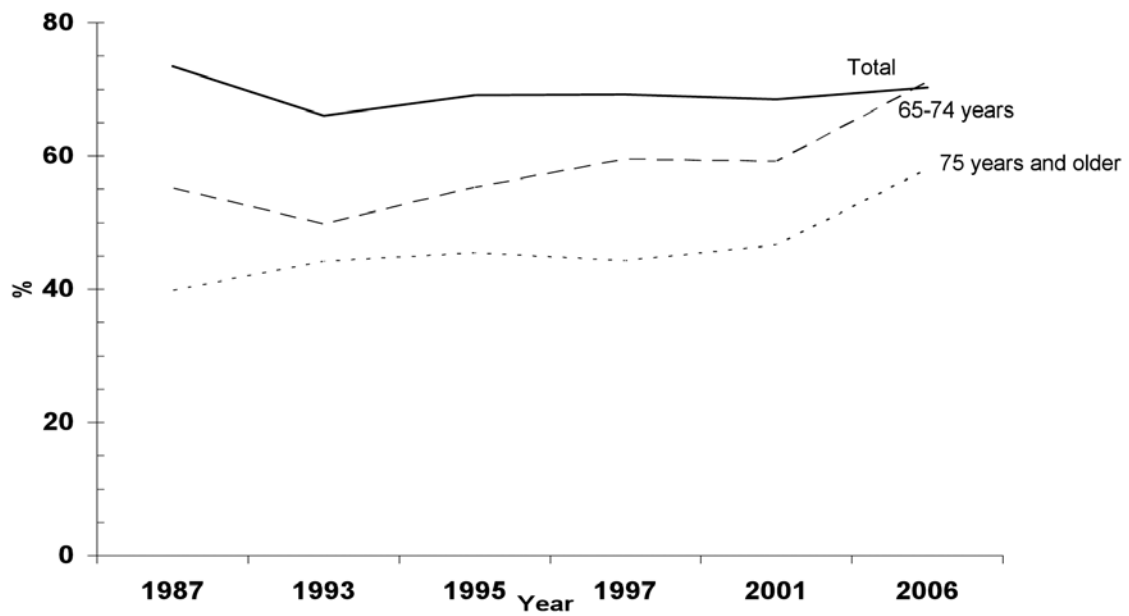


Figure 2: Self-reported alcohol use during the last two weeks in males (1987–2006)



Figure 3: Self-reported alcohol use during the last two weeks among females (1987–2006)

#### Regular (weekly) alcohol consumption

Data is only available from 2006. It shows that the percentage of individuals in the 65–74 and 75+ age groups that consume alcoholic beverages at least once per week is lower than in the total population, and is much higher in men compared to women. In terms of socio-economic status, the findings are the same as in the sections above.

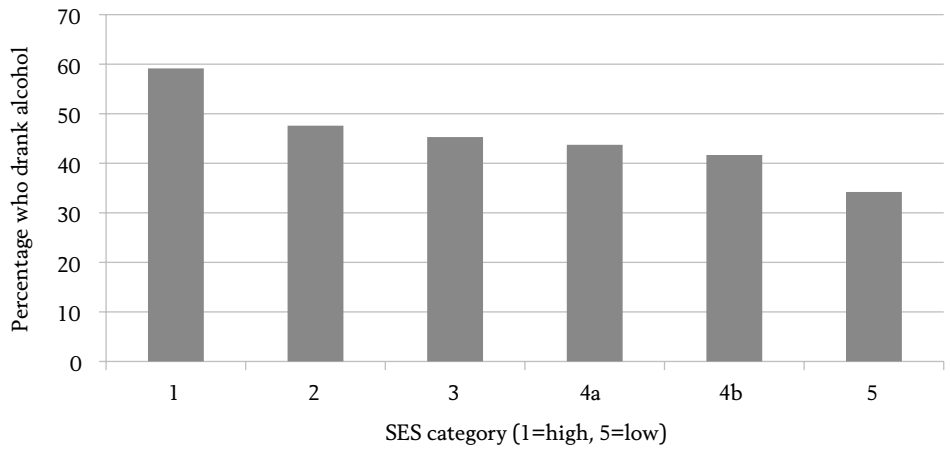
#### Hazardous drinking<sup>9</sup>

An interesting addition to this data comes from the Disability, Impairment and Health Status Survey, developed by the National Statistical Institute in 1999, which provides information about alcoholic beverage use in individuals over 65 years. Figure 7, below, shows the prevalence of different consumption thresholds measured in 1999. Although rather dated, this is the only data available regarding the volume of alcohol consumed in Spain. In the survey, 27.3 per cent consumed alcohol during the last week, 18.3 per cent

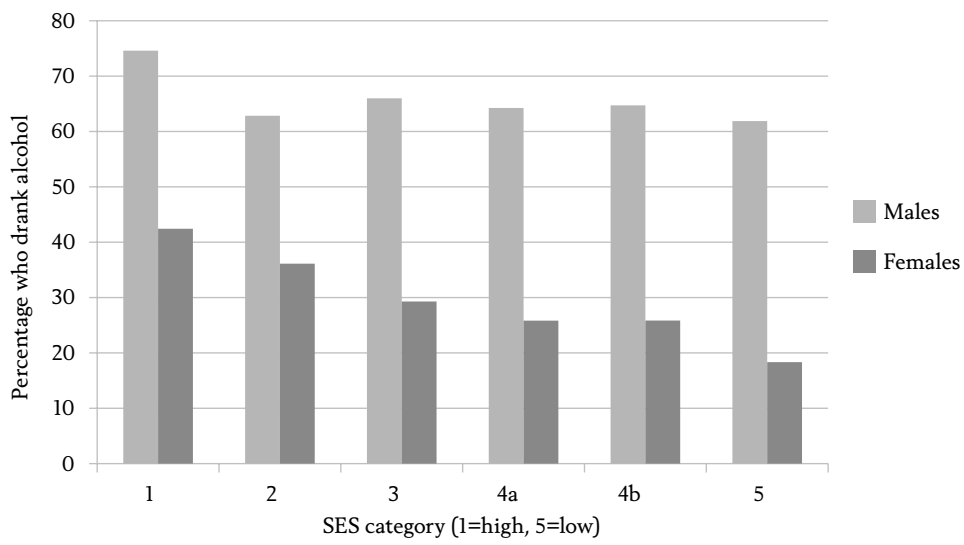
consumed small amounts (up to 175 cc. of pure alcohol/week), 8.3 per cent used between 176 and 525 cc., and 0.8 per cent used more than these amounts. Those above the age of 65 consumed less alcohol than younger age groups, but the differences between elderly men and women were much higher than reported in the NHS data.

In conclusion, most studies about alcohol use in Spain target the adult population and overlook individuals over the age of 65 years. Abstinence rates have reduced in this age group in recent years, although the percentage of abstainers is still higher compared to the general population. Across all measures, there are important gender differences between men and women that should be given attention in future research.

<sup>9</sup> More than 40 g of pure alcohol per day for men and more than 20 g/day for women.



**Figure 4:** Self-reported alcohol use during the past week (2006) by socio-economic status, age 65+



**Figure 5:** Self-reported alcohol use during the past week (2002) by gender and socio-economic status, age 65+

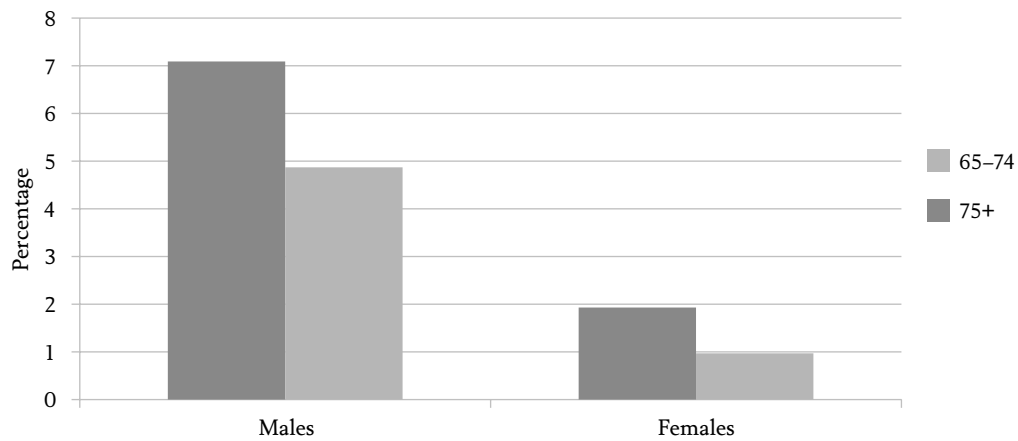


Figure 6: Percentage of elderly men and women drinking alcohol at hazardous levels (2006).

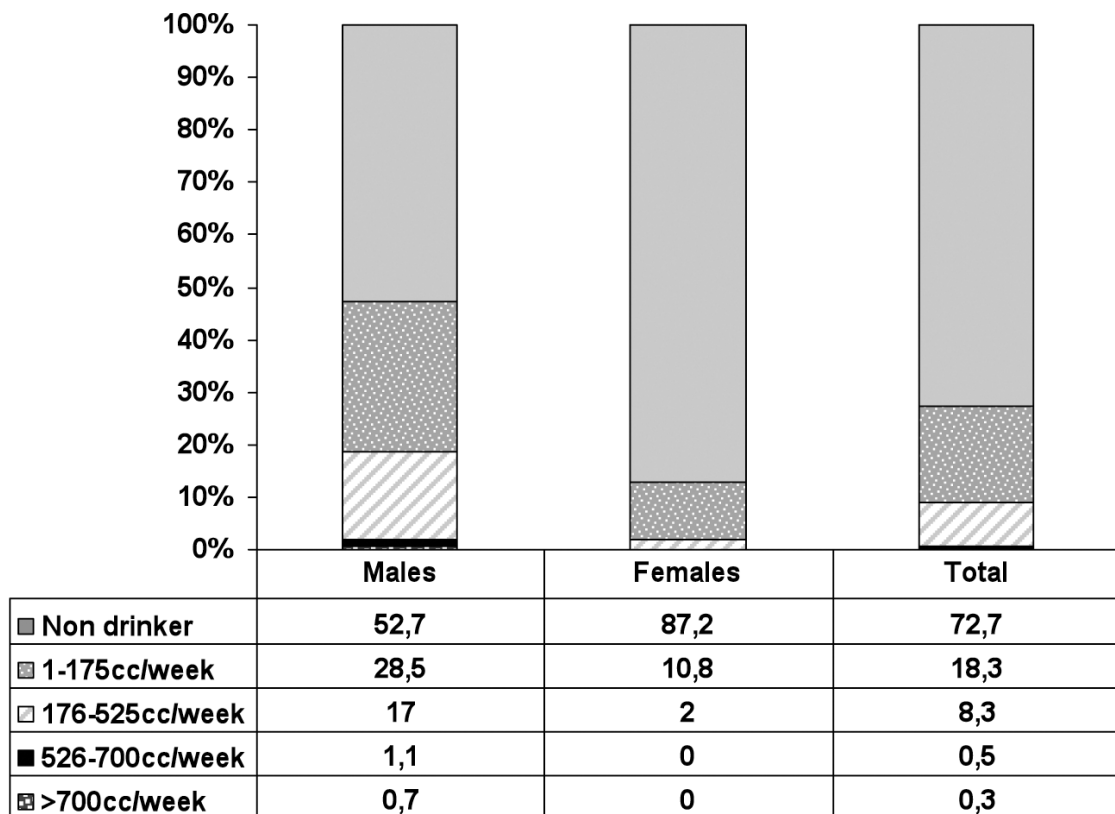


Figure 7: Prevalence of alcohol drinking in the population older than 64 years (1999)

## Chapter 5: Summary and conclusions

As a part of its Presidency of the Council of the European Union in 2009, the Swedish Government has initiated the production of several reports on alcohol related matters of importance to the EU. The Swedish National Institute of Public Health was commissioned by the Swedish Ministry for Health and Social Affairs to produce this report concerning alcohol consumption trends and related harms among elderly (60 plus) EU citizens. The main purpose of the report has been to outline the health-related, social and economic effects of alcohol use by the elderly; to discuss recent trends in alcohol consumption and alcohol related harms; and to determine whether current levels of consumption are problematic or warrant further attention. This Chapter summarises the key findings, with a particular focus on the ten Member States surveyed.

A wealth of information exists in the scientific literature concerning the effects of alcohol on the body. A comparable volume of information can be found regarding the drinking habits of European adults, and their health consequences (see, for example, Anderson and Baumberg, 2006). To our knowledge, however, this is the first report to examine recent trends in alcohol consumption and related harms among elderly Europeans. For many reasons, including the physiological changes associated with ageing, increasing frailty and medication use, the elderly are more vulnerable to the negative health effects of alcohol compared to younger adults. Yet, it is clear that more research is needed to better understand these effects and how they influence ageing adults who drink alcoholic beverages. Accurate and comprehensive data is a necessary starting point, and this report highlights significant gaps in the information currently available within Europe. While some countries (e.g., Finland and Italy) have captured a wealth of data over the past 10 to 15 years, others have accumulated only basic data on alcohol consumption,

and no information at all on important issues such as hospitalisation trends, staff training, funding, or consumption guidelines. There is also considerable diversity with regard to how alcohol consumption is actually measured, with some Member States referring to "units", "portions" or "standard drink" measures, consumed during the last week, month or year. This generates confusion for the reader and makes comparisons between countries more difficult. The use of standardised questionnaires is critical if meaningful comparisons are to be made between EU Member States in the future. A step in the direction towards improved comparability has been taken by the newly formed Committee on Data Collection, Indicators and Definitions, which has adopted a definition of harmful drinking (described in chapter Terminology and definitions), which will be used in the next European Health Interview Survey.

It should also be emphasized that the results presented here apply only to the ten Member States surveyed. Care was taken to include a geographically representative selection of EU Member States for the project, however, caution should be exercised when extrapolating these preliminary results to countries not included in the survey. While a degree of harmonisation has taken place within Europe in recent years with fewer differences between the northern and southern parts of Europe in terms of the volume and type of alcohol consumed, drinking patterns still vary between individual countries.

As this report is about the drinking behaviour of adults 60 years of age and older, it has relied heavily on self-report surveys rather than alcohol sales data, which cannot be analysed according to age. One limitation of self-reported data is that it can underestimate the amount of alcohol that is really consumed by as much as 60 per cent. For example, in Sweden in 2002, sales data indicated that, on average, Swedish adults (aged 15 plus)

consumed 9.9 litres of pure alcohol each year, while the self report data for the same year indicated only 4.1 litres of alcohol were consumed per adult – a sizable difference, and one that may have implications for public health policy given the positive association between the volume of alcohol consumed and alcohol related harm (Leifman and Gustafsson, 2003). It has also been suggested that the elderly, perhaps more than younger adults, have a propensity to hide or underestimate their own consumption (O'Connell et al., 2003), which could skew this tendency even further. What this suggests is that the consumption figures presented in this report are likely to represent a conservative estimate of how much alcohol people are actually drinking. Notwithstanding these cautionary notes, several key findings emerge from the information presented by the ten participating Member States.

## Key findings

### **1. Alcohol abstention rates have decreased in several Member States in recent years.**

Most elderly Europeans report drinking alcohol at least once during the previous year, and abstention rates have decreased in several Member States in recent years. Typically, around 80 per cent of men and 50 per cent of women report drinking alcohol during the past month or year. In Finland, for example, 77 per cent of men, and 54 per cent of women reported consuming alcohol during the previous year (2007), an increase of 9 per cent for men and 17 per cent for women since 1993. In Italy, 81 per cent of elderly men and 48 per cent of women drink alcohol, while in Poland the corresponding figures are 75 and 52 per cent, respectively. Overall, more elderly people are drinking alcohol in Europe today compared to 5–10 years ago, however, the proportion of elderly abstainers is typically 3–4 times higher compared to the total adult population; in other words, the elderly are still less likely to report drinking alcohol than younger adults, although there are early signs that abstention rates among elderly men are approaching those of the total adult population. Finland and Sweden both reported increases in the frequency of consumption by elderly men and women, and the UK reported a small increase in "last week" consumption by elderly men. However, omissions in the data provided by the remaining Member States make it difficult to know whether the frequency of consumption has risen among the elderly in the Member States surveyed. Changes in beverage preferences were also reported, with a shift away from spirits towards greater wine and beer consumption; a finding that is consistent with the total adult population in Europe (Anderson and Baumberg, 2006). Poland is one notable exception, where the beverage of choice is strong beer and spirits (specifically Vodka).

### **2. Elderly men drink more alcohol than elderly women and in ways that result in higher rates of hospitalisation and death.**

Our survey has highlighted striking gender differences between elderly men and women with respect to their alcohol consumption. In some countries, such as the United Kingdom, the frequency of alcohol consumption among elderly men approaches that of all adults (16+ years). Elderly women, on the other hand, consistently report drinking less alcohol (less frequently and in smaller amounts) than both elderly men and all adults, respectively. Predictably, there are some exceptions to this trend; for example, in Sweden more women reported drinking wine during the last week in 2007 than men. However, their average consumption was still below that of elderly men. In Poland, elderly men drink substantially more alcohol than elderly women, and between 1998 and 2007 they outnumbered women in alcohol-related hospital admissions by about four to one. Alcohol-related hospitalisations among elderly men and women have increased dramatically in several countries in recent years, particularly among the "young elderly" (aged 60–65 years). In Poland, for example, alcohol related hospital admissions more than doubled between 1998 and 2007 for both men and women in this age group. During the same period, Finland recorded a 130 per cent increase in alcohol related hospital admissions for women aged 60–64 years, but only a 46 per cent increase for men. In Sweden, the hospitalisation rate for elderly men remained largely stable during this period, but it rose among elderly women aged 50–64 and 65–80 years. The Finnish and Swedish results indicate that alcohol related hospitalisations have risen faster among elderly women compared to elderly men over the past ten years, which could represent a trend across the rest of Europe. Unfortunately, comparable data categorised by age was not provided by the remaining countries to assess

this possibility. In any case, the increasing alcohol consumption trend observed in women of different ages in some EU countries deserves particular notice, given the elevated cancer risk (in particular breast cancer) that has been established within the range of moderate regular intake and which normally do not become manifest until older age.

### **3. Elderly Europeans consume less alcohol per year compared to younger adults.**

In Poland, for example, the estimated annual per capita consumption of alcohol for all adults in 2006 was 9.3 litres, compared to 1.2 litres for adults over 60 years of age. Only 18 per cent of elderly Polish men and less than 1 per cent of women reported drinking more than 6 litres of pure alcohol annually. In Sweden in 2007, men drank about 6 litres of alcohol per year, compared to 4 litres among the elderly (aged 65–80 years). A survey conducted in Germany in 1998 shows that average consumption decreases steadily with age from 17.5 g/day among men aged 50–59, to 12.2 g/day among elderly men aged 70–79. The German survey showed a similar age-related reduction in hazardous drinking, from 39 per cent among 45–54 year old men to 28 per cent among men aged 65–79 (the reduction for women was 22 to 11 per cent). In the Czech Republic, the reported average consumption was 12.6 g/day for elderly adults, which is quite high, but it is unclear whether this has increased or decreased from previous years.

### **4. The well-established relationship between the total volume of alcohol consumed and alcohol-related harm also applies to the elderly.**

There is a positive relationship between the amount of alcohol consumed by adults and the degree of harm that results from this consumption. This connection has been demonstrated within adult (16–65) and adolescent populations (see Babor et al., 2003), and is one

important factor driving public health policies, which aim to reduce the price and availability of alcohol. Several Member States observed and commented on this relationship, noting that alcohol related hospitalisation and mortality rates increased significantly as a consequence of reduced alcohol prices and greater availability in recent years. In the UK, the affordability of alcohol more than doubled between 1970 and 2001, while in Finland, the price of alcoholic beverages dropped by 33 per cent in 2004 following the abolition of “quotas for travellers” tax-free alcohol imports from other EU Member States.

### **5. The elderly are not a homogenous group: alcohol consumption and alcohol related mortality differ between age groups.**

In most of the countries surveyed, there were clear differences in consumption within the elderly group. Adults aged 60–70 years typically reported more alcohol consumption and greater harms compared to those aged above 75 years. Both the amount of alcohol consumed and the harms associated with alcohol consumption appear to decrease significantly among people in the 80 plus age group. This trend can be seen in hospitalisation data from Finland and Sweden, where the “young-elderly” (aged 60–70 years) are over-represented in harm statistics and alcohol related deaths. Similar differences between the younger and older age groups can be seen in alcohol related mortality statistics. In the UK, for example, the highest death rates for men and women have occurred among those aged 55–74 years. Over the past ten years, the alcohol related mortality rate for adults aged 80 plus has typically remained stable in the Member States surveyed, while increases among adults aged 60–70 years were common. Importantly, several countries noted that marked increases in alcohol related deaths occurred in parallel with reduced alcohol prices, mainly brought about through reductions in excise taxes



within Europe. There are clear associations between the price and availability of alcohol, and alcohol-related mortality, both in younger and older adults. While it is difficult to predict future consumption and alcohol-related harm on the basis of this study, the rising mortality trend among the "young elderly" (aged 60–70 years) appears to be levelling out since around 2005 onwards in several countries. More time is needed to ascertain which direction it will take in the future.

There are several possible explanations for these age-related differences; for example, people over 75 are more likely to have chronic health problems that require medication, which may reduce their propensity to drink alcohol. Another possibility is that retirement from work results in life changes and stress, which temporarily increases alcohol consumption among men and women between 60 and 70 years of age. Perhaps the most likely explanation, however, is that the age-related differences in alcohol consumption observed in this study represent a "generation" or age-cohort effect. The "young elderly" in this study, aged 60–70 years, were born in the 1940s shortly after the Second World War. This is a cohort of individuals sometimes referred to as the "Wet Generation" who grew up during rapidly changing social circumstances, and at a time when alcohol was increasingly available during their youth and early adult life. Previous studies have demonstrated an association between these cohorts and higher levels of alcohol-related mortality (Simpson, 1987; Rosen and Haglund, 2006). Assuming this explanation is correct, it may be reasonable to expect an increase in alcohol related mortality over the next ten years as this "high-risk" cohort reaches post retirement age, and the long-term health effects of their drinking begin to manifest in higher than average morbidity and mortality rates.

## **6. Elderly Europeans drink in less hazardous ways compared to younger adults.**

Across all populations, hazardous alcohol consumption and binge drinking are associated with higher rates of hospitalisation and injury. These drinking patterns are much less common among the elderly compared to younger adults. In Sweden, during 2007, 11.7 per cent of adult men and 2.9 per cent of adult women reported binge drinking during the past week, compared to only 2.5 per cent of elderly men and 0.5 per cent of elderly women, respectively. The rate of binge drinking among elderly Italians was also comparatively low, at 5 and 0.6 per cent for men and women, respectively. However, gaps in the available data concerning trends in hazardous consumption make it difficult to predict the likely direction of future consumption patterns; of the four countries which did report such trends (the UK, Sweden, Italy and Finland), none indicated a rise in harmful drinking among the elderly in recent years. Finland has noted a steady increase in the number of elderly drinking eight or more alcoholic beverages per week between 2001 and 2007, but it is unclear what proportion of these are hazardous or binge drinkers. Italy has also noted a slight increase in binge drinking only among elderly men aged 65 plus, from 5.0 in 2003, to 5.5 per cent in 2007 – still well below the adult average. No data was provided by Latvia, Slovenia, Spain or Poland regarding trends over time in binge drinking.

## **7. Alcohol-related deaths among elderly Europeans have increased markedly over the last ten years, and in some cases the death rate has more than doubled.**

In Europe, deaths and hospital admissions attributable to alcohol-related diseases are classified according to the World Health Organization's ICD-10 diagnostic manual. In this study, the most commonly reported diseases also accounted for the majority of alcohol-related health problems, namely: alcoholic

liver disease, mental and behavioural disorders due to alcohol use, fall injuries, hypertensive diseases, cardiac arrhythmias, liver cancer and epilepsy and status epilepticus.

Consistent with the gender differences in consumption, the alcohol-related death rates were also much higher among elderly European men compared to elderly women. In Finland, alcohol attributable deaths more than doubled over ten years (1997–2007) among adults aged 60 plus, and the rate of male deaths was more than double the rate of female deaths. Alcohol related deaths also increased in Sweden, the UK (where they more than doubled from 1991–2007), Slovenia, Latvia, Poland, and the Czech Republic. The rate of increase varies from 25 per cent in Poland to more than 100 per cent in the UK. Finland and Italy were the only countries to report a stable trend in deaths attributable to alcohol-related diseases over the last 10 years, but here also the death rate was significantly higher among elderly men. Germany does not currently have reliable alcohol mortality data available.

#### **8. Alcohol-related hospitalisations among the elderly – a mixed picture.**

Unlike the death rate, which has risen steadily across most of the Member States surveyed, alcohol-related hospitalisations show a mixed pattern, with some countries reporting steady increases, while others show a stable trend or a small reduction in some ICD-10 alcohol-related categories over the past 10 years. In countries where the hospitalisation rate has increased, the rise has not been as sharp as the marked increase in alcohol-related deaths. In Finland, there was a 25 per cent increase in alcohol-attributable hospital admissions between 1997 and 2007, with the largest rise seen among men 60–64 years of age. Sweden reports a small increase, mainly among elderly women aged 50 to 64, but the overall rate was significantly higher among men in this age group – a finding consistently reported by all countries surveyed.

In Italy, for example, the rate of hospitalisation has stabilised in recent years, but still just over 4 million alcohol related hospital discharges were recorded in 2004. In Poland, the percentage share of elderly in-patient hospital admissions due to an alcohol-related health problem rose from 4.6 per cent to 8.3 per cent between 1998 and 2007, and in Latvia a similar rise was also reported (from 6.1 per cent to 9.3 per cent, respectively). The figures indicate that, in these particular countries, the proportion admitted to hospital over the last 10 years with alcohol problems has risen among the elderly (age 60 plus). The gender difference between the number of men and women admitted to hospital with an alcohol-related disease or illness was noted to be high in Latvia, where 80 per cent of first-time alcohol-related admissions among the elderly involve men over 60 years of age. The UK reported a 75 per cent increase in elderly hospital admissions between 2003 and 2008, but a small reduction between 2005 and 2006. Similarly, Italy, Germany and Slovenia have each noted small reductions in elderly hospital admissions in recent years, suggesting that the steady increase observed in many countries since the 1990s may be levelling out, possibly in response to stable alcohol prices.

#### **9. The economic impact of alcohol use by elderly Europeans is unknown.**

Information about the estimated cost of alcohol related deaths and hospital admissions was reported by only three countries. In the UK, the reported costs to the national healthcare system associated with treating alcohol-related harm have risen from £363,338,051 in 2002/3 to £667,055,853 in 2007/8, which represents just over 50 per cent of the total costs for all ages. In Finland, economic costs are not estimated by age, but the total (all age) direct costs caused by alcohol problems amount to EUR 0.8 billion annually. Similarly, in Germany, the total costs for all ages were estimated to be around EUR 24.2 billion in 2006. Sweden estimates that up to

SEK 40 billion are spent annually on alcohol-related problems among all adults (based on data from 2002; Jarl et al., 2008). However, the absence of detailed cost data in this report should not downplay the large cost of alcohol-related harm in Europe and the world. Harmful alcohol use is associated with substantial economic costs, which were estimated to exceed EUR 125 billion in EU25 in 2002 (Anderson and Baumberg, 2006), and the net effect of alcohol use, even taking into account the purported health benefits, always results in a significant net loss of life and health (see "Introduction", Table 1).

#### **10. Most European Member States do not have alcohol consumption guidelines for the elderly.**

Comparatively little information was submitted by the nine participating countries with respect to alcohol consumption guidelines for elderly adults. Finland, Sweden and the UK have consumption guidelines applicable to all adults, but Italy was the only country to report a specific guideline for the elderly (no more than one alcoholic beverage, or about 12 g of pure alcohol per day). Guidelines developed by the Department of Health in the UK specify that adult women should not regularly drink more than 2–3 units of alcohol per day, and men should not exceed 3–4. Finland also recommends no more than two standard drinks per day, as does Sweden (up to 14 per week for men, and no more than 9 per week for women). The WHO European Regional Office recommends that adults not consume more than two alcoholic beverages (containing about 10 g alcohol) per day. Rehm et al (2008) recently suggested this amount to be "low risk" for most adults. However, as noted in the introduction to this report, it is likely that many elderly people are more sensitive to the effects of alcohol than younger adults, and may be at higher risk of harm from a given level of alcohol due to medication use or pre-existing illnesses. Given these additional risks, the Italian recommendation appears reasonable, but further research is needed to

determine the specific age-related risks for different levels of consumption. The use of alcohol consumption guidelines raises a number of issues which are discussed in Chapter 1.

#### **11. Training to enable healthcare professionals to identify and assist elderly Europeans who display signs of hazardous alcohol use either do not exist or appear to be inadequate.**

Each Member State was asked to provide information about staff training for healthcare professionals working with elderly adults. It has been suggested in two recent reviews that screening and detection of alcohol-related problems among the elderly is problematic because staff are not routinely trained to identify hazardous or harmful alcohol use problems in older adults (O'Connell et al., 2003; Reid et al., 2002). Such problems can be masked by other health complaints, or may be overlooked for various reasons, including the belief that "moderate alcohol use" is good for you or that elderly people should be allowed more freedom to drink, regardless of the consequences, during the latter part of their life (O'Connell et al., 2003). If this is true, it could mean that levels of hazardous alcohol use are currently underestimated. Another consequence of failing to identify alcohol-related harm is that the problem may escalate or become entrenched and more difficult to treat at a later stage.

Only five countries (Finland, Sweden, the UK, Italy and Poland) provided information about staff training. Each of these countries currently offer structured training programs for healthcare staff in substance abuse, but the courses are not geared towards the identification of alcohol problems among the elderly. Finland has a separate project run by non-government organisations targeting elderly people, and Sweden has a government-funded project operating in Stockholm, which includes information about working with older adults with substance abuse problems.

## What role will alcohol play in the future?

As a final point, it is worth considering what role alcohol could play in the lives of elderly Europeans in the future. As noted throughout this report, alcohol in Europe is now more affordable and readily available than ever before. Elderly Europeans are living longer, working longer and have access to more disposable income than before – changes which have influenced current drinking patterns. Lifestyle and health changes associated with ageing present elderly people with opportunities and challenges. For many, retirement and ageing is a period of great freedom, presenting opportunities to travel and spend more time with loved ones. However, for others the opposite may be true – retirement can result in social isolation and loneliness, feelings which can worsen in the context of health problems. Although not the focus of this report, it is known that depression is one of the main health issues facing elderly people and, for some, alcohol plays a role in alleviating depression and anxiety (Swedish National Institute of Public Health, 2008). In moderate quantities, and in the absence of health problems, this may not be problematic, but there is evidence suggesting that many elderly people develop hazardous drinking habits later in life in response to their changing social and health status, which again reinforces the importance of staff training to screen and detect risky drinking habits. Future research should address these issues and consider the circumstances under which elderly people use alcohol to alleviate psychological and physical distress. The psychosocial benefits of moderate drinking should not be forgotten, but nor should the health risks associated with hazardous consumption, particularly among the elderly who are already a vulnerable group.

The key findings set out above, combined with the research described in previous chapters of this report, lend support to the following conclusions about alcohol consumption among elderly Europeans in the Member States surveyed:

- Data collection and reporting systems in most of the Member States surveyed need to be improved. This report highlights substantial information gaps that limit knowledge regarding trends in alcohol consumption and the harms caused by alcohol use in this age group;
- It appears that alcohol consumption among the elderly is a subject which has until recently fallen between the gaps of ageing research on the one hand and alcohol and drug research and policy on the other;
- While abstention rates have decreased in several countries, and the frequency of consumption has increased in at least three (Finland, Sweden and among elderly men in the UK), these changes per se are not necessarily connected to alcohol-related harm;
- Rates of hazardous drinking and binge drinking are closely linked to alcohol-related injuries and mortality. This association holds true for the elderly just as it does for younger adults;
- Elderly men drink substantially more alcohol than elderly women, and in ways that are likely to cause harm to themselves or others. They are over-represented in alcohol-related hospitalisation and mortality statistics compared to elderly women, and may represent a high-risk group;

- Overall, the elderly are less likely to drink in ways that are harmful to their health compared to younger adults. Nevertheless, alcohol-related deaths have increased markedly in several Member States in recent years. This increase could represent a cohort or "generation" effect that may continue into the next decade;
- There are indications from three countries (Poland, Sweden and Finland) that alcohol-related hospitalisation rates among elderly women have risen sharply in recent years, especially among women between 60 to 70 years of age. This may represent a European trend and should be monitored closely;
- Research shows that moderate alcohol consumption can have important psychosocial benefits for the elderly, which should not be overlooked. The balance between psychosocial benefit and detriment is related to the total amount and the pattern of alcohol consumption;
- The cardiovascular benefits of light alcohol consumption by the elderly are currently debated. Epidemiological studies have shown a consistent relationship between the regular consumption of small amounts of alcohol and reduced cardiovascular risk. However, recent findings highlight methodological shortcomings with many of these studies;
- In many instances, alcohol related harms are reversible, which means that it is never too late for prevention;
- Producing guidelines about alcohol consumption for the elderly is difficult because the effects of alcohol depend largely on a person's individual health status, which can vary considerably with age;
- Early identification and brief intervention programmes in primary care are especially important for the elderly who have frequent contact with primary healthcare providers. Elderly citizens have the same rights as younger adults to access counselling and treatment services;
- It is important to design, implement and monitor the effects of staff training programmes to enable geriatric care staff to identify and assist elderly people who display signs of hazardous alcohol use;
- The connection between alcohol consumption and accidents or falls among the elderly remains unclear and underscores the need for improved data collection and standardised criteria for monitoring these relationships;
- While interest in alcohol use and related harms among the elderly is increasing, the issues raised in this report have received relatively little attention to-date and should be the focus of future research and public health policy.

## References

- Abbott, R.D., Curb, J.D., Rodriguez, B.L., Masaki, K.H., Yano, K., Schatz, I.J., Ross, G.W., & Petrovitch, H. (2002) Age-related changes in risk factor effects on the incidence of coronary heart disease. *Annals of Epidemiology*, 12(3):173-81.
- Adams, W.L. (1996) Alcohol use in retirement communities. *Journal of the American Geriatric Society*, 44: 1082-1085.
- Ahlström, S., Bloomfield, K., and Knibbe, R. (2001) Gender Differences in Drinking Patterns in Nine European Countries: Descriptive Findings. *Substance Abuse*, 22(1): 69-85.
- Aira, M., Hartikainen, S., & Sulkava, R. (2005) Community prevalence of alcohol use and concomitant use of medication – a source of possible risk in the elderly aged 75 and older. *International Journal of Geriatric Psychiatry*, 20(7) : 680-685.
- Allen, N.E., Beral V., Casabonne, D., Kan, S.W., Reeves, G.K., Brown, A., et al.(2009) Moderate alcohol intake and cancer incidence in women. *Journal of the National Cancer Institute*, Mar 4;101(5):296-305.
- Anderson P., Baumberg B. (2006) Alcohol in Europe – A public health perspective. Report to the European Commission. London: Institute of Alcohol Studies; 2006 June.
- Andréasson, S., & Allebeck, P. (2005) Alkohol som medicin fungerar dåligt (Alcohol functions poorly as medicine). *Läkartidningen*, 9(102) : 632-637.
- Australian Government, Department of Health and Ageing: Australian Guidelines to Reduce Health Risks from Drinking Alcohol, retrieved 23 March, 2009 from: <http://www.alcohol.gov.au/internet/alcohol/publishing.nsf/Content/guidelines>
- Baan, R.; Straif, K.; Grosse, Y.; Secretan, B.; El Ghissassi, F.; Bouvard, V.; Altieri, A. & Coglianò, V., on behalf of the WHO International Agency for Research on Cancer Monograph Working Group (2007) Carcinogenicity of alcoholic beverages, *The Lancet Oncology*, 8(4): 292 – 293.
- Babor, T.F., Campbell, R., Room, R. & Saunders, J.B. (1994) *Lexicon of Alcohol and Drug Terms*, World Health Organization, Geneva.
- Babor, T. F., & Higgins-Biddle, J.C. (2001) *Brief Intervention for hazardous and harmful drinking: A manual for use in primary care*. World Health Organization, Department of Mental Health and Substance Dependence.
- Babor, T.F., Higgins-Biddle, J.C., Saunders, J.B., & Monterio, M.G. (2001) *AUDIT: Alcohol Use Disorders Identification Test, guidelines for use in primary care*. World Health Organization, Department of Mental Health and Substance Dependence.
- Bagnardi, V., Blangiardo M., La Vecchia C. & Corrao G. (2001) Alcohol consumption and the risk of cancer: a meta-analysis. *Alcohol Res Health*, 25: 263-70
- Bagnardi, V., Zatonski, W., Scotti, L., La Vecchia, C., & Corrao, G (2008) Does drinking pattern modify the effect of alcohol on the risk of coronary heart disease? Evidence from a meta-analysis. *Journal of Epidemiology and Community Health*. Jul;62(7):615-9.
- Boffetta, P. and Hashibe, M. (2006) Alcohol and cancer *The Lancet Oncology* Feb;7(2): 149 – 156.
- Byles, J., Young, A., Furuya, H., & Parkinson, L. (2006) A drink to healthy ageing: The association between older women's use of alcohol and their health related quality of life. *Journal of the American Geriatric society*, 54 : 1341-1347.
- Callahan, C. M., & Tierney, W.M (1995) Health services use and mortality among older primary care patients with alcoholism. *Journal of the American Geriatric Society*, 43: 1378-1383.
- Corrao, G., Rubbiati, L., Bagnardi, V., Zambon, A., & Poikolainen, K. (2000) Alcohol and coronary heart disease: a meta-analysis. *Addiction*, 95(19) : 1505-1523.
- Davies, M.J., Baer, D.J., Judd, J.T., Brown, E.D., Campbell, W.S., & Taylor, P.R. (2002) Effects of moderate alcohol intake on fasting insulin and glucose concentrations and insulin sensitivity in postmenopausal women: A randomised controlled trial. *Journal of the American Medical Association*, 287 : 2559-2562.

- Du, Y., Scheidt-Nave, C., & Knopf, H (2008) Use of psychotropic drugs and alcohol among non-institutionalized elderly adults in Germany. *Pharmacopsychiatry*, 41(6) : 242-51
- English, D. R., Holman, C. D. J., Milne, E., Winter, M. J., Hulse, G. K., and colleagues (1995). The quantification of drug-caused morbidity and mortality in Australia 1995. Canberra: Commonwealth Department of Human Services and Health.
- European Commission (2006). The impact of aging on public expenditure: projections for the EU25 Member States on pensions, health care, long-term care, education and unemployment transfers (2004–2050). European Economy, Special Report No. 1, Brussels. Retrieved on 3 December 2008 from: [http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2006/eesp106en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2006/eesp106en.pdf)
- European Commission (2009) Europe's changing population structure and its impact on relations between the generations. Accessed from the Commission's website on 26 March, 2006: <http://europa.eu/rapid/press-ReleasesAction.do?reference=MEMO/05/96&format=HTML&aged=0&language=EN&guiLanguage=en>
- Ferreira, M.P., & Weems, M.K. (2008) Alcohol consumption in ageing adults in the United States: health benefits and detriments. *Journal of the American Dietetic Association*, 108(10): 1668-1676.
- Fillmore, K.M., Kerr, W.C., Stockwell, T., Chikritzhs, T., & Bostrom, A (2006) Moderate alcohol use and reduced mortality risk: systematic error in prospective studies. *Addiction Research and Theory*, 14(2): 101-132.
- Fillmore, K.M., Kerr, W.C., Stockwell, T., Chikritzhs, T., & Bostrom, A (2007) Has alcohol been proven to be protective against coronary heart disease? *Addiction Theory and Research*, 15(1): 35-46.
- Fillmore, K.M., Hartka, E., & Johnstone, B.M., et al.(1991) Meta-analysis of life course variation in drinking: The collaborative alcohol-related project. *British Journal of Addiction*. 86, 1221-1268.
- Finder, R.M., & Sandler, M (2004) Alcohol, wine and mental health: Focus on dementia and stroke. *Journal of psychopharmacology*, 18: 449-456.
- Heather, N (Ed). (2001) *International handbook of alcohol dependence and problems*. Chichester, Wiley.
- Holder, H (2000) *Sweden and the European Union: changes in national alcohol policy and their consequences*. Almqvist and Wiksell International.
- IARC (2007) Meeting 6–13 February 2007: Report (i) "Alcoholic Beverages" In: IARC Monograph Vol. 96, Consumption of Alcoholic Beverages and Ethyl Carbamate (Urethane). Retrieved on August 14, 2009, from <http://monographs.iarc.fr/ENG/Meetings/index1.php>
- Inkeroinen, T & Partanen, A (2006) Päihdepalvelujen tila 2005 (The State of Treatment Services for Drug Abusers in 2005). Helsinki: STAKES.
- Institut National du Cancer (2007) *Alcool et risque de cancers – état des lieux des données scientifiques et recommandations de santé publique*. Collection Rapports & synthèses éditée par l'institut National du Cancer. Retrieved on November 27, 2008, from [www.e-cancer.fr](http://www.e-cancer.fr)
- Jarl, J., Johansson, P., Eriksson, A., Eriksson, M., Gerdtham, U.G, Hemström, O., Selin, K.H, Lenke, L., Ramstedt, M., & Room, R (2002) The societal cost of alcohol consumption: an estimation of the economic and human cost including health effects in Sweden, 2002. *European Journal of Health Economics*, 9(4) : 351-60.
- Jyrkämä, J., & Haapamäki, L (2008) Åldrande och bruk av alkohol (Ageing and the use of alcohol). *Nordisk alkohol och narkotikatidskrift*, February 2008.
- Karlamangla, A.S., Sarkisian, C.A., Kado, D.M., Dedes, H., Liao, D.H., Kim, S., Reuben. D.B., Greendale, G.A., & Moore, A.A (2008) Light to Moderate Alcohol Consumption and Disability: Variable Benefits by Health Status. *American Journal of Epidemiology*, Nov 20 (Epub ahead of print).
- Klein, W.C., & Jess, C (2002) One last pleasure? Alcohol use among elderly people in nursing homes. *Health and Social Work*, 27(3) : 193-203.
- Kurzthaler, J., Wambacher, M., Golser, K., Sperner, G., Sperner-Uterweger, B., Haidekhar, A., Pavlic, M., Kemmer, G., & Fleischhacker, W.W. (2005) Alcohol and benzodiazepines in falls: an epidemiological view. *Drug and Alcohol Dependence*, 79(2) : 225-230.

- Leifman, H., & Gustafsson, N-K (2003) En Skål för det nya millenniet. En studie av svenska folkets alkohol-konsumtion i början av 2000-talet. (A toast to the new millenium. A study of the Swedish people's alcohol consumption at the beginning of the 21st century.) Forskningsrapport nr. 11, SoRAD, Stockholm.
- Leifman, H (2002) Contemporary drug problems. A comparative analysis of drinking patterns in six EU countries in the year 2000. Federal Legal Publications Inc.
- Lejoyeux, M., Delaroque, F., McLoughlin, M., & Adès, J (2003) Alcohol dependence among elderly French in-patients. *American Journal of Geriatric Psychiatry*, 11(3) : 360-4.
- Moore, A., Whiteman, E.J., & Ward, K.T. (2007) Risks of combined alcohol / medication use in older adults. *The American Journal of Geriatric Pharmacotherapy*, 5(1) : 64-74.
- Mukamal, K.J., Chung, H., Jenny, N.S., Kuller, L.H., Longstreth, W.T.Jr., Mittleman, M.A., Burke, G.L., Cushman, M., Psaty, B.M., & Siscovick, D.S. (2006) Alcohol consumption and risk of coronary heart disease in older adults: the Cardiovascular Health Study. *Journal of the American Geriatric Society*, 54(1) : 30-37.
- Mukamal, K.J., Mittleman, M.A., Longstreth, W.T.Jr., Newman, A.B., Fried, L.P., & Siscovick, D.S. (2004) Self-reported alcohol consumption and falls in older adults: cross-sectional and longitudinal analyses of the cardiovascular health study. *Journal of the American Geriatric Society*, 52(7) : 1174-1179.
- Mukamal, K.J., Kuller, H.L., Fitzpatrick, A.L., Longstreth, W.T., Middleman, M.A., & Siscovick, D.S (2003) Prospective study of alcohol dementia and risk of dementia in older adults. *Journal of the American Medical Association*, 289: 1405-1413.
- Murray, R.P., Connett, J.E., Tyas, S.L., Bond, R., Ekuma, O., Silversides, C.K., & Barnes, G.E (2002) Alcohol volume, drinking pattern, and cardiovascular disease morbidity and mortality: is there a U-shaped function? *American Journal of Epidemiology*, Feb 1;155(3):242-8
- Mäkelä, P., Fonager, K., Hibell, B. et al.(1999) Drinking habits in the Nordic countries. SIFA Rapport 2/99. Oslo: National Institute for Alcohol and Drug Research.
- NIAAA. Alcohol Alert No. 40: Alcohol and Aging. National Institute on Alcohol Abuse and Alcoholism; 1998. Retrieved 07/04/09 from: <http://pubs.niaaa.nih.gov/publications/aa40.htm>
- O'Connell, H., Chin, A.V., Cunningham, C., & Lawlor, B (2003) Alcohol use disorders in elderly people – re-defining an age old problem in old age. *British Medical Journal*, 327(September): 664-667.
- O'Hanlon, L.H. (2005) Studies Seek Molecular Clues on Alcohol's Role in Cancer. *Journal of the National Cancer Institute*, Nov 2, 97(21): 1563-1564.
- Oscar-Berman, M.; Shagrin, B.; Evert, D.L.; et al.(1997) Impairments of brain and behavior: The neurological effects of alcohol. *Alcohol Health and Research World*, 21(1): 65-75.
- Pfaff, J.J., Almeida, O.P., Witte, T.K., Waesche, M.C., & Joiner, T.E.Jr. (2007) Relationship between quantity and frequency of alcohol use and indices of suicidal behaviour in an elderly Australian sample. *Suicide and Life Threatening Behaviour*, 37(6) : 616-626.
- Pfefferbaum, A.; Sullivan, E.V.; Mathalon, D.H.; et al.(1997). Frontal lobe volume loss observed with magnetic resonance imaging in older chronic alcoholics. *Alcohol in Clinical and Experimental Research*, 21(3):521-529.
- Plurad, D., Demetriades, D., Gruzinski, G., Preston, C., Chan, L., Gaspard, D., Margulies, D., & Cryer, G (2008) Motor vehicle crashes: The association of alcohol consumption with the type and severity of injuries and outcomes. *Journal of Emergency Medicine*, Jun 10 (Epub ahead of print).
- RAND Europe (2009): The affordability of alcoholic beverages in the European Union: Understanding the link between alcohol affordability, consumption and harms. RAND Corporation.
- 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]
- Rehm, J., Room, R., & Taylor, B (2008) Method for moderation: measuring lifetime risk of alcohol-attributable mortality as a basis for drinking guidelines. *International Journal of Methods in Psychiatric Research*, 17(3): 141-151.



- Reid, C.M., Boutros, N.N., O'Connor, P.G., Cadariu, A., & Concato, J. (2002) The health-related effects of alcohol use in older persons: A systematic review. *Substance Use*, 23(3) : 149-164.
- Rimm, E.B., Williams, P., Fosher, K., Criqui, M., & Stampfer, M.J. (1999) Moderate alcohol intake and lower risk of coronary heart disease: meta-analysis of effects on lipids and haemostatic factors. *British Medical Journal*, 319(7224) : 1523-1528.
- Rose, D., Murphy, S.P., Hudes, M., & Viteri, F.E. (1995) Food energy remains constant with increasing alcohol intake. *Journal of the American Geriatric society*, 95 : 698-690.
- Rossov, J., & Romelsjö, A (2006) The extent of the "prevention paradox" in alcohol problems as a function of population drinking patterns. *Addiction*. Jan;101(1) : 84-90
- Ruitenbergh, A., van Swieten, J.C., Wittteman, J.C., Mehta, K.M., van Duijn, C.M., Hofman, A., & Breteler, M.M (2002) Alcohol consumption and risk for dementia: The Rotterdam study. *Lancet*, 359: 281-286.
- Saunders, J.B., Aasland, O.G., Babor, T., De la Fuente, J.R., & Grant, M. (1993) Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-III. *Addiction*, 88 : 791-804.
- Shai, I., Rimm, E.B., Schulze, M.B., Rifai, N., Stampfer, M.J., & Hu, F.B. (2004) Moderate alcohol intake and markers of endothelial function among diabetic men. *Diabetologia*, 47 : 1760-1767.
- Simpura, J., Levin, B., & Mustonen, H (1997) Russian drinking in the 1990s: Patterns and trends in international comparison. In: Simpura J. and Levin, B. (eds). *Demystifying Russian Drinking: Comparative studies from the 1990s*, pp79-109. Helsinki: STAKES.
- Smith-Warner S.A., Spiegelman D., Yaun S.S., van den Brandt P.A., Folsom A.R., Goldbohm R.A., et al. (1998) Alcohol and breast cancer in women: a pooled analysis of cohort studies. *JAMA*, 279 : 535-540.
- Sorocco, K.H., Ferrell, S.W. (2006) Alcohol use among older adults. *The Journal of Geriatric Psychology*, 133(4) : 453-467.
- Stockwell, T. (2001) Editor's introduction to prevention of alcohol problems. In: Heather N., Peters, T.J., and Stockwell, T. (eds.) *Handbook of Alcohol Dependence and Alcohol-Related Problems*, pp.680-683. Chichester, UK: John Wiley and Sons.
- Swedish National Institute of Public Health (2007) *Healthy Ageing – a challenge for Europe*.
- Tyas, S.L. (2002) Alcohol use and the risk of developing Alzheimer's disease. *Alcohol Research and Health*, 25(4):299-306.
- Waern, M (2002) Alcohol dependence and misuse in elderly suicides. *Alcohol and Alcoholism*, 38(3) : 249-254.
- Walsh, G.W., Bondy, S.J., & Rehm, J. (1998) Review of Canadian low-risk drinking guidelines and their effectiveness. *Canadian Journal of Public Health*, 89 : 241-247
- Wells, S., Broad, J., & Jackson, R (2004) Alcohol consumption and its contribution to the burden of coronary heart disease in middle-aged and older New Zealanders: a population-based case-control study. *Journal of the New Zealand Medical Association*, 117(1190):U793.
- World Health Organization (1992) *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. Geneva: World Health Organization.
- World Health Organization (2004). *WHO global status report on alcohol*. 2004. Geneva: World Health Organization.
- World Health Organization (2007). *WHO expert committee on problems related to alcohol*, 2007. WHO technical report series 944, Second report. Geneva: World Health Organization.
- Yearbook of alcohol and drug statistics, Finland (2008).
- Yeomans, M.R. (2004) Effects of food and alcohol intake in human subjects: Evidence for passive and active over-consumption of energy. *British Journal of Nutrition*, 92(suppl.1): 31-34.

## Appendix A

### VINTAGE project description

#### Objectives

VINTAGE will build capacity at the European, national and local levels by providing the evidence base and collecting best practices to prevent the harmful use of alcohol among older people, including the transition from work to retirement, and to invest in older people's health and well-being. Alcohol use disorders are common in older people, and with an ageing European population will increase in absolute numbers. Active sharing of best practices should upwardly harmonize policies and programmes to invest in older people's health and well-being. VINTAGE will contribute to the objectives of the Commission's Communication on alcohol to share best practices across countries, to the 2008 call in the field of health to provide guidance on preventing the harm done by alcohol to older people, and to the objectives of the second programme of community action in the field of health by investing in healthy life years of older people.

#### Methods

VINTAGE will undertake systematic reviews and will systematically collect examples of best practice on the harm done by alcohol to the health and well-being of older people and on the effective policies and programmes to reduce such harm from all countries of Europe.

#### Expected results

Reports on guidance for action and a database and inventory of examples of good practice will be actively shared with all relevant networks and organisations of professionals involved in the health and well-being of older people at all levels. VINTAGE will help reduce the major alcohol-related non-communicable diseases that affect older people (neuropsychiatric disorders and cancers), as well as increase healthy life years to help meet the challenges of the Lisbon process, including the sustainability of public finances, which

are under pressure from rising healthcare and social security costs, in addition to reducing health inequalities between different parts of the Union.

#### General objectives

The general objective of VINTAGE is to build capacity at the European, national and local levels by providing the evidence base for best practices to prevent the harmful use of alcohol among older people, including the transition from work to retirement.

#### Specific objectives

- To systematically identify, document and summarise the existing published and grey literature on the impact of alcohol on the health and well-being of older people,
- To systematically identify, document and summarise the existing published and grey literature on the prevention of harmful alcohol use by older people,
- To collect examples of best practices to prevent harmful alcohol use by older people using a structured template from all European countries at different levels,
- To ensure that information about the project and its main findings (all relevant reports, examples of best practices, and relevant laws and infrastructures) are actively disseminated, along with relevant key findings and implications for policy and programme development, to those responsible for alcohol policy and programme development, including those working in the fields of health and welfare of older people at the European, national, regional and municipal levels, in order to help build the capacity and knowledge of such personnel in making informed and evidence-based decisions.

## Appendix B

### UK National Treatment Agency publication "Models of care for alcohol misusers (2996)" – sections which refer to the elderly

#### 1.3.8 Drinkers with complex problems

"Those with additional and co-existing problems, including people with mental health problems, people with learning disabilities, some older people, and some with social and housing problems, may be particularly vulnerable. They may have complex needs that require more intensive or prolonged interventions, even at lower levels of alcohol use and dependence. Complex problems may also include difficulties that have significant impact on others, such as domestic abuse, whether as victim or perpetrator."

#### A3 Commissioning and providing an alcohol treatment system to meet a diverse range of local needs

"In commissioning an alcohol treatment system, particular consideration should be given to locally identified groups, such as individuals from black or minority ethnic groups; individuals with physical disabilities; homeless people and rough sleepers; offenders; older people; gay, lesbian, bisexual or transgender individuals; women; people affected by domestic abuse; individuals in rural communities; individuals with children; and individuals with work commitments. The development of local alcohol treatment pathways should facilitate this process."

#### B4.8 Delivering a range of alcohol treatments in a care-planned approach

"Community settings are preferred for the treatment of the majority of alcohol misusers, both because individuals need to learn how to change their drinking in their normal social environment and because it is cost-effective. Those individuals who are unable to leave the home or who would have difficulties attending a specialist agency – for example older people, disabled people and parents with childcare responsibilities – may need specialist alcohol treatment in their own homes or other community settings. However, some individuals

will require treatment in hospital or in supported residential accommodation."

Models of Care for Alcohol Misusers should be read alongside the linked National Treatment Agency guidance document Review of the effectiveness of treatment for alcohol problems (2006). For more information on Models of Care for Alcohol Misusers see the Department of Health website at: [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4136806](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4136806)

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