

# Alcohol and Ageing

Is alcohol a major threat to healthy ageing for the baby boomers?

A Report by the Alcohol and Ageing Working Group

Health Scotland commissioned this report from an independent group of experts in the field of alcohol and ageing. The recommendations represent the views of the members of that group, and not necessarily those of Health Scotland.

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# The Alcohol and Healthy Ageing Group

Work on healthy ageing was initiated by the Public Health Institute of Scotland (PHIS)\* in order to establish and investigate crucial issues of public health and ageing. This work is concerned with potential 'threats' to compression of morbidity in old age. Although there is some evidence that future generations of older people will experience better health and less disability than current cohorts of older people, a number of 'lifestyle' factors may considerably lower the probability of reductions in disease and disability in old age. Two examples of possible threats to healthy ageing include rising levels of obesity and rising levels of alcohol consumption.

An Alcohol and Healthy Ageing Group was established, co-ordinated by Dr Jane Parkinson and chaired by Professor Mary Gilhooly. The members of this group focused on the potential impact of alcohol on healthy ageing specifically for the baby boomers, a large and important cohort born between 1945 and 1965, and the challenge that alcohol might pose to the notion of the future compression of morbidity.

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\* On 1st April 2003 PHIS and the Health Education Board for Scotland (HEBS) merged to become NHS Health Scotland

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# Recommendations

## Key recommendation: Age-based sensible drinking limits

As we age our ability to metabolise alcohol decreases. In the same way that gender differences in the ability to metabolise alcohol led to the introduction of gender-based sensible drinking limits, it is time that it is acknowledged that there should also be age-based sensible drinking limits. If the baby boomers carry their current drinking patterns into old age they are likely to experience higher than anticipated levels of morbidity. Given the size of the baby boomer cohort in relation to the working age population, even a slight increase in alcohol-related health problems could have a major negative impact on the National Health Service (NHS).

## Subsidiary recommendations

### (1) More research on ageing with alcohol

- Funding for cross-sequential longitudinal studies of alcohol consumption should be made available. The baby boomers are currently aged 40-60 (at the end of 2005). Thus, in order to follow the baby boomers into their 60s, such studies need to last for 30 years. Along with amount, frequency, etc, the role of life events (e.g. retirement, bereavement) in patterns of alcohol consumption should be examined. The role of alcohol in accidents, and medication adherence and modification in relation to drinking, should also be included.
- It is acknowledged that cross-sequential designs are expensive and, therefore, we recommend that at least some funding go into cross-sectional studies on the following: (a) attitudes and knowledge of alcohol across the age range, (b) public knowledge of the impact of ageing on the ability to tolerate and metabolise alcohol, and (c) the nature and pattern of alcohol consumption among people age 45-65.
- Better use should be made of established data sources, in particular repeated surveys. National population surveys that examine alcohol consumption should include people over the age of 75 years, as well as provide greater differentiation of age groupings of older people.
- In the rare instance that longitudinal studies of ageing are commissioned in the UK, the inclusion of items on alcohol consumption and problems needs to be advocated.

### (2) More alcohol education aimed at the baby boomers

- Middle-aged and older people need to be made aware of the impact of ageing on alcohol metabolism and the need to reduce consumption levels with age. An increase in awareness could be brought about through pre-retirement programmes.

- Health education focusing on alcohol should also include images of older people.

### **(3) Training of health and social care professionals**

- Primary care and hospital care NHS staff must be trained in taking alcohol histories from all patients, with particular reference to older people.
- Health care professionals should also be trained to explore patterns of alcohol consumption to prevent medication/alcohol interactions.
- Specialist alcohol services should be available to older people.

### **(4) Labelling and packaging – Alcohol unit information**

- All bottles and cans of alcoholic beverage should contain information about units of alcohol.
- Licensed premises should be required to post information regarding units of alcohol in standard measures of wine, beer and spirits.
- Packaging of medications that interact with alcohol need to include more explicit information indicating that older people are more at risk.

### **(5) An increase in the price of beverages containing alcohol**

- The price of beverages containing alcohol should be increased via taxation. There is a large body of evidence from many different countries showing that price affects drinking behaviour. The price of alcohol has declined steadily in relation to incomes and, at the same time, there has been a corresponding increase in consumption in all age groups.

# Executive Summary

## Context of the report

Alcohol is a widely used drug in our society. Within sensible limits it is a pleasurable experience and an integral part of social activity. We know that drinking too much alcohol increases the risk of some illnesses and that very heavy drinking may lead to an early death. Drinking that exceeds recommended levels, but is not recognisably problematic, is more likely to result in increased morbidity as the person ages. For some time recommended sensible drinking levels have reflected gender differences. Recommendations on sensible drinking levels for people of different ages are long overdue.

## Nature of the report

This report examines the drinking patterns of the present “baby boomer” generation (the large population cohort born between 1945 and 1965) and looks at the health implications of higher than recommended drinking in old age. Instead of concentrating on people with alcohol problems due to heavy drinking, it looks at the future health implications of a larger older population that contains a significant proportion of people who drink more than the recommended level of alcohol. If this population carries its current drinking pattern into old age, it will contain a large number of people who age “unhealthily”. This could have grave implications for healthcare resources in future years.

Although the report is based on research evidence, it recognises significant gaps, especially the lack of long-term longitudinal studies of the drinking habits of a given population. Many of the issues are complex and the report is not intended to be an exhaustive examination of every piece of available evidence. Rather it is intended to provoke thought, debate and more research into the use of alcohol by an ageing population.

It is not the report’s intention to suggest that all alcohol is bad, nor that Scotland has a larger problem than other countries. It is also not its intention that the State must control access to alcohol. It takes a broad view of the issues and suggests a range of ways that we can all make our society healthier in older years.

## The evidence base

In searching the relevant literature we concentrated on Scottish data, but used data from elsewhere if no Scottish data was available. We examined four main areas of evidence.

- a) *Consumption patterns.* Surveys show that older people drink lower quantities of alcohol than younger people. It is not clear whether people simply drink less as they get older (an “ageing effect”). It could be that the present generation of older people have always drunk less and carried that level of drinking into old age (a “cohort effect”). It is interesting to note that a major difference appears to be that older people report drinking less alcohol in terms of quantity per occasion.

The best available evidence appears to show that the present generation of older people drink more than their predecessors. Within this sector of the population there is a substantial minority that exceeds current recommended drinking levels. Over recent years, the number of older people who exceed recommended levels appears to be increasing.

- b) *Social factors influencing drinking in old age.* In recent decades, alcohol has become more affordable in relation to disposable income. Drinking, especially in public, has become more acceptable, particularly for women. Socio-economic factors are complex with higher levels of binge drinking reported within lower socio-economic groups but higher regular consumption in higher socio-economic groups. Age-related stressors such as retirement, ill health and bereavement have been reported to provoke increased levels of alcohol consumption in some older people, but are not necessarily predictors of heavier drinking in an ageing population. In particular, the role of retirement is not well understood. While the retired person may have more time to drink, the amount of money available might be less.

The relatively small amount of evidence on attitudes to drinking in old age suggests that older people view alcohol problems as something that happens to younger people and consider alcohol to be medicinal. They are less likely than younger people to have heard of alcohol units and believe that they are old enough to know how to drink safely. Research suggests that society believes that older people have the right to make choices about alcohol and that it may be one of the few pleasures they have left.

- c) *Advantages and disadvantages of alcohol consumption.* Too much alcohol is bad for you. It is particularly likely to damage the liver and brain and increases the risk of cardiovascular disease. Older people have higher blood alcohol levels than younger people after the same amount of alcohol and are much more likely to suffer impaired brain function. Alcohol is a factor in 15-30% of men and 8-15% of women admitted to hospital in urban areas of the UK. It is associated with increased levels of depression and sleep disorders as well as an increase in accidents.

There is debate about the possible benefits of small amounts of alcohol. As well as being a pleasant social experience, it may slightly reduce the risk of cardiovascular disease and possibly dementia. Research in this area is fraught with difficulty and hard to interpret. It is the conclusion of this report that any such benefit is small and occurs at levels of drinking which are much lower than many people realise. This is an important debate and one that has implications for the focus of this report. The problem is the danger of too high a proportion of the ageing population exceeding recommended drinking levels that are probably too high in the first place.

- d) *Alcohol and medicines.* Age-related changes in the body result in slower metabolism of medications and alcohol. Various health problems are associated with advancing age and there is likely to be a greater need for multiple medications. Many of these interact with alcohol. There may be increased side effects or new problems associated with the combination. Because of

these interactions, many older people will need to abstain or significantly alter their alcohol intake. There is evidence that some people alter their medication regime in order to have a drink.

## Looking into the future

The over 65 population of Scotland will increase significantly over the next 25-30 years. At present 10% of this sector of the population exceeds recommended drinking levels. If the 20% of present 45-64 year olds who exceed recommended levels do not reduce their drinking, the number of older people in Scotland whose drinking may be a threat to healthy old age will rise from 80,700 to 223,500 by 2031. This would have a major impact on health resources. Even if this population reduced its drinking so that only 10% exceeded recommended levels, there would still be 111,750 people drinking too much. It would take a concerted campaign to reduce this proportion to 5%, a level that would do much to ensure a healthier older population in future years.

## Recommendations

The key recommendation of this report is the introduction of age-based sensible drinking limits. Other recommendations are more research, more education on alcohol aimed at the baby boomers, training of health and social care professionals in screening and brief interventions, labelling beverages with information on units of alcohol, and an increase in the price of beverages containing alcohol.



# Chapter 1

## Introduction

# Introduction

## Summary

This chapter presents demographic data on the ageing of the population and a brief discussion of the nature of physiological decline with age and compression of morbidity. The structure of the report is outlined, and a note made of the target audience, namely health and social care professionals and policy makers.

- The baby boomers, the large cohort born during the two decades after the Second World War, will soon be turning 60 years of age.
- Although it is often assumed that they will experience better health compared to the current cohort of old people, that morbidity for the baby boomers will be compressed closer to death and, as a consequence, this large cohort of old people will not cause major problems for the health services, there are factors that might mean that compression of morbidity closer to death will not occur.
- Two factors that could be major threats to the hoped for compression of morbidity are relatively high levels of obesity and alcohol consumption.
- Problems inherent in studying alcohol consumption and the quality, quantity, and main sources of research that address the issues raised in this report are outlined.

## Introduction

For several years concern has been raised about the 'demographic time bomb', that is, the future demands on health and welfare services by the cohort born in the two decades following World War II (1945 to 1965). The baby boomers, as this cohort is known, are now approaching sixty. Optimists argue that the better health of the baby boomers, compared to their parents, will mean that the disability and poor health commonly associated with advanced years will be compressed closer to time of death and, as a consequence, the baby boomers will not experience long periods of ill health that will be difficult to finance. Two factors which might reduce the likelihood of this hoped for compression of morbidity are obesity and alcohol consumption. Compared to previous cohorts of older people, the baby boomers are fatter and consume relatively high levels of alcohol. This report sets out to draw attention to important public health questions that need to be asked concerning the role of alcohol in relation to healthy ageing, focusing on the baby boomers. It is acknowledged that alcohol plays a role in the lives of many people but that the extent of this role may need to be reassessed.

### Aim of the report

This exploratory and speculative report aims to examine the potential impact of the current level of alcohol consumption by the baby boomers on their future health. This aim is very different to that of most reports on alcohol, which mainly focus on alcohol 'problems' and older drinkers with alcohol problems. The objective is to explore the hypothesis that the current, and relatively high, levels of alcohol consumption amongst the baby boomers may be carried into old age and that these levels may pose a real threat to their future health.

*The following broad public health questions have guided the collection of information for this report:*

1. What is known about the alcohol consumption patterns of older people compared to middle-aged and younger people?
2. What factors influence and determine alcohol consumption amongst older people?
3. What are the advantages and disadvantages of alcohol consumption for older people?
4. Why is polypharmacy and alcohol a special issue for older people?
5. What is the potential future impact on public health, from what is known about alcohol consumption amongst current middle-aged and older people?

### Target audience

This report is aimed at health and social care professionals, as well as policy makers.

## Structure of the report

By drawing attention to the impact of alcohol consumption in middle age to a healthy old age, this report complements and augments the alcohol plan for Scotland, *'Plan for Action on Alcohol Problems'* (2002),<sup>1</sup> which sets out an agenda for change to reduce alcohol-related harm in Scotland, with particular emphasis on harmful drinking by children and young people and binge drinking. While the authors of this Alcohol and Healthy Ageing report are concerned about harmful drinking amongst older people, the report is more speculative and concerned with the future. Details of research providing answers to some of the speculative questions are noted,<sup>2,3</sup> but in many instances the evidence-base is weak. However, one of the main objectives of this report is to highlight areas where more research is needed and where questions may be raised for which no answers are currently available.

The report begins with a brief examination of the concepts of healthy ageing and compression of morbidity. It then considers methodological limitations, the prevalence of alcohol consumption and factors influencing drinking before addressing the impact of alcohol consumption on physical and mental health and the issue of consuming alcohol whilst on medication. The final section discusses possible future alcohol consumption scenarios.

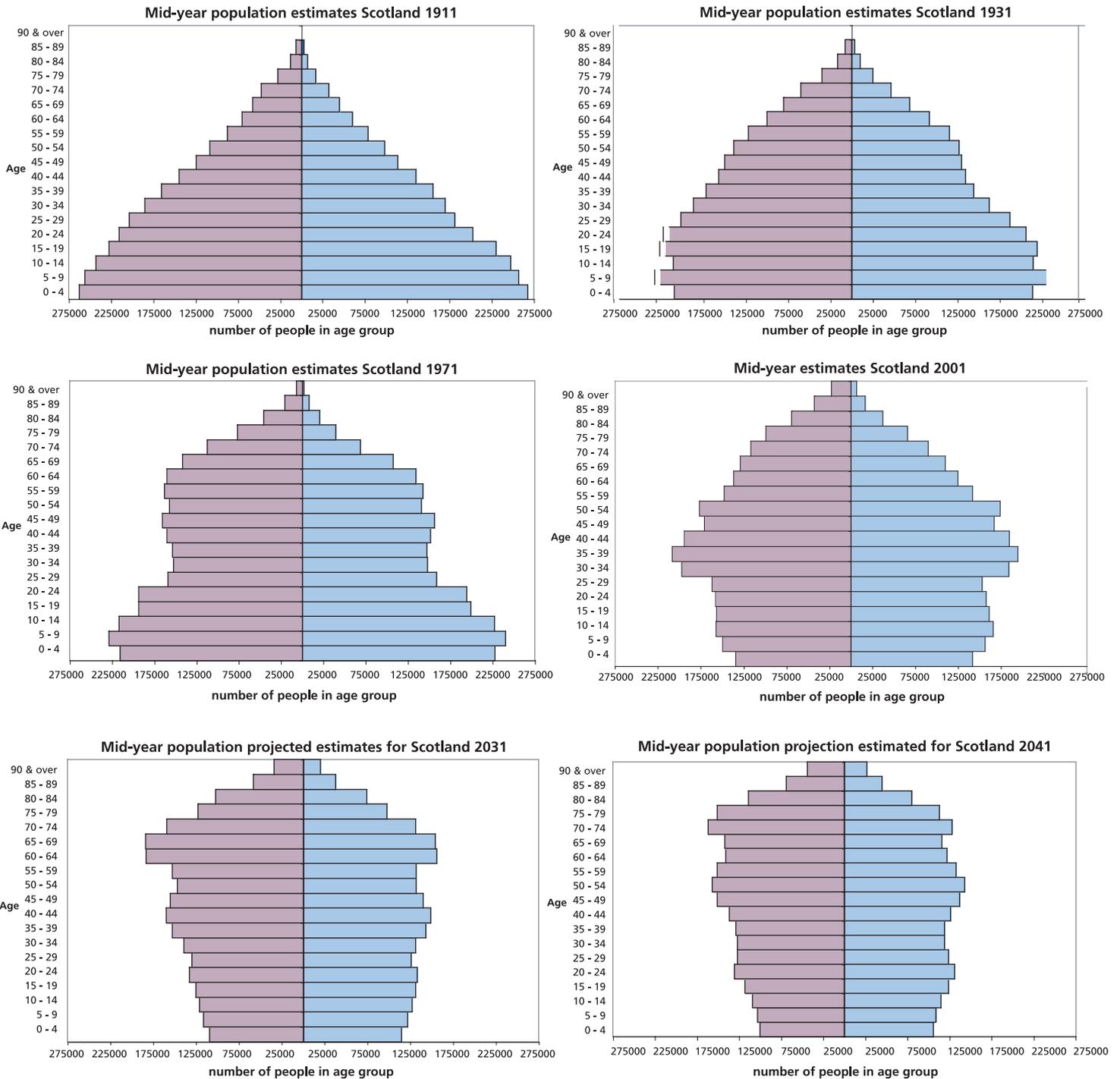
## Baby boomers as an important cohort

During the late 19th and 20th century much of the industrialised world experienced a process called "demographic transition" which gave rise to the relatively older population seen in the United Kingdom (UK) today (Figure 1.1).<sup>4</sup> A particularly important feature of the future demographic changes in the developed world (countries such as the UK) is the ageing of the elderly population. Those aged 80 years and older are the fastest growing part of the elderly population. The increase in numbers of this segment of the population, combined with their very diverse health and social needs, will present a challenge to service providers. Most of them are women (reflecting the average six years longer life expectancy at birth for women) and many live alone.

Furthermore, the ageing of society has implications for the old-age dependency ratio – the ratio of individuals aged 65 and over in the population to the size of the economically active segment of the population. The number of people aged 65 and over per one hundred people aged 15-64 in the UK will change from 17.9% in 1960 to a predicted 29.7% in 2025.<sup>5</sup> It is widely assumed that this shift in the balance of old and working age people in the population will damage the economy and create serious problems for health and social care services. Not only will there be an insufficient number of tax payers to pay for the costs of the NHS, but there will not be sufficient numbers of young people to work as health and social care professionals.<sup>6</sup>

The cohort known as the baby boomers is a very large post-World War II cohort. The demographic profiles of this cohort differs amongst countries of the Western world.<sup>7</sup> For this report the baby boomers in Scotland refers to the cohort born between 1945 and 1965, currently aged 40 to 60 (end of 2005).<sup>8</sup> This large cohort, which is moving into old age, will create a large and significant increase in the older population, not only in absolute numbers, but more importantly, in relation to the numbers of people of working age. This has many implications for society and services. Further, socio-cultural changes since World War II mean that there

are patterns of behaviour within this cohort, especially for women, which were not present in previous cohorts and which will impact negatively on their future health. Alcohol consumption is one such behaviour. These differences in behaviour add to the implications for demand on services in the future by this large cohort.



**Figure 1.1 Demographic transition.** Mid-year estimates of the Scottish population by age and sex for 1911, 1931, 1971, and 2001, and projected estimates for 2031 and 2041. This demonstrates the increase in size of the older sections of the population and the appearance and ageing of the baby boomers.<sup>11-13</sup>

## Why is alcohol consumption of importance to healthy ageing?

It has been argued that both the current guidelines for sensible drinking and methods for screening for alcohol problems are designed for younger people and do not take into account changes that the ageing process brings.<sup>9;10</sup> Older people may be less tolerant of alcohol as a result of a reduction in the body water to fat ratio, a decreased hepatic blood flow, inefficiency of liver enzymes, and reduced renal clearance. For example, after a standard alcohol load a man in his 60s may have a peak blood alcohol level 20% higher than a man in his 30s. Revisions of the recommended drinking limits for older people may therefore be needed. Education about the hazards of combining both prescription and over-the-counter (OTC) medications with alcohol may also be required.

The focus of this report is illustrated in Figure 1.2. The social and cultural factors in blue influence the drinking patterns of the baby boomer generation, the yellow factors illustrate changes that can affect either alcohol intake or the response of the individual to alcohol as they age and the red outcomes the possible consequences of drinking as the population ages.

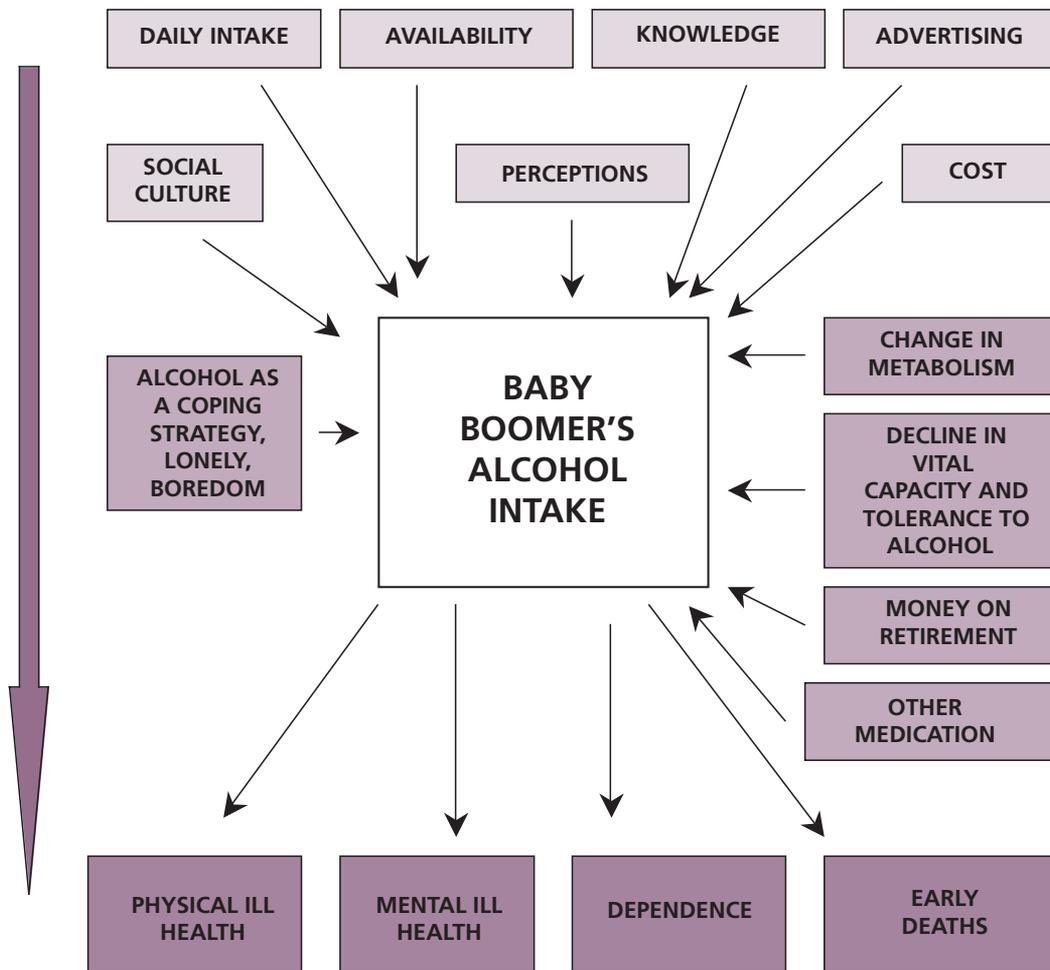


Figure 1.2. Baby boomers and potential alcohol-related problems: causes and consequences

## Healthy ageing and the 'compression of morbidity'

As we age the risk of disease and death increases. The reason for this is that ageing leads to a progressive, generalised impairment of function resulting in a loss of adaptive response. Two factors influence this risk: the rate of physiological decline and the risk of external assaults from the environment.<sup>14</sup>

### Physiological decline with age

A number of physiological functions decline with age.<sup>15</sup> Examples include the efficiency of lung function, circulation, muscles and nerves. There would seem to be a genetic element to this process of decline but it is also influenced by factors like environment, lifestyle and nutrition. Under certain influences this decline can accelerate, but attention to behaviour and environment can significantly slow the decline. For example, those who do not use their large muscle groups will lose strength. Sometimes the level of decline is such that we define it as pathological. For example, an individual who smokes and eats a high fat diet may experience changes that reduce coronary blood flow and lead to ischaemic heart disease.

The key point is that there is a slow decline in a wide range of physiological functions with age, but that the rate of decline is amenable to a large variety of environmental and behavioural interventions. One of the keys to healthy ageing is the manipulation of behaviour and environment to slow rate of physiological decline as much as possible.

### **External assaults**

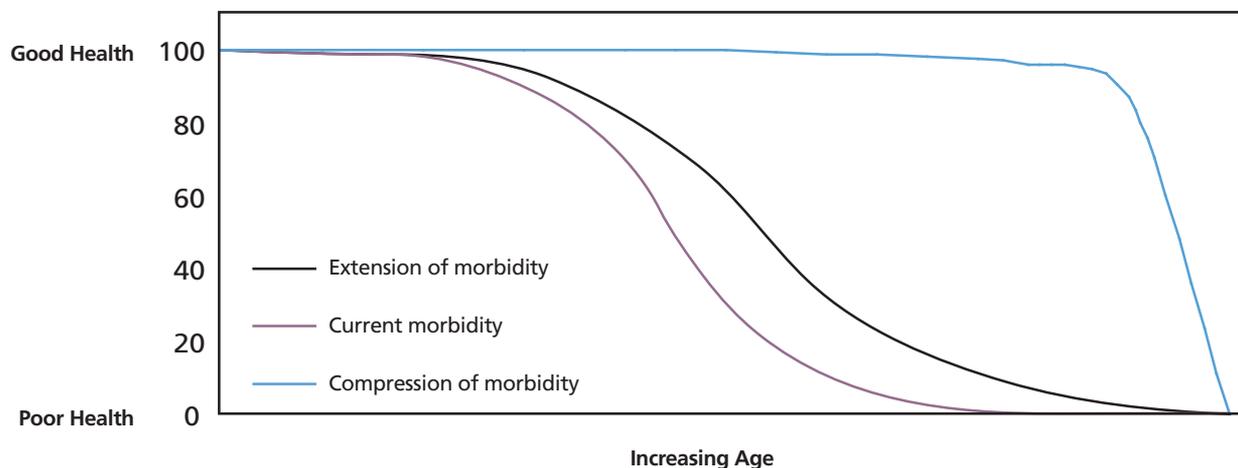
External assaults include accidents, trauma, infections and any factor that threatens our physiological function sufficiently to cause disease or death. Obviously, the environment in which we live influences the frequency and scale of external assaults. Also, our ability to withstand infection or trauma depends on the reserve capacity of our physiological systems. For example, pneumonia in a young healthy person with lungs that have a large reserve capacity is much less likely to be fatal than the same infection in an older person who has a life long history of smoking.

### **Compression versus extension of morbidity**

The conclusion to be drawn from this analysis is that a secret of healthy ageing is to ensure that physiological decline is kept to a minimum and occurs in parallel across the major body systems while external assaults like trauma and infection are kept to a minimum.

The term “compression of morbidity”<sup>16;17</sup> is used to describe an optimistic scenario where increasing proportions of the population will achieve these twin aims and live a long, healthy life in which death will be preceded by a very short period of ill health (morbidity), Figure 1.3. This scenario is based on a few key assumptions. Firstly, that the human lifespan is not endlessly elastic and, while increasingly large proportions of the population will achieve old age, the lifespan will not be pushed much higher. Also, if increasingly large proportions of the population can have slow and parallel physiological decline (as described above) and a minimisation of external assaults (like infection or trauma), we really will achieve healthy ageing for the vast majority.

An alternative theory is that we will see an extension to the period of ill health and poor functioning at the end of life, i.e. “extension of morbidity”, Figure 1.3.<sup>18;19</sup> Two mechanisms will drive this. First, the age of onset of poor function or disease will remain unchanged as influences like smoking and diet give rise to, for example, coronary heart disease or obstructive airways disease during mid life. At the same time, medical and environmental interventions will allow people to survive to an older age. The consequence will be increased longevity, but with an extended period of morbidity or ill health during older age.



**Figure 1.3. Morbidity scenarios.** *Current morbidity scenario* – physiological decline occurs with age leading to poor function and disease and years of life lived with morbidity prior to death; *Extension of morbidity scenario* – life expectancy is increased but physiological decline still occurs with age leading to poor function and disease and to an overall increase in the number of years lived with morbidity before death; *Compression of morbidity scenario* – life expectancy is increased but physiological decline with age is slower (due to for example better lifestyle from birth) occurring at or just prior to death thus leading to increased life expectancy with morbidity occurring just prior to death.

## The Ageing Baby Boomers

As the baby boomers age, the numbers of people aged 80 and over will increase in Scotland. It is therefore important that we attend to the issue of physiological decline while it is still amenable to influence in middle age.<sup>14</sup> Clearly the agenda for action is large and many lifestyle habits affect physiological decline.<sup>20</sup> The importance of understanding compression and extension of morbidity is to recognise that the “possible future” for baby boomers in Scotland will be determined by decisions that individuals, communities and policy makers make today.

## Data Sources, Quality and Quantity

There are very real methodological difficulties in studying alcohol consumption and the literature reviewed for this report varies in terms of both quantity and quality. Overall there has been relatively little research on alcohol consumption amongst older people, particularly in Scotland. We have, therefore, also drawn on studies conducted in other countries. However, it is recognized that complex cultural differences mean that both the role of alcohol and consumption patterns in other cultures can be very different from those in Scotland. Consequently caution is needed in generalising this information to Scotland.<sup>9</sup>

### Sources

Wherever possible we have used Scottish data. The 1995 Scottish Health Survey (SHS) only sampled people aged 16 to 64, while both the 1998 SHS and the Health Education Population Survey only included people up to the age of 74.<sup>2;21;22</sup> The Scottish Household Survey does not contain questions on alcohol.<sup>23</sup> In contrast its UK counterpart, the General Household Survey (GHS), has included alcohol questions every second year since 1984 and annually since 2000 and samples people over the age of 65, although this does not include people in institutions. The total sample size, however, in Scotland is less than two thousand, obtaining sub-national trend data therefore is difficult.<sup>3</sup> Older people are also treated as a homogenous group of those aged 65 and over, providing little information about subtle differences in alcohol consumption patterns which may exist.

### Accuracy and reliability

The accuracy and reliability of self-report measures are often questioned as they can result in under-reporting. There may be difficulties in recall if the individual has been intoxicated, or has memory problems (the likelihood of which increases with age)<sup>24</sup> and issues of social desirability can also influence the accuracy of self-reporting. Additionally, the lack of standardised definitions, for example of older people, problem drinking, and screening tools are problematic when assessing patterns of consumption and potential problems. There is a lack of clarity within the literature about 'gold standard' tools for use with older people in terms of validity and reliability; a number of inconsistent results are reported. Current measures of alcohol consumption and problems are also generally tested on younger populations and different sampling techniques make drawing comparisons between studies difficult.

In addition, obtaining accurate data on consumption patterns of older people is difficult due to the reliance on cross-sectional data in the UK. In Scotland, this is particularly problematic. For older people these data often have three major drawbacks: (1) representation specific to older people is poor; (2) it does not extend into older age and when it does older people are treated as a homogeneous group failing to differentiate between, for example, those over 70 from those over 80, and (3) it is impossible to distinguish between cohort and ageing effects.

## Ageing and cohort effects

The current generation of older people drink less than younger people (Chapter 2). It is not known whether this is the result of an *ageing* or *cohort* effect, or perhaps a combination of both.

*Cohort* effects are those that impact on one age group or cohort in the population. A cohort is usually defined in terms of year of birth, or a range of years. Individuals from a particular cohort (sometimes called a generation) share a common set of experiences that separate them from others preceding or following them in historical time.<sup>25</sup> Each cohort grows up with different experiences, attitudes, skills and values. The baby boomer cohort grew up in an era of post-war austerity which changed to an era of prosperity at they entered the labour market. In addition, the contraceptive pill heralded new sexual freedoms, with illicit drug and alcohol consumption became more widespread and acceptable, especially for women.

*Ageing* effects occur in individuals as they grow older, regardless of historical time. Menopause is an obvious example of an ageing effect. We can only talk about ageing effects in alcohol consumption where we have longitudinal data showing that individuals reduce their consumption of alcohol as they age.

Because of the reliance in the UK on cross-sectional data (people of different ages being sampled at one point in time) it is very difficult to separate ageing and cohort effects when considering age differences in alcohol consumption. In other words, in a cross-sectional study we cannot say if an age 'difference' is due to an age 'change'. Nevertheless, this is a very important issue. If it can be shown that there is evidence of a cohort effect, this is likely to mean a change in the drinking patterns of future generations of older people with a consequential impact on their health in later life.

## Conclusion

The large cohort known as the baby boomers are about to enter old age. There has been much speculation about how this cohort will behave in old age, as well as how healthy the baby boomers are likely to be as old people. This chapter introduces another important area of speculation, namely the role of alcohol consumption as a factor in healthy and successful ageing. Unlike most reports on alcohol and older adults, this report does not focus on alcohol problems, but instead takes a public health approach. The aim of the report is to explore the hypothesis that the relatively high levels of alcohol consumption of the baby boomers may be carried into old age and that these levels may pose a real threat to the health of the baby boomers in old age.



# Chapter 2

## Alcohol Consumption and Ageing

# Alcohol Consumption and Ageing

## Summary

When comparisons are made at one point in time of people of different ages, it appears that mean levels of alcohol consumption, proportions exceeding weekly limits, and problems associated with alcohol consumption decrease with age. Unfortunately, most of the data available are cross-sectional and data of this nature do not allow the separation of ageing and cohort effects. In other words, successive cohorts are drinking more and the percentage in successive cohorts exceeding recommended weekly limits is increasing. There are two points to keep in mind, therefore: (1) there is evidence that successive cohorts are consuming more alcohol when younger and (2) successive cohorts are taking these higher levels of drinking into old age. The impact of cohorts consuming more when younger and drinking more when older is unlikely to be beneficial. Thus, it can be concluded with some certainty that the higher levels of alcohol consumption of the baby boomers could well be a threat to compression of morbidity and healthy ageing.

- Older people report drinking smaller quantities than middle aged people, who report drinking less than younger people, but it is unknown if this is an ageing or cohort effect.
- Patterns of drinking change with age. Compared with younger people, older people are more likely to drink every day and less likely to binge drink.
- Exceeding recommended limits appears to decline with age, but a substantial minority of people aged 65 and over drink in excess of recommended weekly limits.
- However, consumption of alcohol amongst cohorts of older people has been rising over time, suggesting that people may take patterns of drinking from a younger age into old age.

# Introduction

To examine the potential threat that alcohol presents to healthy ageing this chapter considers questions relating to the amount and patterns of alcohol consumption across all age groups and over time, the extent to which recommended sensible drinking levels are exceeded, and whether successive generations of older adults are consuming more alcohol. The aim of the chapter is to determine whether or not the baby boomers will drink less when they are old than they currently do, or if they will carry their current levels and frequency of alcohol consumption past retirement and into old age.

## Q1. Does the amount of alcohol consumed change as people grow older?

A1. The amount of alcohol consumed appears to decrease as people get older. Older people report drinking smaller quantities than middle-aged people, who report drinking less than younger people. It is unknown if this is an ageing or cohort effect. The current generation of older people may have consumed less when young and have carried that level of drinking into old age.

### Evidence

In Scotland, mean weekly consumption for men aged 65 to 74 in 1998 was 13.5 units, compared with 23.4 units for those aged 16 to 24. For women this was 2.8 units per week compared with 10 units in the younger group, Figure 2.1.<sup>2</sup>

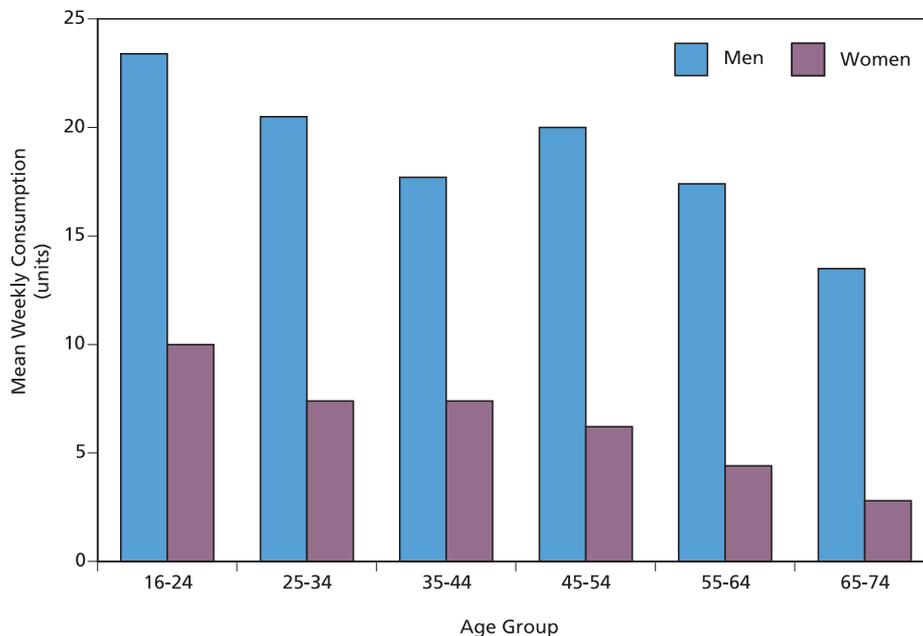


Figure 2.1. Mean weekly alcohol consumption (units) across age groups in Scotland.

Source SHS 1998 <sup>2</sup>

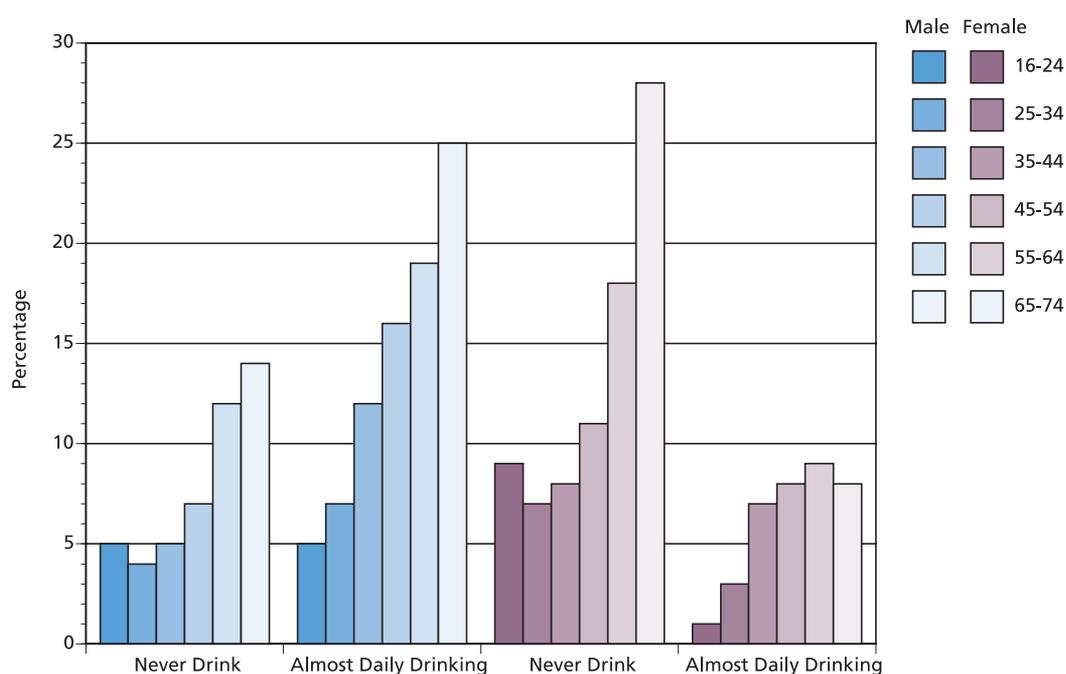
## Q2. Does the pattern of drinking alter with age?

A2. Yes. Older people are more likely to report drinking every day, despite the fact that they are likely to drink less per week in terms of quantity of alcohol as well as to abstain. Older people tend to report more routine-based consumption patterns, both in terms of how often and how much they drink, and are less likely to binge drink.\*

### Evidence

The percentage of people drinking daily in Scotland increases with age among both men and women, although this is more pronounced in men.<sup>2</sup> Given that older people are more likely to abstain, frequency of drinking is thus more 'polarised' among older people at the extreme ends of the distribution, with a large group never drinking and another drinking almost daily (Figure 2.2).

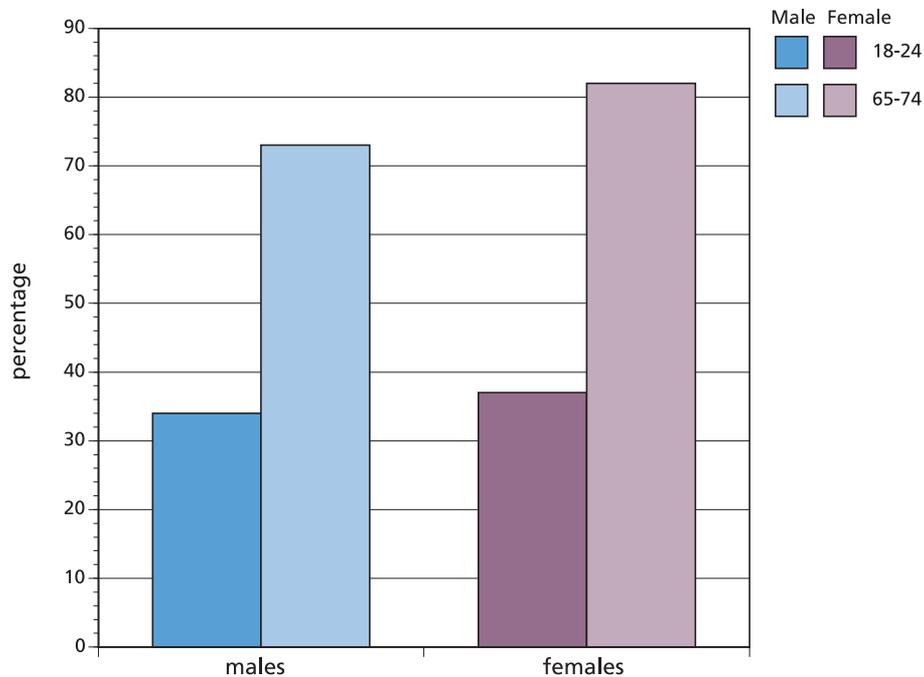
In addition to the frequency of consumption, stability of drinking patterns in terms of quantity drunk on a drinking day is likely to increase with age (Figure 2.3).



**Figure 2.2. Proportion of people in Scotland who never drink or who drink almost daily, 1998.**

Source: SHS 1998<sup>2</sup>

\* Drinking an excessive amount on any one occasion. There is no commonly-accepted definition, but the SHS uses the criterion of drinking more than twice the recommended daily benchmark on a person's heaviest drinking day (more than 8 units for men and 6 units for women).<sup>2</sup>



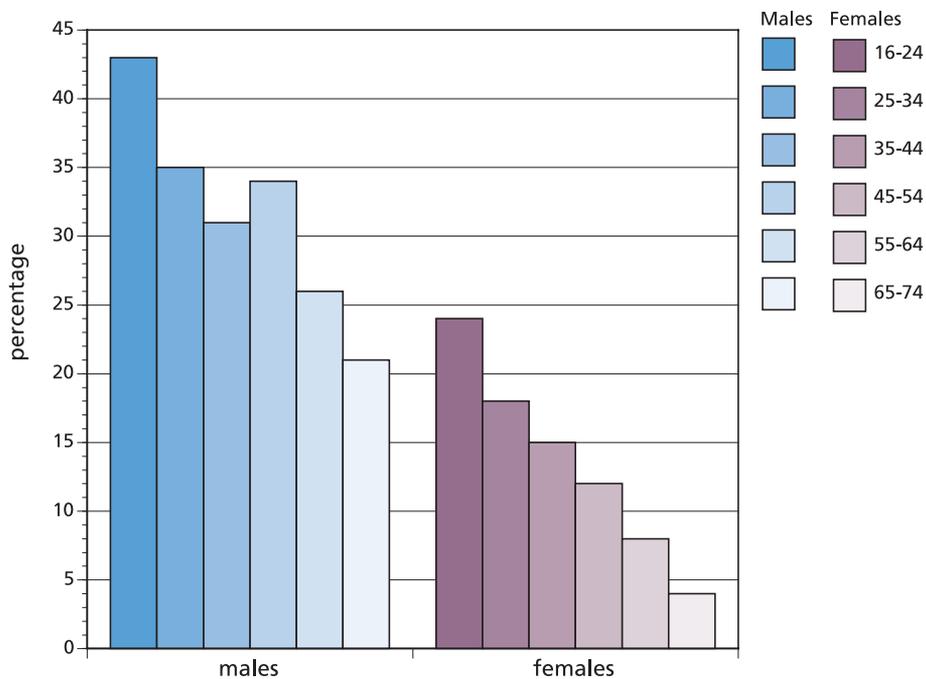
**Figure 2.3. Percentage of people in Scotland aged 18-24 and 65-74 who report drinking the same amount on each drinking day, 1998.** Source: SHS 1998<sup>2</sup>

**Q3. Does the likelihood of exceeding recommended daily or weekly limits decline with age?**

A3. Yes, older age cohorts are less likely to report exceeding recommended limits. However, although the proportion of people exceeding recommended weekly limits appears to decline with age, a substantial minority of people aged 65 to 74 still report drinking more than these limits.

**Evidence**

Younger people in Scotland aged 16 to 24 are most likely to exceed weekly limits, but 21% of men and 4% of women aged 65 to 74 also exceed these limits (Figure 2.4). Similarly, the proportion of people reporting binge drinking on their heaviest drinking day in the last week also declines with age, but a sizeable number of men aged 65 to 74 still binge.<sup>2</sup>



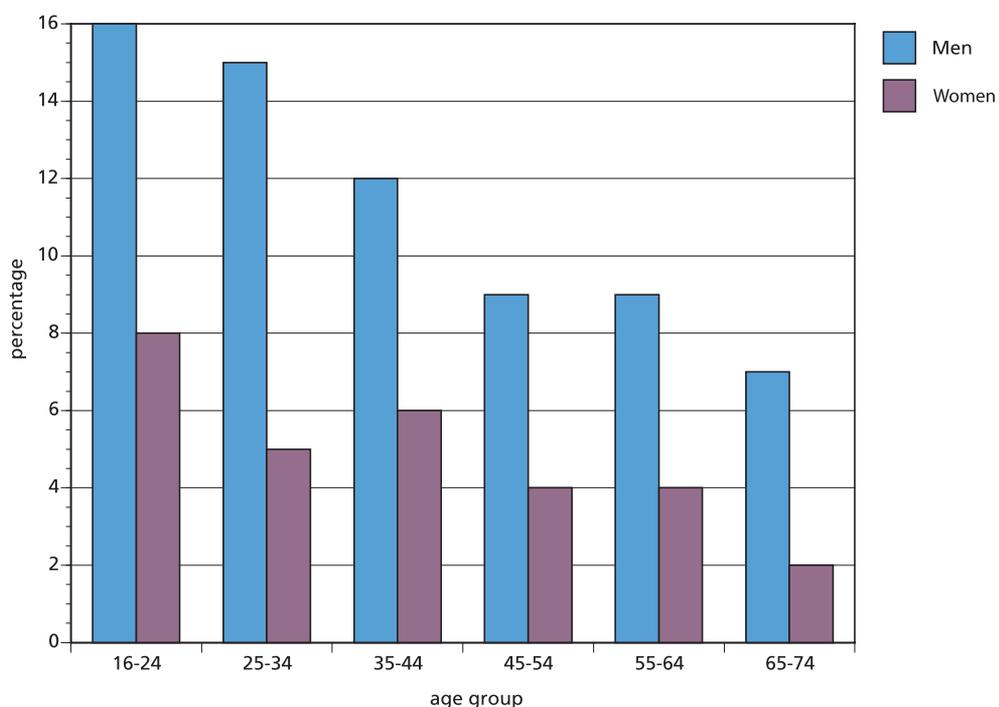
**Figure 2.4. Percentage of males and females exceeding weekly limits in Scotland** (21 and 14 units per week, respectively). Source SHS 1998<sup>2</sup>

**Q4. Does the proportion of people with alcohol ‘problems’ decline with age?**

A4. Yes, the proportion of people with alcohol problems declines by age cohort.

**Evidence**

Although the proportion of people with alcohol problems, as assessed in the 1998 SHS, declines with age, 7% of Scottish men and 2% of Scottish women aged 65 to 74 scored positively on an alcohol problems screening tool in 1998 (Figure 2.5).<sup>2</sup> It is not possible to tell if this represents an increase over time because the 1995 SHS did not include people over 65.



**Figure 2.5. Percentage of adults in Scotland considered to be problem drinkers in 1998.**

Source SHS 1998<sup>2</sup>

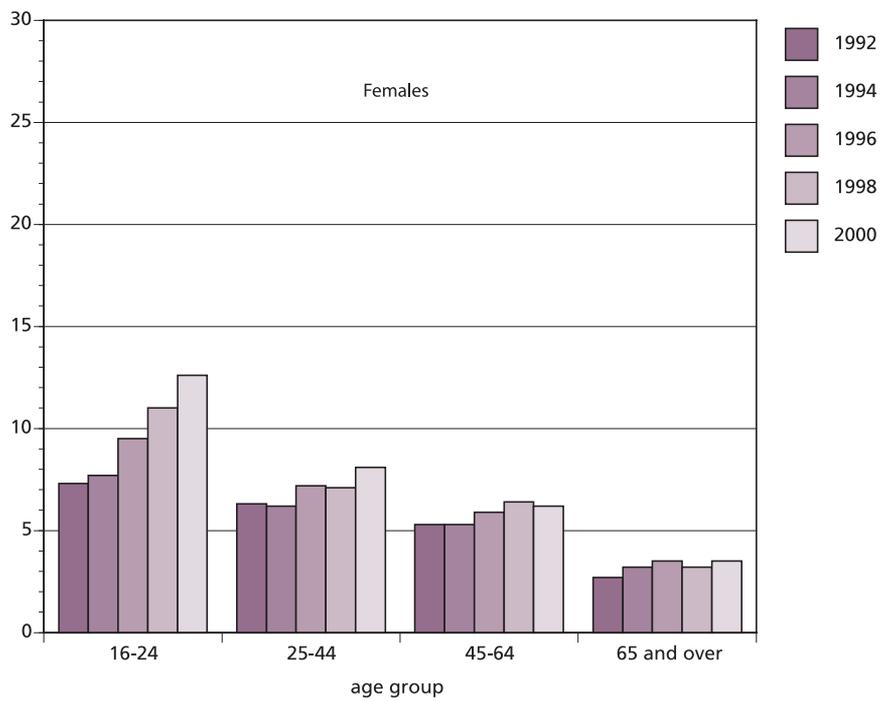
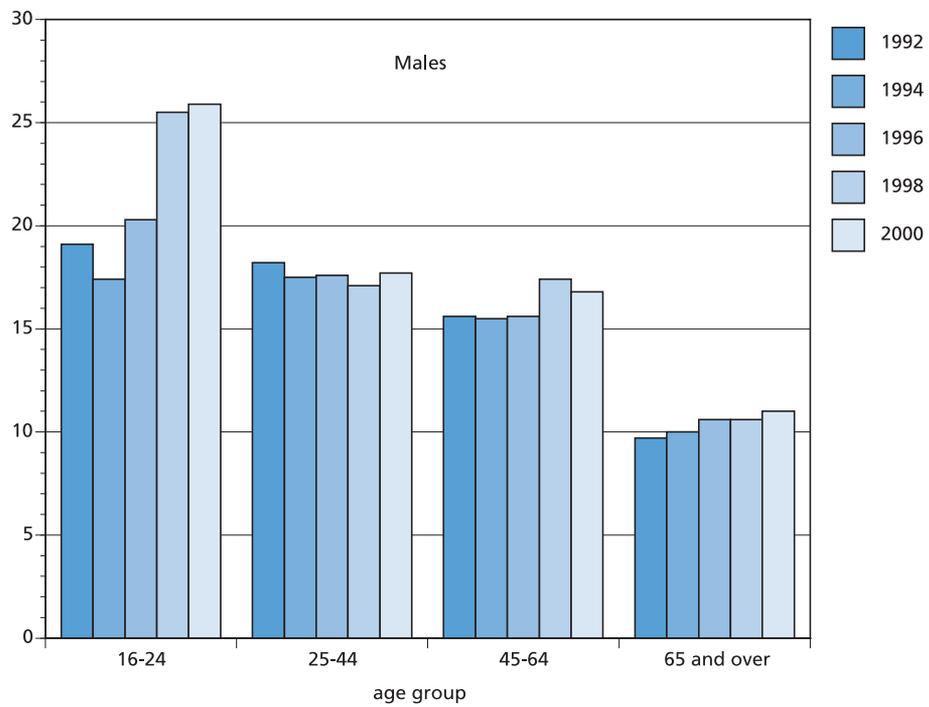
#### **Q5. Has alcohol consumption amongst older people increased over time?**

A5. Yes. Mean levels of alcohol consumption by older people, plus the numbers of older people exceeding the recommended weekly limits, have increased over the past twenty years.

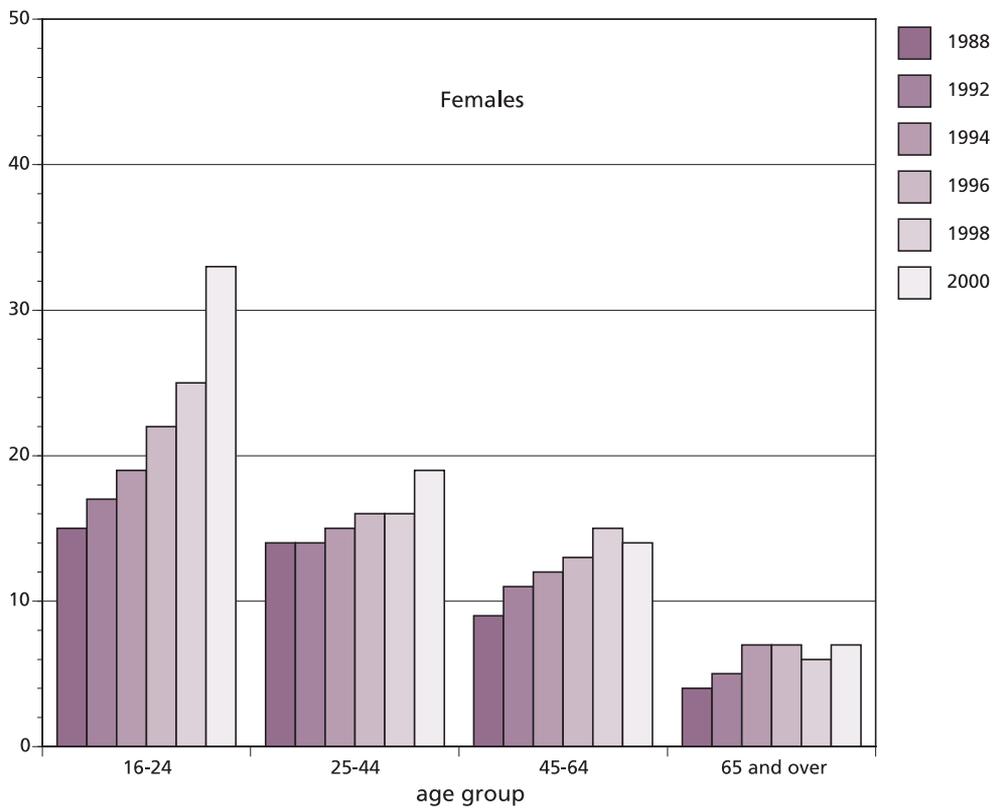
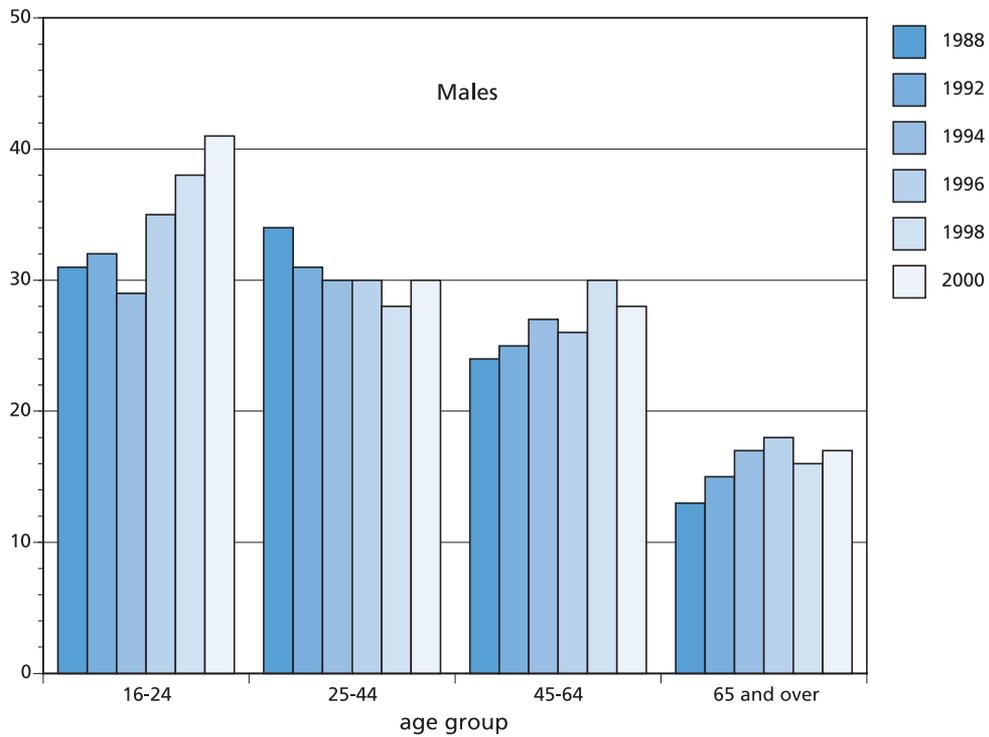
#### **Evidence**

Between 1992 and 2000, across all age groups in the UK, except for males aged 25 to 44, mean weekly consumption increased (Figure 2.6).<sup>3</sup> Additionally, between 1988 and 2000 the number of people in the UK in all age groups, except for males aged 25 to 44, exceeding the recommended weekly limits has been increasing (Figure 2.7).\*

\* It is not possible, however, to investigate similar trends specifically in Scotland as there are no comparable data available between these time periods.



**Figure 2.6. Mean weekly alcohol consumption (units) in UK by sex and age, 1992-2000.**  
 Source GHS 2000<sup>3</sup>



**Figure 2.7 Percentage exceeding recommended weekly limits in UK by sex and age: 1988-2000.**  
 Source: GHS 2000<sup>3</sup>

## Q6. Is the lower number of older people exceeding weekly recommended limits an ageing or a cohort effect?

A6. Although a definitive answer to this question cannot be provided by the data currently available, projecting the trend of increased numbers of older people exceeding recommended levels suggests that at least some of the age differences shown in this chapter can be attributed to cohort effects.

### Evidence

Table 1.1 suggests that the current trend would be consistent with the cohort theory. If this trend continues until 2012, the people in the present 45-64 cohort will be over 65 and will have carried their drinking patterns forward.

Age	1988		2000		2012	
	male	female	male	female	male	female
25-44	32	13	29	17		
45-64	22	9	28	13		
65+	12	3	17	6	22	9

Table 1. Percentage exceeding recommended weekly drinking limits projected to 2012

## Conclusion

Cohort studies indicate that older people report drinking less than younger people. It is not known if this is a cohort or an ageing effect. However, there is evidence that successive cohorts of old people are drinking more. There is growing evidence that alcohol consumption during the developmental years is particularly damaging. The baby boomers as a cohort probably started drinking at an early age compared to the current cohort of older people. Thus, it can be suggested with some confidence that the baby boomers are likely to drink more in old age than the current cohort of older people. Having started at an earlier age, the baby boomers will have consumed more over their life time. Having started to consume alcohol relatively early they will, therefore, have put their health in old age at even greater risk.

# Chapter 3

## Factors Influencing Drinking in Old Age

# Factors Influencing Drinking in Old Age

## Summary

A number of economic, cultural and social-psychological factors, plus attitudes and knowledge about alcohol that might impact on drinking in old age are reviewed in this chapter. Alcohol has become more available and acceptable and also more affordable in relation to disposable income. Retirement may reduce income but may also bring increased leisure time in which to drink and fewer social responsibilities to limit consumption. It has also been suggested that the stresses associated with ageing might be causally linked to an increase in drinking in old age. Gender, social class, life events, and changing norms for the context of alcohol consumption need to be taken into consideration when speculating about the impact of alcohol on current cohorts when they are older.

- Women in particular have been affected by the changing social context of drinking and by changing attitudes to the acceptability of drinking in public.
- Older people are more likely to drink alone.
- People in lower socio-economic groups appear to be more likely to exceed daily limits on their heaviest drinking day but those in higher groups may consume more on a weekly basis.
- People in deprived areas have higher rates of acute hospital and psychiatric admissions with alcohol-related problems.
- Stressful age-related life events may be implicated in relapse for those with established alcohol problems.
- Older people with alcohol problems may have had problems for some time but there is a small group of late onset drinkers.
- Older people, like younger people, see alcohol as an enjoyable social activity, view its effects as positive, but are less likely to have heard of alcohol units.

## Introduction

This chapter examines a number of factors that might influence drinking in old age. Along with the usual socio-demographic factors that need to be taken into account (e.g., age, gender, social class), factors that are peculiar to old age are considered. Retirement, for example, has the potential of both increasing and decreasing the consumption of alcohol. As we age we also experience a number of negative life events that might influence drinking.

### **Q1. To what extent has the changing social context of alcohol consumption influenced drinking by older people?**

A1. A number of important socio-cultural changes have occurred in recent decades that have resulted in increased availability and acceptability of alcohol. These include changes in attitudes, licensing laws, increased advertising, and the changing nature of entertainment and social activities. Alcohol has also become more affordable.

#### **Evidence**

An exploratory pilot study in the West of Scotland using semi-structured interviews examined the meaning and role of alcohol in the lives of people aged 50 to 83 and the factors that influence its use. Qualitative analyses of the data emphasised the complex nature of attitudes and beliefs about alcohol and the importance of the moral context. Participants identified key socio-cultural changes that have led to both increased availability and social acceptability of alcohol, particularly for women.<sup>26-29</sup> These included important changes in the licensing laws, expansion of female-friendly pubs, increase of females in paid employment, increased alcohol marketing, and explosion in foreign travel. Alcohol has also become more affordable in relation to disposable income.<sup>30</sup>

### **Q2. To what extent has the changing context of alcohol consumption differentially affected men and women across the age span?**

A2. Women in particular have been affected by the changing social context of drinking and by changing attitudes to the acceptability of drinking in public. Older people are more likely to drink alone or with one other person, whereas younger people are more likely to drink in larger groups.

#### **Evidence**

The proportion of people who report drinking at home increases with age; in the 2000 Omnibus survey 62% of men and 70% of women aged 65 and over compared with 22% of men and 22% women aged 16 to 24 reported drinking at home on their heaviest drinking day.<sup>31</sup> In contrast, the proportion of people drinking in pubs, bars and clubs declines with age; approximately a fifth of women and a third of men aged 65 and over, compared with four fifths of the 16 to 24 age group. Older drinkers also tend to drink with spouses and partners rather than with friends, which is more common amongst younger people.<sup>31</sup> In the 2004 Omnibus Survey 25% of men and 6% of women over the age of 65 reported buying alcohol in a licensed bar, compared with 51% of men and 40% of women in the age 16-24 year age group.<sup>32</sup>

### Q3. Do stressful life events in later life influence alcohol consumption?

A3. The relationships between life events, age and alcohol consumption are unclear. Some stressors such as ill health or entering institutional care may be associated with reduced consumption, while others, such as loss of a spouse or friends or retirement, may bring initial increases followed by a reduction. Those who are already heavy drinkers appear more likely to deal with loss by drinking more and some infrequent or moderate drinkers may start to drink heavily and develop alcohol problems. The so-called 'late onset' problem drinkers make up an estimated 30-50% of older people with alcohol problems.

#### Evidence

Evidence on the influence of stressful events in later life comes from comparative studies within clinical settings, community population surveys and longitudinal studies.<sup>33</sup> Some clinical studies support the notion that age-related stressors generate drinking problems. When groups of older drinkers with alcohol problems have been examined those with a later onset of problems are more likely to attribute their drinking to stressful life events.<sup>34;35</sup> However, this may be a socially desirable rationalisation on the part of drinkers. Indeed in studies that have utilised better methods of control, such as matching, these differences disappear.<sup>36-39</sup> Where alcohol problems exist in later life stressful events do seem to consistently exacerbate these.<sup>40;41</sup>

The best designed survey to date to address these issues directly is the US Erie County Elderly Drinking Survey.<sup>42</sup> This telephone survey over-sampled heavy drinkers\* amongst 2,325 respondents aged 60 years and over. Generally, more stress was associated with less drinking and no one stressor accounted for any more than 2% of the variance in alcohol consumption. The best indicators of current consumption in the sample were positive correlations with drinking at age 40 and active lifestyle.

When late-onset drinkers are compared with drinkers not having alcohol problems, higher alcohol consumption, poorer functioning, higher reporting of negative life events and chronic stressors, fewer social resources, and greater use of avoidance coping have been reported.<sup>43</sup> However, when compared with early-onset drinkers, those with late-onset problems have lower alcohol consumption, less drinking problems, better functioning, and more benign life contexts than early onset drinkers.

Perreira and Sloan used data from four waves of the Health and Retirement Study to examine changes in alcohol consumption co-occurring and following stress associated with major health, family and employment events over a six-year period.<sup>44</sup> Their sample consisted of 7,731 (3,907 male) individuals between the ages of 51 and 61 years. Most (68%) did not change their drinking at all over the six years. The onset of a chronic medical condition or hospitalisation was associated with decreased drinking. Retirement was associated with increased drinking. Confusingly, getting married or divorced were associated with both increased and decreases in drinking. Previous problem drinking influenced the

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\* Heavy drinking was defined as a mean daily intake of more than 1.0 oz of ethanol

association between some of the life events (e.g. divorce and retirement) and drinking. Gender modified the association between losing a spouse and changes in drinking. Perreira and Sloan concluded that, controlling for problem drinking history, social support and coping skills, changes in drinking behaviour are related to some life events.

Most reviews of the literature suggest that there is little evidence of an association between chronic or acute life stresses and amount of drinking in samples of elderly people.<sup>45</sup> There are, however, studies suggesting that moderate drinking might buffer the negative effects of minor life stresses on depression.<sup>46</sup> Research by Welte and Mirand has also suggested that attention needs to be paid to the interaction of active lifestyle, drinking and stress. Their research has shown that active lifestyle is associated with more drinking, but has protective effects against negative consequences.<sup>47</sup>

#### Q4. Do socio-economic factors influence alcohol consumption by older people?

A4. Complicated relationships between socio-economic group, gender and age make it difficult to give a definitive answer.

##### Evidence

The 1998 SHS reported that for all men aged 16 to 74 taken as a whole, average weekly alcohol consumption and proportion of men exceeding weekly limits was similar across all social classes although slightly higher in social class V and lower in social class IIINM, Table 2. In contrast, differences existed in daily alcohol intake with men in manual classes (IIIM, IV and V) being more likely to exceed daily limits and binge on the heaviest drinking day during the week prior to the survey.<sup>2</sup>

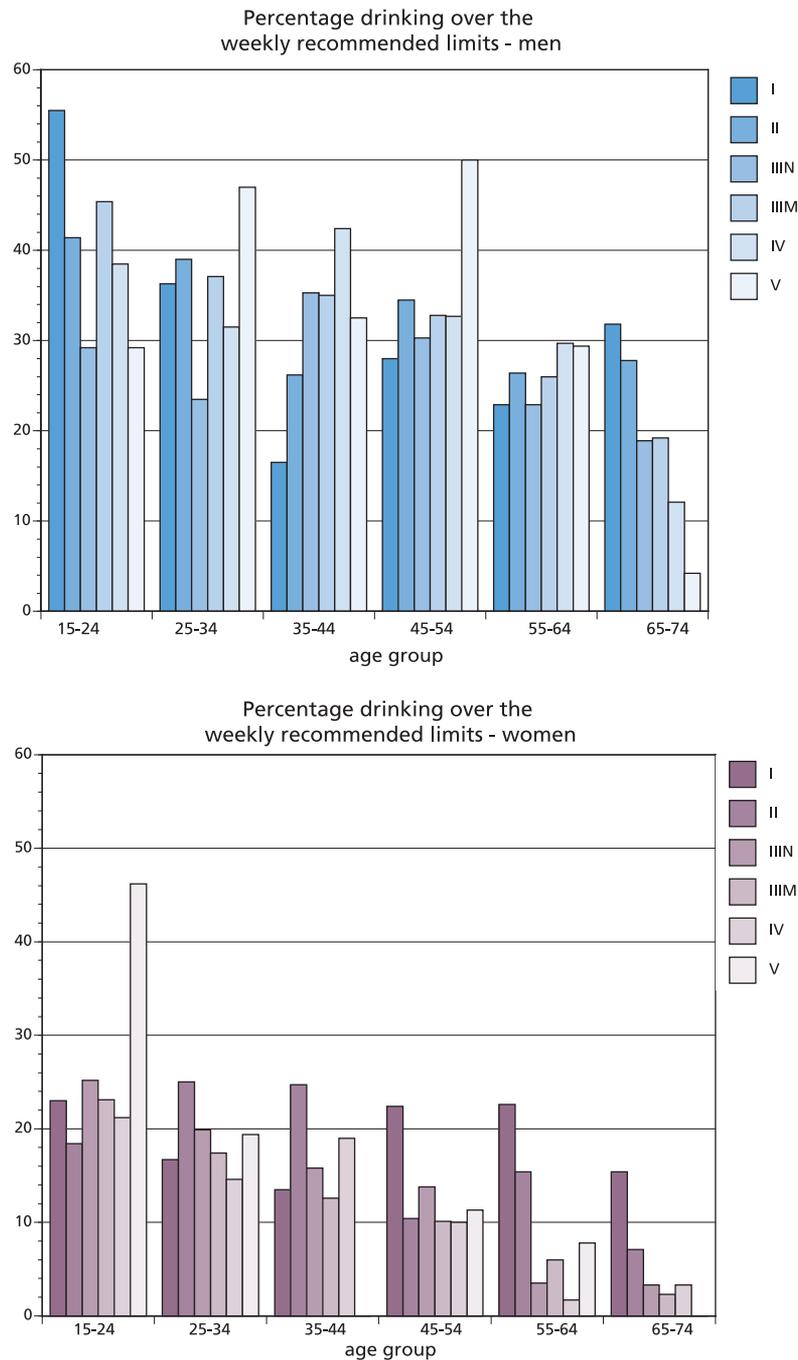
Social Class	Men		Women	
	Mean Weekly Consumption (units)	% Exceeding Weekly Limits (above 21 units)	Mean Weekly Consumption (units)	% Exceeding Weekly Limits (above 14 units)
I	19.8	32	7.6	17
II	19.2	33	7.4	16
IIINM	16.2	28	6.2	13
IIIM	19.5	34	6.2	12
IV	19.6	33	6.0	12
V	24.6	35	5.2	13

**TABLE 2. Male and female weekly consumption and proportion exceeding recommended limits by social class in Scotland, aged 16 to 74.** Source: SHS 1998 (age standardised)<sup>2</sup>

\* Defined by occupation of the chief income earner

The situation differs for women. Those in social classes I and II reported both higher mean weekly consumption and were more likely to exceed the weekly limits (Table 2). In spite of this, women in social classes IV and V were more likely to exceed daily limits and binge on the heaviest drinking day during the week prior to the survey.<sup>2</sup>

When the percentage of men and women in different social class exceeding weekly limits is broken down into age groups clear differences are evident (Figure 3.1). Social class gradients exist but these differ between age groups.



**Figure 3.1. Percentage of men and women in different social class exceeding weekly limits broken down into age groups.** Source: SHS 1998<sup>2</sup>

### **Q5. What impact do socio-economic factors have on alcohol-related mortality and morbidity?**

A5. Alcohol-related death rates across all age groups in Scotland are higher among men and women in the most deprived areas. Increased levels of deprivation are also associated with higher rates of both acute hospital and psychiatric inpatient admissions for people with an alcohol-related diagnosis.

#### **Evidence**

Alcohol-related death rates across age groups are seven times higher among men in the most deprived areas (Deprivation Category 7) than those in the least (Deprivation Category 1).<sup>1</sup> Among women, higher rates of alcohol-related deaths are also associated with increased levels of deprivation.<sup>1</sup> Increased levels of deprivation have been found to be associated with higher rates of both acute hospital (seven times higher in Deprivation Category 7 than in Category 1) and psychiatric (twice as high in Deprivation Category 7 compared with Category 1) inpatient admissions for people with an alcohol-related diagnosis.<sup>1</sup> The reasons for these differences are not known, but may be related to poorer social support, diet or even quality of alcohol amongst the most deprived.

### **Q6. To what extent do perceptions and knowledge about alcohol influence consumption by older people, or help-seeking when alcohol problems arise?**

A6. There is relatively little research on this topic. Older people do not differ markedly from younger people on how they view alcohol; they share many of the misconceptions wider society holds. Moreover, older people view alcohol problems as something that happens to younger people. Some feel that they are old enough to know how much they can drink safely and that continuing to drink as they did in middle age will have little impact on their health. Alcohol is often believed to be 'medicinal'. Older people are also less likely to have heard of alcohol units than younger people, and there is evidence that they feel less confident about seeking help for alcohol problems.

#### **Evidence**

Focus groups conducted with older people have found that drinking was seen as an enjoyable, social activity; alcohol's effects on the body were perceived to be virtually all positive; and alcohol problems viewed as something that happened to younger people.<sup>48</sup> Problems were defined in dichotomous terms: alcoholic or not. Resistance to alcohol health education messages was also identified, mainly older people felt that they would know at their age what they could drink and most said they would drink while taking prescribed medicines. This research concluded that older people need accurate advice about drinking that is specific to them and recognised the likely barriers to these messages. Other focus group research has also found that conventional wisdom of older people can undercut current health promotion messages and that health promotion campaigns and activities may not be seen as relevant to them.<sup>49</sup>

Over the past five years knowledge of alcohol units has grown amongst older people. In the 1997 ONS Omnibus Survey 56% of those over the age of 65 years said they had heard of measuring alcohol consumption in units. By 2004 this figure had risen to 68%. Younger people were more likely to have heard of alcohol units. In 1997 89% of those aged 16-24 reported knowing about alcohol units; interestingly, in the 2004 survey this figure had gone down to 83%.<sup>31;32</sup> These age cohort differences in knowledge could be explained in two ways: (1) those with higher levels of consumption are more likely to be aware of units, (2) health promotion messages are not targeted at the elderly. On the whole it was true in 1997 that those who drank more than 8 units (6 for women) were more likely to know how much one unit was than those who drank only small amounts, but by 2004 there was no clear pattern of this kind.<sup>32</sup>

The Scottish Executive, in preparation for its *Plan for Action on Alcohol Problems*, commissioned a survey of attitudes towards alcohol problems in Scotland. A third of the sample was over 55 years old. The most noteworthy age-related finding was that older people (in this case 55 and over) were less likely to feel confident about being able to contact a service for help with an alcohol problem.<sup>50</sup> There were no age-related differences reported in attitudes to alcohol or alcohol problems.

### **Q7. Does retirement influence alcohol consumption?**

A7. For most people retirement is a positive event. The role of retirement in determining alcohol consumption levels and patterns is not well understood. With retirement comes a reduction in income, which may restrict ability, though not necessarily willingness, to drink. However, on the other hand, retirement also brings more leisure time in which to drink and fewer responsibilities, e.g. employment and childcare, which limit consumption.

#### **Evidence**

There is some evidence to suggest that alcohol consumption decreases around retirement age.<sup>51-53</sup> However, consumption data also suggests that those over 65 are more likely to drink every day (Chapter 2, Question 2).

A history of problem drinking has been reported to influence the relationship between life events such as retirement and divorce and result in changes in drinking patterns.<sup>44</sup> In an analysis of the US Health and Retirement study, onset of a chronic illness and hospitalisation were associated with increased alcohol consumption, as was widowhood, but only on a temporary basis.<sup>44</sup>

## **Conclusion**

Although it has been suggested that the stresses associated with old age may precipitate excess drinking, the evidence to date indicates that major negative life events are only implicated in relapse for those older people with established alcohol problems. However, the increased availability and accessibility of alcohol, combined with alcohol being more affordable in relation to income, ensures that there will be few barriers to the consumption of alcohol in old age for the baby boomers, especially those with good occupational pensions. Because it is no longer viewed as unacceptable for women to consume alcohol we can expect that alcohol will play a major role in the social lives of both men and women in retirement.

## Chapter 4

# Advantages and Disadvantages of Alcohol Consumption

# Advantages and Disadvantages of Alcohol Consumption

## Summary

This chapter examines what is known about the advantages and disadvantages of alcohol consumption for healthy ageing. Although alcohol is associated with many social and pleasurable events, it needs to be kept in mind that alcohol is a drug with toxic effects. Alcohol consumption is linked to a wide variety of adverse health consequences.

- Modest levels of drinking are not associated with poor health in old age. Indeed, very small amounts of alcohol daily may reduce the risk of coronary heart disease.
- In contrast, there are a very large number of physical disadvantages of alcohol consumption (e.g. liver and brain damage).
- The pattern of drinking is as important as the amount consumed. Moderate drinkers who occasionally binge drink substantially raise the risks to health associated with alcohol consumption.
- There are links between increased alcohol consumption and depression. The evidence suggests that depression is commonly secondary to increased alcohol consumption.
- Insomnia is a major problem among older people. Alcohol may worsen this further.
- Impaired brain function is more common in older than younger people who drink heavily and increases after the age of 55.
- There is no clear consensus on whether moderate levels of drinking have a protective effect on cognitive functioning in old age. The best study on this issue found that after controlling for baseline cognitive ability and educational attainment any protective effect from moderate drinking disappeared.
- Alcohol consumption increases the likelihood of a fall and other accidents, and thus a fracture. In excess, alcohol consumption is associated with osteoporosis.
- Hospital admissions associated with alcohol are increasing amongst those over the age of 65 years. This increase, if it continues, has important implications for the NHS.

## Introduction

This chapter examines the advantages and disadvantages of alcohol consumption for healthy ageing. There is a growing body of evidence that light to moderate alcohol consumption is associated with some cardio-protective benefits. Interpretation of the findings are, however, not straightforward. While the explanations for why alcohol might be beneficial are plausible, several studies have shown that those who drink moderately also have a better diet and greater wealth. More importantly, 'moderate' drinking means quite low levels of alcohol consumption, levels which are lower than most people imagine. The pattern of drinking is as important as the amount consumed; moderate drinkers who occasionally binge drink substantially raise the risk levels for mortality. Apart from the obvious disadvantages of alcohol consumption such as cirrhosis of the liver, alcohol consumption is associated with depression, insomnia, and increased likelihood of a fall and thus a fracture. What, however, is unknown is whether drinking at the upper limits, or just beyond, the sensible drinking guidelines is likely to be a major threat to healthy ageing.

### Q1. Is moderate alcohol consumption associated with healthy ageing?

A1. The answer to this question hinges on interpretation of the word 'moderate'. Research indicates that small amounts of alcohol do not have negative effects on mortality and morbidity. There is also a growing body of research evidence suggesting that moderate alcohol consumption may even be associated with healthy ageing. However, the term 'moderate' in many of these studies refers to low levels of alcohol consumption, lower than most people imagine, and certainly lower than the upper limit of the current recommended sensible drinking limits.

The issue of importance to this report is, however, not whether drinking a very low level of alcohol is better than abstinence for healthy ageing, but the fact that there are many baby boomers who drink above the modest amounts of alcohol that appear to have beneficial effects. What we have been concerned with in this report is the question of whether drinking at the upper limits of, or just slightly beyond, the sensible drinking limits will negatively impact on healthy ageing (Figure 4.1 below) for the baby boomers.

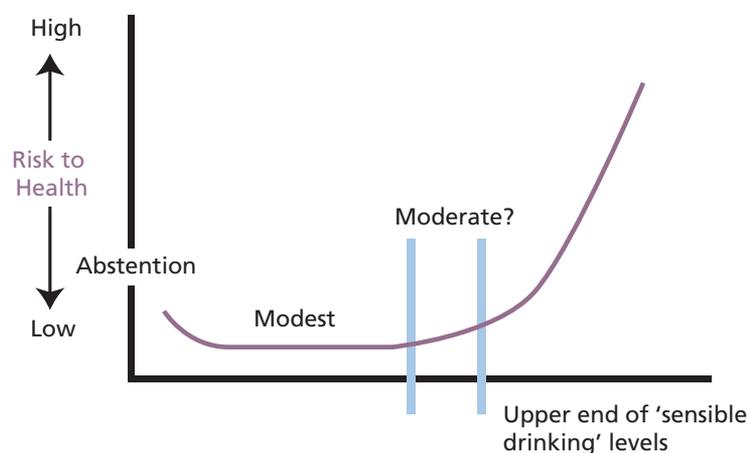


Figure 4.1 Hypothetical J-shaped curve showing the relation between alcohol consumption and risk to health

The impact of moderate drinking levels on healthy ageing is certainly a very complicated issue and involves asking two questions: (1) Does moderate drinking reduce the likelihood of specific illnesses?, and (2) Does moderate drinking reduce all cause mortality? Alcohol consumption might reduce the risk of specific diseases, but increase the risk for others, resulting, overall in an increase in the risk of morbidity and mortality.

There is some evidence that those who abstain have slightly higher levels of all cause mortality than those who drink modestly. There is also a growing body of research evidence suggesting that light drinking reduces the risks of coronary heart disease. There are, however, problems in interpreting this data. It is difficult to control for confounding factors such as health status, diet, exercise etc, such that it can be concluded with absolute certainty that it is the alcohol that has the beneficial effects on health overall. Furthermore, much of the research on the relationship of alcohol consumption and health is concerned with mortality and not morbidity. The focus of this report is not on life expectancy, but compression of morbidity.

The answer to this question is also complicated by the fact that it is not just amount of alcohol consumed, but pattern of drinking. Occasional periods of heavy drinking by those who normally drink moderately appear to substantially increase the mortality and morbidity risks

### **Evidence**

Several large population studies over the past 25 years have noted a J-shaped curve relationship between volume of drinking and all-cause mortality.<sup>55-64,67</sup> However, other studies find no such relationship. The Alameda county study in the US and a study of West of Scotland working men, initially aged 35-64 and followed up for 21 years, found no J-shaped curve.<sup>65;66</sup> Furthermore, many of the epidemiological studies on this issue only studied men. The findings may, therefore, not apply to women.

It is important to carefully examine the consumption levels of those at the bottom of the curve. When this is done, it is clear that moderate consumption is on average about one or two units of alcohol per day. This is a figure that many people would regard as very light drinking. The research is also confusing in that the levels of consumption in drinkers found to have an improved health risk are different in different studies.<sup>55-66</sup>

### **Type of alcohol consumed**

Overall the evidence is mixed as to whether or not the type of beverage consumed is important.<sup>68</sup> When the evidence first emerged suggesting that moderate drinking might reduce the risks of heart disease, it was generally thought that it was wine, particularly red wine, which was 'protective'.<sup>69-71</sup> Other studies, however, indicate that the type of drink does not matter.<sup>72;73</sup>

Those who drink wine, might, of course, be different from those who drink spirits or beer in terms of gender, social class, or other characteristics that might be the main determinant of the better health of those who drink moderately. Many of the epidemiological studies on alcohol and morbidity have not been able to control for the confounding of factors that might be causal. A recent study, however, noted that wine drinkers, compared to spirit and beer drinkers, had

better diets and concluded that it may be the better diets of the wine drinkers, and not the wine itself, which was associated with better health.<sup>74</sup>

### Type of disease

It seems to be generally agreed that if there is a protective effect from low daily doses of alcohol, it is largely because of a reduction of mortality from cardiovascular and cerebrovascular disease.<sup>62;75</sup> Fuchs found that moderate alcohol intake in women with high risk factors for cardiovascular disease, including age, seemed to be protective.<sup>76</sup>

Although modest alcohol consumption may appear to confer health benefits, it is worth emphasizing that alcohol misuse is the commonest cause of liver damage in the UK, the most serious condition being cirrhosis which occurs after many years of heavy consumption. The risk of liver disease increases as consumption rises. Men drinking more than 7.5 units and women more than 5 units of alcohol daily are at increased risk of liver damage; with advancing years the liver becomes less efficient and more vulnerable.<sup>77</sup> Long-term heavy drinking can also lead to chronic inflammation of the pancreas (pancreatitis), which can cause malabsorption, episodes of severe abdominal pain and, occasionally diabetes. The main systems of the body where alcohol most commonly causes serious problems are the liver, digestive system, brain and nervous system, and the heart and circulation.<sup>78</sup> Alcohol appears to have a small dose dependent effect on breast cancer.<sup>67;79</sup>

### Putative protective mechanisms

Research suggests that alcohol raises high density lipoproteins, lowers low density lipoproteins, and reduces platelet stickiness.<sup>80-82</sup> The effect on fibrinolysis, which results in the breakdown of small blood clots, seems to be dose-dependent. Low doses may be beneficial,<sup>83</sup> whereas eight glasses of wine (80g ethanol) the previous evening results in acute inhibition of fibrinolysis, persisting the following morning.<sup>84</sup> It has also been suggested that regular moderate alcohol consumption is associated with decreased insulin resistance and reductions in plasma homocysteine.<sup>85</sup>

### Pattern of drinking

It is not just the amount of alcohol consumed that determines the deleterious impact of alcohol, but the pattern of drinking. Moderate drinkers who occasionally binge drink substantially raise the risk levels of alcohol consumption.<sup>86-88</sup> Rehm *et al.* in a study in the United States found that all-cause mortality in light-to-moderate male drinkers (greater than 2 drinks per day) was about twice as high if they had occasional heavy drinking episodes.<sup>67;89</sup>

## Q2. Does drinking alcohol make depression in old age worse or better?

A2. There is almost no evidence to support the commonly held view that depression increases with age. As with other age groups, there is evidence that increased alcohol consumption leads to depression amongst older people. However, the picture is complicated in that light to moderate drinkers have less depression in the presence of stress.

## Evidence

Major depression is at least four times more likely in people who drink heavily. It occurs in 8% to 12% of older people with problem drinking compared with 2% in the general elderly population.<sup>90;91</sup> Drinking bouts induce depressive symptoms in many people with alcohol problems.<sup>92;93</sup>

Symptoms of depression spontaneously remit with abstinence over a few weeks in the majority of cases without antidepressant treatment. This suggests that, in most cases, drinking excessive amounts of alcohol leads to depression rather than the other way around.<sup>94;95</sup> However, minor degrees of depression can be aggravated by drinking to the point of meeting criteria for a depressive disorder and ongoing depressive symptoms may be a highly significant factor in sustaining problem drinking or inducing relapse in older people with alcohol problems.<sup>96</sup>

Alcohol problems can also complicate adjustment reactions such as bereavement, delay a person's coping skills and result in prolonged depression. It is one of the best predictors of persistent depression at two years following the death of a spouse.<sup>97</sup> A typical scenario would be a major life event, e.g. loss of a loved one, housing change, financial or health problem, producing feeling of unhappiness for which the person drinks to find immediate relief. The person may have a pattern of doing this in the past. The reinforcing effects of this leads to increased alcohol use which may produce further, more long lasting, depressive symptoms either as a direct effect of alcohol or through alcohol-related social stressors such as rejection by friends because of drinking.

There is, however, some evidence that in the presence of stress, light to moderate drinking is associated with less depression.<sup>85</sup> A review of the literature by Baum-Baicker indicated that alcohol in moderate amount is effective in reducing stress.<sup>98</sup> Vasse *et al.* note that low and moderate doses of alcohol increase overall affective expression, happiness, euphoria, conviviality and pleasant and carefree feelings.<sup>99</sup>

### Q3. Does alcohol help older people sleep?

A3. Insomnia is a major problem amongst older people and, as a consequence, older people are the main users of sleeping tablets. Alcohol is known to disrupt sleep patterns. The use of alcohol as a sleep inducer is best avoided.

## Evidence

The prevalence of insomnia increases steadily with age, with estimates ranging from 5% in those aged 18-30 to 30% amongst those over the age of 65. Increasing age is also associated with changes in the nature and duration of sleep complaints. Problems in getting to sleep predominate among young people, while staying asleep is more problematic amongst older people. Complaints of early morning waking increase with age. Although there is less information on incidence, the few studies that exist show that the incidence of insomnia increases with age.<sup>100-102</sup>

Many older people use alcohol to relax and to help them sleep. However, alcohol is not a good hypnotic drug. Although it accelerates the onset of sleep and reduces wakefulness for the first 3-4 hours of sleep, it disturbs sleep patterns for the rest of the night, for example, it suppresses rapid eye movement sleep and produces frequent awakenings and non-restorative sleep.<sup>103-107</sup>

Snoring and obstructive sleep apnoeas (OSA) become more common with age. Amongst independently living elderly people almost a quarter experience OSA, with this rising to 42% of nursing home residents.<sup>108;109</sup> OSA is associated with alcohol consumption, and can be worsened by benzodiazepine hypnotics.<sup>110</sup> Men appear to be more susceptible than women to the effects of alcohol on breathing, probably because they tend to have narrower pharyngeal airways.<sup>111-113</sup> Once apnoea has occurred, the impairment of arousal due to the depressant effects of alcohol, leads to an increased duration of the apnoea, which, in turn, leads to increased hypoxemia. The haemodynamic changes that occur during apnoeas and subsequent arousals may contribute to cardiovascular and cerebrovascular disease.<sup>114;115</sup> Snoring, and by inference OSA, is associated with myocardial infarction, stroke and sudden death,<sup>113</sup> though it has been argued that the relevance of sleep apnoea to public health has been exaggerated.<sup>116</sup> Since alcohol is also a risk factor for vascular disease, the combination of alcohol and OSA may increase the risk for vascular morbidity.<sup>113;117</sup>

#### **Q4. Does drinking alcohol make it more likely that people will develop cognitive impairment or dementia when they get old?**

A4. Impaired brain function is more common in older than younger people who drink heavily and increases after the age of 55. Alcohol-related brain damage (ARBD) seems to occur in over 50% of people with severe chronic alcohol problems. It can occur as a result of the following: (1) Direct effect of alcohol poisoning on the brain; (2) Deficiency of Vitamin B1 (Thiamine) from poor diet (this can cause memorising difficulty known as Wernike-Korsakoff syndrome); (3) Heavy drinking is a risk factor for vascular disease and head injury, both of which can cause or worsen brain damage.

It is therefore possible to say with confidence that drinking above recommended levels is associated with an increased risk of cognitive impairment in older people. There is little evidence that moderate levels of alcohol consumption provide a protective effect for cognitive functioning.

#### **Evidence**

Drinking more than four drinks per day doubles the risk of cognitive impairment over a six year period. Older people with alcohol problems have reduced cerebral blood flow, especially in the frontal area of the brain.<sup>118</sup> Fifty to seventy percent of people with severe chronic alcohol problems show evidence of brain atrophy (shrinkage) on CT scan.<sup>119</sup> Twenty nine percent of nursing home residents have been found to have a history of problem drinking. Of this group, 61% have evidence of brain damage and 14% have depressive symptoms.<sup>120</sup> In addition, where alcohol is not the sole contributor to a dementia, it is at least a partial contributor in at least 10% of cases.<sup>119;121</sup> Some people who develop dementia lose awareness and control of drinking behaviours and tend to drink more, probably worsening their brain function as a result. It is difficult to separate out the role of alcohol from other conditions such as Alzheimer's disease without specialist assessment. To date the literature suggests that, although it is biologically plausible that alcohol increases the risk of developing dementia, epidemiologic studies have not supported this hypothesis.<sup>122</sup>

Although studies agree that heavy drinking is clearly associated with cognitive impairment, there is controversy over the question of a protective role of moderate drinking.<sup>123;124</sup> Some studies suggest that moderate drinking is associated with a slightly reduced risk of cognitive impairment<sup>125;126</sup> and dementia<sup>127;128</sup> compared with abstinence. While Galanis *et al.* agree,<sup>130</sup> they conclude that other health disadvantages of alcohol consumption may outweigh the benefits. Leibovici *et al.* found no benefit from moderate drinking and Zhou *et al.* found that any level of drinking was associated with poorer cognitive performance than abstinence.<sup>131;132</sup> The study by Goodwin and colleagues found that social drinking appeared to be associated with better performance on tests of cognitive functioning, but that when controls for age, sex, education and income were included the significant associations were eliminated.<sup>133</sup> Of particular interest is a study by Krahn *et al.* which found that, after adjusting for baseline cognitive ability and educational attainment, any apparent protective effect from moderate drinking disappeared.<sup>134</sup>

**Q5. Is alcohol consumption associated with an increased risk of broken bones because people are more likely to fall when they have been drinking?**

A5. Alcohol consumption both increases the likelihood of a fall and thus a fracture and in excess is associated with osteoporosis.

## Evidence

Alcohol causes diminished coordination and balance, increased reaction time, and impaired attention, perception and judgment, all of which increase the risk of accidents. In older people, the effects of alcohol may combine with other infirmities to heighten the risk yet further and older people are more likely to be victims of road traffic accidents as a pedestrian. Falls are a major cause of morbidity and mortality in elderly people, especially women, and a common cause of hospital admission.<sup>135</sup> Blood alcohol levels above 50mg per100ml greatly increase the risk of falling in adults.<sup>136</sup> Damage to nerves, especially to the legs and feet occurs in about 10% of chronic heavy drinkers and is thought to be due to a combination of vitamin B deficiency and the toxic effect of alcohol. It results in weakness, pain and numbness usually in the feet, all of which could increase the risk of falls.

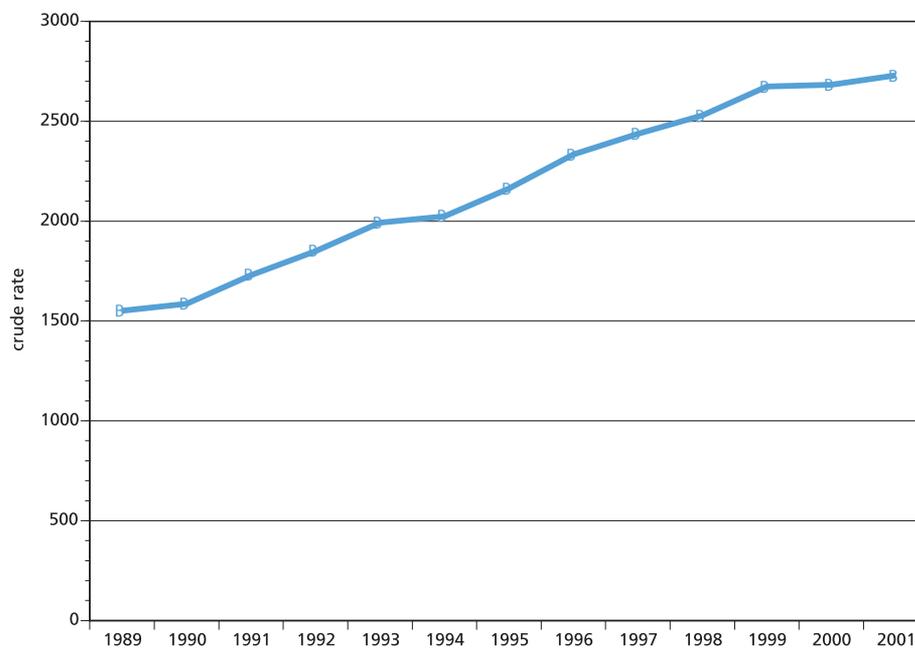
There are mixed messages about the effect of alcohol on bones although generally studies support a detrimental effect of chronic alcohol abuse on bone mass and a possibly beneficial effect of light to moderate alcohol consumption in older females.<sup>137</sup> It is not yet understood why moderate doses of alcohol have been shown to have a positive effect on bone density. However, population based studies have not shown a positive association between alcohol and bone mass and no change or a decrease in the fracture risk.<sup>138</sup>

### **Q6. Are alcohol-related hospital admissions for older people rising?**

A6. Yes. In the UK about 15-30% of men and 8-15% of women of all ages admitted to general hospital in urban areas have alcohol-related physical problems: a large proportion are aged over 50. The crude rate of alcohol-related and attributable hospital admissions for people aged 65 and older in Scotland has increased steadily since 1981. This increase in hospital admissions associated with alcohol amongst older people has important implications for the NHS given the large increase in the number of older people over the next 20 years.

## Evidence

Alcohol-related and attributable hospital admissions for people over 65 in Scotland have steadily increased in Scotland and more than doubled between 1981 and 1999 (Figure 4.2). Alcohol-related deaths across all age groups have risen from 1 in 100 in 1990 to 1 in 40 in 1999.<sup>1</sup> More than two-thirds of these deaths were among men, particularly in the 45 to 64 age group; however alcohol-related deaths among women have also doubled in the last decade. This suggests that increasing alcohol consumption is leading to an increase in alcohol related consequences.



**Figure 4.2. Hospital admissions in the elderly in Scotland (ages 65+) for alcohol related & attributable conditions, crude rates per 100,000 population, 1981-2001.** Source ISD SMR data

## Conclusion

It is only at quite modest levels that alcohol appears to confer health benefits. The level at which alcohol confers health benefits is probably much lower than most of the baby boomers realize. Alcohol consumption exacerbates the problems that many people experience as they age and increases the already increased risk of falls. Hospital admissions for alcohol related problems have been increasing for a number of years. Although it is unknown if drinking at the upper limits of, or just beyond, the sensible drinking limits will be a major threat the healthy ageing for the baby boomers, it can probably be concluded that to remain healthy in old age the baby boomers should ensure that they drink at very modest levels.

# Chapter 5

## Alcohol and Medicines in Old Age

# Alcohol and Medicines in Old Age

## Summary

This chapter reveals an increased potential for health problems in old age due to a combination of medications – both prescribed and over-the-counter – and alcohol. The consequences of this are that the medicines taken may not be as clinically effective as they would otherwise be, or may have more adverse effects. For example, some drugs taken for high blood pressure, may have a greater effect than usual if taken with alcohol. The unpleasant side effects, particularly when getting up suddenly from a bed or chair, may lead people to discontinue to take the medicines leaving them at greater risk of experiencing a heart attack or stroke. Similarly some of the non-insulin anti-diabetic treatments have a greater effect when taken with alcohol, and patients will experience unexpected ‘hypos’. A different sort of example is where both alcohol and the drug have similar effects which combined together can be dangerous. This is seen with drugs which have a sedative effect, such as some antidepressants, and combined with even small amounts of alcohol this will have a much greater effect on a person’s ability to drive or operate appliances.

- Alcohol and medications are metabolised differently in older people than in younger people.
- Normal therapeutic doses of some drugs may have greater effects on older people.
- Over a third of those over 75 take four or more medications.
- More than half of people taking prescribed medication also drink alcohol.
- Many medicines interact with alcohol. Sedation and drowsiness may be worsened by alcohol and other unpleasant interactions may occur.
- There is evidence of insufficient review of medications prescribed for older people and that alcohol is not taken into consideration when prescribing.
- Older people may modify their routine for taking medications in order to drink alcohol. This may result in impaired compliance with medication.

## Introduction

By the time the baby boomers reach old age there will be a large range of medications for the diseases of old age. Many prescribed and non-prescribed medicines react with alcohol with differing severity of consequences. As we get older we are more likely to take medications that interact with alcohol, and for these reactions to be more significant. The aim of this chapter is to raise awareness of the interactions between alcohol, ageing, and the drugs we are likely to take. It is noted that there is evidence of insufficient review of medications prescribed for older people and that alcohol is not taken into consideration when prescribing. Interestingly, older people may modify their routine for taking medications in order to drink alcohol. This may result in impaired compliance with medication.

### **Q1. Why is the combination of alcohol and medications a special issue for older adults?**

A1. Despite the anatomic and physiologic changes that occur with ageing, no clinically significant decreases in drug absorption have been recognised, compared to younger age groups. After absorption, however, age-related changes in the body result in both drugs and alcohol being metabolised differently than for younger people. This may mean that the actions of both drugs and alcohol are greater than might have been expected for the dose taken. Where both drugs and alcohol have similar effects this enhanced activity may have significant consequences for the individual. Thus, as the body composition changes with advancing years, normal therapeutic doses of drugs may become toxic. As well as important age-related changes in the way a drug is metabolised by the liver there are changes in the way a drug is distributed throughout the body and eliminated by the kidneys. Additionally, pharmacodynamic changes – the way organs respond to drugs – are also thought to be related to age changes

#### **Evidence**

The greater proportion of fatty tissue in the elderly causes extension of the drug half-life of fat soluble drugs, such as the barbiturates and some benzodiazepines. Decreased proportions of body water similarly increase the serum concentrations of water-soluble drugs such as ethanol.<sup>139</sup> Likewise decreased plasma proteins in older people reduce levels of protein bound (inactive) drugs, increasing the chances of dose related toxicity.<sup>140</sup> A steady decline in liver function with age particularly impairs the first pass metabolism of drugs, including alcohol, which will alter anticipated blood levels and drug elimination. Drug elimination is mainly determined by renal function which is again impaired with age.<sup>141</sup> There is an increased receptor response to some drugs, such as benzodiazepines, resulting in increased sedation, or opiates producing greater analgesia and respiratory depression.<sup>141</sup>

## **Q2. What proportion of older people are taking prescribed medications and what are the most common drug treatments?**

A2. Nearly half of all drugs prescribed are for those over 65 and more than a third of those over 75 take four or more medications. The most commonly prescribed drugs for older people are antihypertensives, treatments for respiratory disease, antidepressants, anticoagulants, antidiabetics and analgesics. Older people are also more likely to take drugs for sleeping problems than younger people, although the prescribing rates of these drugs in general has decreased dramatically. Studies indicate that more than half of those taking prescribed medications also drink alcohol. There is also concern about the large numbers of people who consume alcohol with over-the-counter (proprietary) medications.

### **Evidence**

In the UK, people over 65 represent 18% of the population but receive 45% of all prescribed medications<sup>142</sup> and 36% of those over 75 years take four or more regular prescribed medications.<sup>143</sup> A three year prospective study of new elderly patients seen at home found that a third were taking four or more different medicines daily.<sup>144</sup>

A community-based study in the US documented the frequency of alcohol consumption and concurrent use of medication. Whilst 43% of responders abstained from alcohol, the remainder reported using alcohol. A quarter of the sample were considered to be at risk from alcohol-drug interactions. The most common risk combination was between over-the-counter pain killers and alcohol (19%).<sup>145</sup>

Research in the US suggests that a large share of prescriptions for older people are psycho-active mood changing drugs (for example benzodiazepines, antidepressants and opiate analgesics) that carry potential for misuse or dependency<sup>185</sup> and interact with alcohol. Older people are also more likely to take drugs for sleeping problems. In addition there are an increasing number of drugs in these categories now available OTC (e.g. oral non-steroidal anti-inflammatory drugs (NSAIDs), opiate analgesics, antihistamines), compounding the polypharmacy regimes. Of some concern is the fact that OTC medicines are used without formal medical supervision, are often used outwith the OTC product licence (i.e., are used at higher than recommended doses, taken for non licensed indications or taken on a chronic basis<sup>146</sup>) and the GP may even be unaware of their use.

## **Q3. Which medicines interact with alcohol?**

A3. Many medicines, both prescription and over the counter, interact with alcohol. These interactions may increase the effect of a medicine (e.g. the sedative effect of an hypnotic), exacerbate a side effect (e.g. the drowsiness associated with anti-histamine use), or result in a new syndrome (e.g. the unpleasant effects of combining alcohol and some antibiotics). Because of the different severity of these interactions, some will require total abstinence from alcohol, whilst others will require modified behaviour. Many of the drugs used as first line treatments for the most common conditions in the over 65s listed above interact with alcohol making it more likely that the medication taken by people over 65 may negatively interact with alcohol.<sup>147</sup> The pharmacokinetic and pharmacodynamic changes described above may further exacerbate these interactions.

### **Evidence**

The best documented interactions are listed in the British National Formulary (BNF) from which Table 5 in Annex B is derived. Major upper gastro-intestinal bleeding (UGIB) is the most important adverse effect of aspirin and other NSAIDs, such as ibuprofen, which are both available over-the-counter. Alcoholic beverages also precipitate UGIB so people who take these drugs and drink alcohol are at an increased risk of a UGIB and potentially suffering other negative health implications.<sup>148-153</sup>

### **Q4. Is alcohol consumption taken into consideration when medications are prescribed to older people?**

A4. There is some evidence of insufficient review of medications prescribed for the elderly and, furthermore, that alcohol is not taken into consideration when prescribing medications.

### **Evidence**

In a study of primary health care consultations in Sweden, 70% of patients had never been questioned about any lifestyle item (including alcohol consumption).<sup>154</sup> Cartwright also reports that GPs are often unaware that their patients drank alcohol, lived alone, or drove, even when they were taking prescribed medicines for which drinking or driving were contraindicated.<sup>155</sup> More recent research has also identified insufficient review of the repeat medication regimes of older people.<sup>156</sup>

### **Q5. Do older people comply with advice not to drink alcohol when taking medicines?**

A5. The few studies found suggest a complex decision-making process whereby older people modify their medications if they intend to 'have a drink'. This delicate trade off means that participants feel they can still have a drink while at the same time satisfying GP instructions not to mix medications with alcohol.

### **Evidence**

It has been estimated that up to 75% of older patients fail to comply with their prescribed medication.<sup>157</sup> Unintentional non-compliance may result from practical difficulties, such as inability to open packs or difficulty swallowing large tablets. Forty percent of elderly have problems accessing their medicines from the containers or packaging in which they are supplied.<sup>158</sup> Arthritis, poor eyesight, and memory lapses can also make it difficult for some older adults to take their medications correctly.<sup>159</sup> Studies have shown that between 25% and 50% of particular groups of older people do not, or cannot, take all of their medications as prescribed.<sup>160</sup> Alterations in biological sensitivity to drugs may also influence the tendency for and problems from non-compliance: larger effects from smaller doses could discourage consumption, or lead to problems at consumption rates that caused no difficulty earlier in life.<sup>161</sup>

In a qualitative study accounts of taking prescribed medicines were analysed and presented as a model of decision-making. A large group of patients were found to modify their medication regimes in a systematic way, reducing/omitting doses and self-assessing the effect of these changes prior to continuing.<sup>162</sup> More recently, a University of Paisley exploratory study found participants seemed to be aware of potential side effects of combining alcohol and medications, and some had experienced them, but had developed their own integral logic, enabling them to have a drink whilst still adhering to instructions. Participants reported different strategies which involve modifications of their regimens such as doubling up doses prior to going out for a drink and stopping taking medications a few days before.<sup>163</sup>

## Conclusion

When the baby boomers reach old age there will be a very large number of medications available that were not available to previous cohorts of older people. Although warnings not to consume alcohol with medications are given, a significant number of people ignore these warnings. This is particularly problematic for older people given that both alcohol and medications are metabolized differently compared to younger people. There is also some evidence that people stop taking their medications in order to consume alcohol, creating further health risks. To all of this is added the risks of taking over-the-counter (proprietary) drugs with alcohol. Health professionals need to be vigilant when prescribing medications and to ensure that alcohol consumption is discussed. Older people need to be given more information about the risks of consuming alcohol with proprietary drugs as well.

# Chapter 6

## Looking into the Future

# Looking into the Future

## Summary

This chapter considers the impact on the health services if 10%, 20% and 5% of the aged baby boomers consumed more than the recommended weekly limits of alcohol. Although it would be especially problematic if 20% consumed more than recommended limits, leading to over 300,000 alcohol related hospital admissions per year, a reduction to 5% would be more manageable. Evidence on the effectiveness of a range of methods aimed at reducing alcohol consumption was considered, with the chapter ending with a brief note on rights and responsibilities.

- If the 20% of the baby boomers who currently exceed the recommended drinking limits exceed the recommended limits in old age, it is predicted that alcohol related hospital admissions will rise to 346,190 per year in Scotland.
- If only 5% of the baby boomers exceed the recommended drinking limits in old age, it is predicted that alcohol related hospital admissions will be in the region of 85,547.
- Taxes, prices and other methods of regulating alcohol consumption such as opening hours and the amount of alcohol in beverages have all been found to be effective in reducing alcohol consumption.
- Education and persuasion are popular methods aimed at controlling alcohol consumption, but the research evidence indicates that they are not very effective.
- Brief interventions following opportunistic screening have been shown to be effective in reducing heavy drinking to more moderate levels.
- Freedom to consume alcohol may be regarded by some as a 'right', but with rights come responsibilities such as not becoming a burden on the state or one's family because of excessive alcohol consumption.

## Introduction

The Alcohol and Healthy Ageing Group set as its task examination of the potential impact of the current level of alcohol consumption by the baby boomers on their future health. The objective was to explore the hypothesis that the current, and relatively high, levels of drinking amongst the baby boomers may be carried into old age and that these levels of alcohol consumption may pose a real threat to the health of future generations of old people. It is acknowledged that the research base for most of the questions posed is limited and, thus, this report is speculative. Nevertheless, after consideration of the research the conclusion reached is that this report addresses a very important issue, one that NHSScotland and the Scottish Executive need to tackle. This report asks health and social care professionals, those involved in health promotion, and the Scottish government to look into the future. The future, however, need not be gloomy. Instead of huge burdens on the NHS because of high levels of alcohol consumption, there could, if people act now, be a future with not only extended life expectancy, but also compression of morbidity into the last few years of life.

## Possible Futures

The baby boomers grew up in a very different world from the generation that immediately preceded them – those currently in old age. Those who are now over 65 were raised at a time when alcohol consumption in Scotland was at a low point. Since the 1960s there has been an almost uninterrupted increase in per capita consumption throughout the UK. During the past 50 years alcohol has become more available, less controlled, and relatively cheaper. The impact of this change has been most evident for women, who have attained greater spending power and independence at work and leisure.

The baby boomers have lived within an environment of acceptance and encouragement of alcohol use that was not evident to an earlier generation. Beverage choice has also changed, with the availability of wine showing unprecedented growth. Cross-sectional research suggests that as people age they reduce their alcohol intake. However, the problem with this research is that it is impossible to separate ageing effects from cohort and period effects. Thus, it may be that the current cohort of old people may have consumed much less when younger and middle aged and have carried this pattern into old age.

If the baby boomers start with a higher level of consumption, reduction of intake may still leave them consuming at levels that will put their health in old age at risk. If they, because of their relative wealth in retirement, combined with more time during the day to consume alcohol, continue to drink at their current levels, the impact will be even greater. The hoped-for compression of morbidity may not happen because of the high levels of alcohol consumption of the baby boomers.

A question of fundamental importance to the report is whether or not alcohol consumption can be viewed as a distinct threat to healthy ageing. In recent years the media have reported a number of epidemiological studies suggesting that moderate alcohol consumption may be positively good for health. However, careful examination of the research leads to the conclusion that there is little direct evidence

that moderate consumption of alcohol confers significant benefit. Those who drink only small amounts of alcohol also tend to have healthier diets and may be more likely to engage in other behaviours that account for their better health. Studies indicating that those who abstain are at greater risk of ill health than those who drink moderately have rarely been able to control for the fact that abstainers may be ex-alcoholics or may not be drinking because of poor health, nor for a large number of other, possibly related factors. However, although the research evidence is not strong, it is necessary to acknowledge that the consumption of *very small* amounts of alcohol may slightly reduce the risk of cardiovascular or cerebrovascular disease. The reduction in the risk of cardiovascular or cerebrovascular disease may, however, be outweighed by the increase in risk for other diseases, for accidents, or for cognitive impairment. Thus, this report is premised on the view that alcohol consumption has the potential for being a major threat to healthy ageing.

Whether or not alcohol consumption threatens healthy ageing depends, of course, on the amount consumed. Thus, an aim of the literature review was to determine to what extent the current cohort of older people, as well as the future cohorts of old people, are likely to exceed recommended daily and weekly limits. Although there is little research on this issue, and a number of problems associated with the quality of that research, there are certainly several studies indicating that a high proportion of older people exceed recommended daily and weekly limits. Furthermore, various surveys indicate that over time successive cohorts of older people are drinking more than people of the same age at earlier time periods. In addition, the baby boomers are drinking considerably more than old people. These studies point to a strong possibility that the baby boomers will be consuming alcohol at high levels up to, and well into, advanced old age.

## Implications – Thinking Ahead

Given what is well known about the negative effects of alcohol on health, the research points to a high probability that the baby boomers, unless they reduce their intake, may not witness significant compression of morbidity. Given that the baby boomers are predicted to live well into their 80s, there could be serious implications for the NHS and other service providers. An ageing population and changing patterns of alcohol consumption have led to suggestions that there will be a future increase in the number of older people with alcohol problems. The greater vulnerability of older people to the toxic effects of alcohol may expose them to greater alcohol-related harm, including accidents and subsequent morbidity. It is also argued that current alcohol-related problems among older people may even be underestimated.<sup>164</sup> Increasing alcohol consumption among future cohorts of older people may exacerbate this risk.

It has been argued that even if current prevalence rates of problem drinking in the UK were to remain at an estimated 3 to 4% of the older population,<sup>147</sup> the actual number of people with alcohol problems would increase because of the greater numbers of older people as the population ages.<sup>165</sup> Both the quantity and frequency of alcohol consumption and, thus, rates of alcohol problems, are higher in older men than in older women. However, when considering increased consumption among women, a 'telescoping' effect has been noted whereby females may progress faster in the development of alcohol problems than men.<sup>166</sup>

## Rising alcohol consumption and future alcohol-related problems

At present approximately 10% of people over the age of 65 years in Scotland, i.e. 80,700, exceed recommended weekly drinking levels. Present data suggest that about 20% of the current 45-65 year group also exceeds these levels. Even if this cohort reduces its drinking so only 10% exceed these levels, this 10% will represent 111,750 people in 2031 and an increase of 38.5% of alcohol problems in old age. If, on the other hand, the 45-65 year group does not reduce intake, there would be 223,500 people exceeding the recommended limits in 2031, almost three times the current numbers. The implications of three times the number of alcohol-related problems in older people would have a major impact on resources. However, with a concerted health education campaign, it should be possible to reduce the numbers exceeding recommended limits to around 5%. This would bring the numbers needed to be treated to more manageable levels, Table 3.

	2001 10% exceed limits	2031 10% exceed limits	2031 Worst Case 20% exceed limits	2031 Best Case 5% exceed limits
Numbers over age 65 in Scotland	807,000	1,117,500	1,117,500	1,117,500
Number exceeding recommended weekly limits	80,700	111,750	223,500	55,875
Alcohol-related hospital admissions per year	125,000	173,097	346,190	86,547

**Table 3. Possible future numbers of people over 65 exceeding weekly limits and alcohol-related hospital admissions in Scotland.**

Alcohol misuse has been estimated to cost the NHS in Scotland £95.6 million at 2001/2002 prices.<sup>167</sup> The annual societal costs, which also includes costs to social work services, criminal justice and emergency services, wider economic costs and human costs, in addition to NHS costs, are estimated to be considerably larger, being £1070.60 million at 2001/2002 prices. These figures, however, are likely to be under-estimates.

## Reducing alcohol consumption

It is probable that current efforts to reduce alcohol consumption and problems, both in the population at large and amongst baby boomers in particular, will at best only be partially successful. Measures to further reduce alcohol consumption and to address some size of increase in alcohol problems amongst older people will, therefore, be needed. The success or otherwise of measures to reduce consumption will determine the scale of response needed to tackle the increase in alcohol problems in older people. We try to answer three more questions in this last section

### **Q1. What could government do to reduce at risk drinking by the baby boomers?**

A1. Government can deliver a wide range of interventions to reduce consumption and the harm associated with alcohol. Taxation, price controls, licensing and other methods of regulating the availability have all been used successfully to reduce alcohol consumption and alcohol related problems. Education and persuasion have been less successful. However, most educational programmes have also been aimed at young people, i.e. those who believe they are immortal. It may be that health education has greater potential once people reach an age at which they become aware of illness and death.

#### **Evidence**

There is now a large body of evidence to support a range of strategic interventions in reducing alcohol consumption and the harm associated with drinking that Governments could adopt.<sup>67;168</sup> None of this exclusively targets the baby boomers, but should effect the entire drinking population. Given the growing body of evidence for period effects on alcohol consumption,<sup>169</sup> strategies aimed at whole populations can be expected to have at least some influence on specific age groups.

#### **Taxes and prices**

Some countries control alcohol problems via alcohol taxes and prices. Regulations on taxes and prices are relatively easy to establish in law and to enforce in practice. Although there are substantial differences between countries, and within countries over time, in the way consumers have reacted to changes in prices, several studies have demonstrated that increased alcohol taxes and prices are related to reductions in alcohol use and related problems.<sup>67</sup>

#### **Regulating the availability of alcohol**

There is a growing body of research demonstrating that reducing the hours and days of sale, numbers and types of outlets, and other restrictions of access to alcohol (e.g. the amount of alcohol in beer) reduces consumption and alcohol related problems.<sup>67</sup> Examples include the 46% increase in alcohol consumption in Finland when there was a change in selling beer in government monopoly stores to selling beer in private stores.<sup>170</sup> Raising the minimum alcohol purchasing age has been found to reduce alcohol use and to substantially reduce traffic accidents in the United States.<sup>171-173</sup> To date research suggests that prevention regulations aimed at commercial sellers of alcohol, with back-up legal enforcement, are more effective in reducing consumption and alcohol problems than education directed at individuals.<sup>67</sup>

## Education

Unfortunately, most of the research on the impact of educational and persuasion strategies, the most popular strategies that governments adopt, indicates that such strategies have failed to meet their objectives.<sup>67</sup> Although public service announcements and campaigns provide important information dealing with responsible drinking, the hazards of drink-driving, and other related topics, to date they appear to be relatively ineffective as an antidote to the high quality, pro-drinking advertisements that appear regularly in the mass media.<sup>174;175</sup> However, there is some evidence that intensive and hard-hitting counter advertising in the field of cigarette smoking has significant effects, at least in the short term.<sup>176</sup> Political pressure, however, undermines such programmes.<sup>177</sup> The alcohol drinks lobby is quite powerful in the UK and it could be assumed that considerable pressure would be put on the government and health promotion agencies to withdraw counter advertising.

Warning labels, in particular those warning of the risks during pregnancy and the dangers of operating machinery and driving cars after consuming alcohol, appear to have raised awareness as evidenced from responses in surveys, but there is almost no research on the impact of warning labels on consumption or alcohol related problems.<sup>67;178</sup> Babor *et al.*, however, note that given the small size and obscurity of warning labels it is surprising that warning labels have been observed to have at least some impact.<sup>67</sup>

Although the general view is that educational programmes have had little impact on the consumption of harmful levels of alcohol, it is also widely acknowledged that few of the evaluations that have been conducted are methodologically sound.<sup>67;179;180</sup> Although it is tempting to conclude, as have others, that the weight of negative evidence is greater than the small positive findings that have emerged from evaluations of informational and educational programmes,<sup>67</sup> it could also be noted, in light of the fact that few evaluative studies have been conducted, that 'absence of evidence is not evidence of absence.'

## Q2. What can health and social care professionals do to reduce at risk drinking by baby boomers and older people?

A2. Health and social workers could, if adequately trained and supported, opportunistically screen for at risk drinking amongst service users. Brief interventions for at risk drinkers have been found to be effective in reducing alcohol consumption to moderate levels. Brief interventions are characterised by low intensity and short duration and typically consist of one to three sessions of counselling and education, including motivation-for change strategies, goal setting, behaviour modification techniques, and the use of self-help manuals.

## Evidence

The possibility of early identification and brief intervention have attracted widespread attention.<sup>67;181</sup> A large number of trials have tested the effectiveness of brief interventions in primary care for reduction of harmful drinking.<sup>182</sup> Brief interventions are characterised by low intensity and short duration and typically consist of one to three sessions of counselling and education, including motivation-for change strategies, goal setting, behaviour modification techniques,

and the use of self-help manuals.<sup>183</sup> These programmes aim to facilitate moderate drinking, rather than promote total abstinence.<sup>67</sup> Recently published clinical guidelines for primary care (SIGN Guidelines) recommend their use opportunistically in response to a range of presenting complaints.<sup>184</sup> These include some problems more common in older people; memory disorders, depression, anxiety disorders, falls, impotence, cancers, pancreatic and liver disease, and cardiovascular disease. This decision to opt for opportunistic intervention based on presentation, rather than population based screening, is particularly appropriate for older people. The lower prevalence of hazardous and harmful drinking by older people would make case finding by screening more expensive in relation to the expected benefit.

Research has shown that 10-30% of non-dependent problem drinkers reduce their drinking to moderate levels following a brief intervention by a physician or other clinician.<sup>185</sup> Gordon *et al.* have both tested brief interventions with older people and found similar results as those found with younger people.<sup>186</sup> A study by Kristenson *et al.*, of people under the age of 65 years in Malmo, Sweden demonstrated significant reduction in gamma-glutamyl transferase and health care utilization for up to five years after a brief intervention involving a series of health education visits aimed at reducing alcohol use.<sup>187</sup> A study conducted in GP practices in the UK found significant reductions in alcohol use by the brief intervention group compared with the control group 12 months after the intervention.<sup>188</sup>

Beyond their immediate benefit to the individual patient it may be possible if such methods are employed consistently within a framework of policies that they could have a public health benefit in reducing alcohol consumption more widely in society and contributing to culture change.<sup>189</sup> It should not be forgotten that in addition to identifying hazardous and harmful drinkers that they can intervene directly with, professionals will also identify those with alcohol dependence who would benefit from specialist treatment if they are asking older people about their drinking.

## Rights and Responsibilities

In the next chapter we make a number of recommendations as to what the government and health and social care professionals could do to reduce the negative impact of alcohol consumption on healthy ageing. Before we do this, it is important to comment on the balance between rights and responsibilities. There is much discussion about the UK becoming a 'nanny state', with increasing government intervention in our lives. People in Scotland attach considerable importance to being allowed to decide for themselves whether or not to adopt a healthy life-style. Screening for alcohol misuse is regarded by some as an unnecessary invasion of privacy, with controls over alcohol consumption an unacceptable infringement of rights to self-determination.

With rights, however, come responsibilities. A 'right' to drink as much as one chooses, whenever and wherever, also implies a responsibility not to harm others and, it could be argued, to not drink to the extent to which self-harm requires

excessive demands on the NHS. Most people in the UK can now expect to live well into their 80s if they adopt a reasonably healthy life-style. Although a healthy life style is usually chosen in order to ensure a good quality of life in old age, as well as a long life, the fact that we live in a country which provides its citizens with health services free at the point of entry, an entitlement which many view as a 'right', means that, as the beneficiaries of the NHS, it could be argued that we all have a responsibility to look after our health and to not take more than our fair share of the nation's health care resources.

Individuals can only take steps to age healthily if informed about the health impact of alcohol. This includes knowing that the effects of alcohol vary not only by gender, but by age. Knowing about the adverse effects of combining alcohol with medications is also important for healthy ageing. The problem, of course, is that the pleasures or 'reinforcements' for drinking alcohol are immediate, whereas the punishments or disadvantages of alcohol consumption are, for most people, far into the future. This is not only why health education campaigns seem to make little immediate impact, as well as why it is legitimate to intervene in people's lives 'for their own good'. Screening for alcohol problems and control of consumption via taxation and licensing can be ethically justified on utilitarian grounds (the greatest good for the greatest number), as well as on the grounds of 'doing good', i.e. the principle of beneficence.

## Conclusion

If the baby boomers carry their current drinking patterns into old age there could be a quite dramatic increase in alcohol-related hospital admissions, something which would create serious difficulties for the NHS. There are, however, a number of methods that could be adopted to reduce alcohol consumption. Because education and persuasion have not been found to make a significant impact, taxation, pricing and other methods of regulating alcohol consumption need to be considered. Brief interventions by health care professionals have been effective across the age ranges.



# Chapter 7

## Recommendations

# Recommendations

## Summary

In this chapter one main recommendation and four subsidiary recommendations are made. The key recommendation is that recognition should be made of changes in the ability to metabolise alcohol with age and, as a consequence, age-based sensible drinking limits should be introduced. Most people are fully aware that how much alcohol an individual can safely consume depends on gender, height, weight, and age. The development of age-based sensible drinking limits will, therefore, be easily accepted. Indeed, it is the opinion of the Alcohol and Healthy Ageing Group that very broad guidelines are ignored precisely because they are viewed by the public as too simplistic.

Given the difficulty that the Alcohol and Healthy Ageing Group had in finding good research, further research is recommended. In the meantime, more health education on the effects of alcohol should be targeted towards middle-aged and older people. To help people make informed choices when they do drink, it is recommended that beverages containing alcohol should be labelled in units. In addition licensed premises should post notices of the number of units of alcohol in standard drinks. Health and social care professionals should opportunistically screen for at risk drinking and then, with proper training, offer brief interventions. It is also acknowledged that the most efficient method of bringing consumption levels down is via pricing, rather than education.

Recommendations:

- Key recommendation – Age-based sensible drinking limits should be developed.
- More research on the use of alcohol by the baby boomers should be conducted. A cross-sequential longitudinal study is recommended.
- Education regarding alcohol targeted at the baby boomers should be provided.
- Training of health and social care professionals in opportunistic screening and brief interventions should be introduced.
- ‘Unit of alcohol’ labelling of beverages.
- Increase in price of beverages containing alcohol via taxation in order to reduce consumption.

## Introduction

In this report it has been argued that alcohol consumption is a major threat to healthy ageing for the baby boomers. Although it is acknowledged that there are problems with the available evidence, it is suggested that there is evidence that age differences in drinking are due in part to cohort effects, not just ageing. As a consequence, it is possible to argue that the baby boomers may carry their current, and relatively high, levels of drinking into old age. As a cohort the baby boomers, because of good occupational pensions, will be relatively well off and will be able to afford to socialize in pubs and drink alcohol at home. While the baby boomers are very likely to reduce their consumption levels with age, they may, nevertheless consume at levels slightly above recommended limits. However, as we age our ability to metabolize alcohol changes, which means that the current 'sensible' limits might not be sensible for older people. Furthermore, when the baby boomers reach old age there will be even more prescription and over-the-counter medications which could improve the quality of life for those who are ill. Many medications interact negatively with alcohol; not taking medications in order to consume alcohol is also risky. With this in mind the Alcohol and Healthy Ageing Group has made one key and five subsidiary recommendations.

## Key recommendation – Age-based sensible drinking guidelines

In 1995 the Department of Health (DoH), in its report *Sensible Drinking*, examined current medical and scientific evidence and its interpretation on the longer-term effects of drinking alcohol.<sup>190</sup> The interdepartmental committee also considered whether the sensible drinking message should be reviewed. It concluded that moderate consumption of alcohol has beneficial effects and that there was sufficient evidence to suggest that women should drink less than men. No recommendations were made for age-based guidelines for sensible drinking. The recommendations of the committee for sensible drinking guidelines were as follows:

### Men

- The health benefit from drinking alcohol relates to men aged over 40 and the major part of this can be obtained at levels as low as one unit a day, with a maximum health advantage lying between 1 and 2 units a day.
- Regular consumption of between 3 and 4 units a day by men of all ages will not accrue significant health risk.
- Consistently drinking 4 or more units a day is not advised as a sensible drinking level because of the progressive health risk it carries.

## Women

- The health benefit from drinking for women relates to postmenopausal women and the major part of this can be obtained at levels as low as one unit a day, with the maximum health advantage lying between 1 and 2 units a day.
- Regular consumption of between 2 and 3 units a day by women of all ages will not accrue any significant health risk.
- Consistently drinking 3 or more units a day is not advised as a sensible drinking level because of the progressive health risk it carries.

Somewhat surprisingly, the Department of Health's interdepartmental committee suggested that abstainers might wish to consider consuming alcohol to reduce the risks of heart disease. This is not a recommendation that we would make. The view of the US National Institutes on Alcohol Abuse and Alcoholism (2003) is more in line with our thinking:

*"If you're are a nondrinker, however, you should not start drinking solely to benefit your heart. You can guard against heart disease by exercising and eating foods that are low in fat."  
(<http://www.niaaa.nih.gov/faq/q-a.htm>)*

After consideration of the research base on the relationship between alcohol and ill health, and after over a year debating the implications of an increase in the numbers of older people and the desirability to compress morbidity as close as possible to death, we have concluded that the current recommended limits for sensible drinking are too high for middle-aged and older people. It is our view that compression of morbidity is unlikely to occur unless the sensible drinking limits are lower for older people. Furthermore, it is our view that, while many people do reduce their levels of consumption as they age, there is also a strong cohort effect. In other words, the baby boomers drank more when young and are likely to carry these patterns of consumption into old age.

The higher disposable income that many baby boomers will acquire also means that they will have the financial resources to maintain higher levels of alcohol consumption when they retire. This will not necessarily result in large increases in problematic behaviours, but drinking at the current sensible levels is very likely, in our view, to have a low level, but negative, impact on healthy ageing. The issue, therefore, is not that these relatively higher levels of drinking will shorten life, but that the baby boomers will have increased life expectancy characterised by higher than hoped for, or necessary, levels of illness and disability.

The development of age-based sensible drinking guidelines seems, in our view, to be needed in order to move towards a healthy old age for the baby boomers. It is our view that much lower levels of alcohol consumption are required for healthy ageing. This view is shared by the US National Institute on Alcohol Abuse and Alcoholism which recommends that those over the age of 65 drink no more than one drink per day. This is a level considerably lower than the levels noted above in the UK Department of Health's recommendations.

*“The National Institute on Alcohol Abuse and Alcoholism, part of the National Institutes of Health, recommends that people over age 65 who choose to drink have no more than one drink a day. Drinking at this level usually is not associated with health risks.”*  
(<http://www.nia.nih.gov/health/agepages/alcohol.htm>)

We are not stating what the age based limits should be in this report. This needs to be a matter for another committee of experts, should our recommendation for age based sensible limits be accepted.

## Subsidiary recommendations

### 1. More research on ageing with alcohol

It will come as no surprise to readers that we are recommending more research. The baby boomers are currently aged 40-60 (at the end of 2004). Thus, in order to follow the baby boomers into their 60s, such studies need to last for 30 years. Along with amount, frequency, etc, the role of life events (e.g., retirement, bereavement) in patterns of alcohol consumption should be examined. The role of alcohol in accidents and medication adherence and modification in relation to drinking should also be included. Time sequential research designs are recommended in order to separate cohort and ageing effects.

However, it is acknowledged that time sequential designs are expensive and, therefore, we recommend that at least some funding go into cross-sectional studies on the following: (a) attitudes and knowledge of alcohol across the age range, (b) public knowledge of the impact of ageing on the ability to tolerate and metabolise alcohol, and (c) the nature and pattern of alcohol consumption among people age 45-65.

Better use should be made of established data sources, in particular repeated surveys. National population surveys that examine alcohol consumption should include people over the age of 75 years, as well as provide greater differentiation of age groupings of older people. In the rare instance that longitudinal studies of ageing are commissioned in the UK, the inclusion of items on alcohol consumption and problems needs to be advocated.

### 2. More alcohol education aimed at middle-aged and older people

Middle-aged and older people need to be made aware of the impact of ageing on alcohol metabolism and the need to reduce consumption levels with age. An increase in awareness could be brought about through pre-retirement programmes. Health education focusing on alcohol should also include images of older people.

### **3. Training of health and social care professionals**

Primary care and hospital care NHS staff must be trained in taking alcohol histories from all patients with particular reference to older people. Health care professionals should also be trained to explore patterns of alcohol consumption to prevent drug/alcohol interactions. Although this report is concerned primarily with the raised levels of alcohol consumption of the baby boomers, rather than those addicted to alcohol, the group recommends that specialist alcohol services should be available to older people. At the moment such services are available mainly to those under the age of 65. However, in the future there could be many more older people with serious alcohol problems. These people should not be deemed to be unsuitable for treatment just because they are old.

### **4. Labelling and packaging – Alcohol unit information**

Some fairly simple policies could go a long way to reducing alcohol consumption amongst the baby boomers. The Alcohol and Healthy Ageing Group recommends that all bottles and cans of alcoholic beverage should contain information about units of alcohol, and licensed premises should be required to post information regarding units of alcohol in standard measures of wine, beer and spirits. Packaging of medications that interact with alcohol need to include more explicit information indicating that older people are more at risk.

### **5. An increase in the price of beverages containing alcohol**

The price of beverages containing alcohol should be increased via taxation. There is a large body of evidence from many different countries showing that price affects drinking behaviour. The price of alcohol has declined steadily in relation to incomes and, at the same time, there has been a corresponding increase in consumption in all age groups.

## **Conclusion**

The Alcohol and Healthy Ageing Working Group is strongly of the view that age-based sensible drinking limits should be introduced. It has long been recognized that there are gender differences in ability to metabolize and tolerate alcohol. It is time that it is acknowledged that there are age differences as well. We are not stating what those limits should be in this report. This needs to be a matter for another committee of experts, should our recommendation for age-based sensible limits be accepted. Given the shortage of good research to draw on in the preparation of this report, it will come as no surprise that a subsidiary recommendation is more research. Public and professional awareness also needs to be raised about the need to reduce alcohol consumption with age.

# Appendix A

## Definitions and Abbreviations

# Appendix A

## Definitions and Abbreviations

**Alcohol-related brain damage (ARBD)** – Structural damage to the brain either directly due to alcohol or because of other alcohol-related problems especially vitamin deficiency (this includes Wernicke-Korsakoff Syndrome).

**Alcohol-related morbidity** – Consists of two types:

1. Conditions where alcohol is 100% (or very nearly) associated with the condition.
2. Conditions where alcohol is thought to play a significant part in the genesis of the condition.

**Alcohol-related mortality** – Consists of two types:

1. Conditions where alcohol is 100% (or very nearly) associated with the condition e.g. alcohol poisoning
2. Conditions where alcohol is thought to play a significant part in the genesis of the condition e.g. RTA

**Alcohol 'problems'** – Alcohol problems have been defined as the whole spectrum of harm (actual or potential) to work, relationships, social position, physical or mental health. The amounts of alcohol involved will vary from individual to individual over time.<sup>1</sup>

**Baby boomers** – Large cohort born after World War II. The term was coined in the United States and there it refers to the cohort born between 1946 and 1963. In the UK the baby boomers are often defined as the cohort born between 1945 and 1965.

**Binge drinking** – Drinking an excessive amount on any one occasion. There is no commonly-accepted definition, but the Scottish Health Survey uses the criterion of drinking more than twice the recommended daily benchmark on a person's heaviest drinking day (more than 8 units for men and 6 units for women).<sup>1</sup>

In reality, this means, for example:

Three pints of strong beer at lunchtime and in the evening = two (male) "binges" per day.

Two large glasses of wine at lunchtime and in the evening = two (female) "binges" per day.

**Compression of Morbidity** – Compression of ill-health and morbidity into a short period just prior to death.

**Early-onset/Graduate drinkers** – People who have had a lifetime of alcohol problems starting in early life and continuing into old age and who evaded premature death and survived into old age.

**Fibrinolysis** – Breakdown of fibrin in blood clots, chiefly by the proteolytic action of plasmin and results in the removal of small blood clots.

**Late/recent-onset drinkers** – People who have developed alcohol problems in later life.

**Moderate drinking** – Definitions of moderate levels of alcohol consumption vary. The Royal College of Physicians (2001) in the report *'Alcohol – can the NHS afford it?'*<sup>54</sup> define 'moderate drinking' as 15 to 21 units per week for males or 11 to 14 units per week for females (based on General Household Survey usage,<sup>3</sup>); this approximates to two units of alcohol a day. The (US) National Institute for Alcohol Abuse and Alcoholism defines 'moderate' alcohol use as up to two drinks per day for men and one drink per day for women and older people (one drink equals one 12-ounce bottle of beer or wine cooler, one 5-ounce glass of wine, or 1.5 ounces of 80-proof distilled spirits [www.niaaa.nih.gov/faq/q-a.htm#question13]). The table below provides definitions of 'light', 'medium' and 'heavy' drinking based on a meta-analysis by Gutjahr *et al.*<sup>191</sup> and endorsed by the UK Medical Council on Alcohol.<sup>192</sup>

DRINKING	RISK	UNITS/WEEK
Light	Least	Less than 8 (males)
		Less than 6 (females)
Medium	Low	9 to 21 (males)
		7 to 14 (females)
Heavy	Hazardous	22 - 50 (males)
		15 - 35 (females)
	Harmful	51 + (males)
		36 + (females)

**Old age** – Age is measured in terms of time and is not a causal variable. Thus, when we talk of the effects of ageing we are talking about 'age-related' effects. The underlying causal factors are processes such as social transitions, psychological stress, cell loss, etc. In the West 'old age' is commonly linked with the year at which a person may collect a pension. That particular age was rather arbitrarily set by Bismark as 65 years. The terms old and older are, however, relative terms.

**Polypharmacy** – Concurrent use of several drugs or medicines.

**Recommended daily limit** – 3-4 units for men and 2-3 units for women of all ages, although consistently drinking 4 or more units a day for men and 3 or more units a day for women is not advised as a sensible drinking level.<sup>190</sup>

**'Unit' of alcohol (UK)** – 10ml of pure alcohol (ethanol) or that which contains 8g of ethanol. The unit content of drinks is calculated from the strength (percentage of alcohol by volume) and the volume.

**Weekly recommended limit** – 21 units for men and 14 units for women.<sup>193</sup>

**Wernike-Korsakoff's syndrome** – A syndrome found in people with chronic alcohol problems, characterised by very poor short-term memory, which can result in disorientation and concoction of stories to make up for gaps in memory.<sup>194</sup>

### Abbreviations

ARBD	Alcohol-related Brain Damage
BNF	British National Formulary
DoH	Department of Health
GHS	General Household Survey
GP	General Practitioner
GRO	General Register Office for Scotland
HEBS	Health Education Board for Scotland
NIAAA	National Institute of Alcohol Abuse and Alcoholism (USA)
NHS	National Health Service
NSAIDS	Non-steroidal Anti-inflammatory Drugs
OSA	Obstructive Sleep Apnoeas
OTC	Over-the-counter
PHIS	Public Health Institute of Scotland
SHS	Scottish Health Survey
UGIB	Upper Gastro-intestinal Bleeding
UK	United Kingdom
US	United States

## Appendix B

# Alcohol and Medication Interactions

## Appendix B

### Alcohol and Medication Interactions

**Table 4. Summary of alcohol and medication interactions** (Source: BNF)

Drug group	Effect
ACE Inhibitors and Angiotensin-II Antagonists	Enhanced hypotensive effect
Analgesics	Sedative and hypotensive effect of opioid analgesics enhanced
*Antibacterials	Disulfiram-like reaction with cefomandole, metronidazole, and possibly timidazole; increased risk of seizures with cycloserine
*Anticoagulants	Enhanced anticoagulant effect of warfarin, with large amounts of alcohol. Changes in diet and alcohol consumption will affect warfarin control
*Antidepressants	Sedative effect of tricyclics (and related) enhanced; tyramine (contained in some alcoholic and dealcoholised beverages) interacts with monamine oxidase inhibitors (MAOIs) (hypertensive crisis) – but if no tyramine, enhanced hypotensive effect; effects of alcohol possibly enhanced by selective serotonin reuptake inhibitors (SSRIs)
Antidiabetics	Enhanced hypoglycaemic effect; Increased risk of lactic acidosis with metformin
Antiepileptics	CNS side-effects of carbamazepine possibly enhanced
Antihistamines	Enhanced sedative effect
Antihypertensives	Enhanced hypotensive effect; sedative effect of Indoramin enhanced
Antimuscarinics	Sedative effect of hyoscine enhanced
Antipsychotics	Enhanced sedative effect

Drug group	Effect
Anxiolytics and Hypnotics	Enhanced sedative effect
Barbiturates and Primidone	Enhanced sedative effect
Beta-blockers	Enhanced hypotensive effect
Calcium-channel blockers	Enhanced hypotensive effect; plasma-alcohol concentration possibly increased by verapamil
Cytotoxics	Disulfiram-like reaction with procarbazine
Dopaminergics	Reduced tolerance to bromocriptine
Lofexidine	Enhanced sedative effect
Muscle relaxants	Baclofen, methocarbamol and tizanidine enhance sedative effect
Nabilone	Enhanced sedative effect
Nitrates	Enhanced hypotensive effect
* Paraldehyde	Enhanced sedative effect
Retinoids	Etretinate formed from acitretin in presence of alcohol

\* potentially hazardous interaction, the combination should be avoided, or only undertaken with caution and appropriate monitoring



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