

Adult alcohol consumption

8

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Summary

- This chapter presents information about adult alcohol consumption in England. It looks at who in the population drinks, frequency of drinking, average weekly consumption and alcohol consumption in the last week.
- In 2014, a minority of adults, 18% (15% of men and 21% of women) did not drink alcohol. The majority, 63% of men and 62% of women, drank at levels considered to be at lower risk of alcohol-related harm: that is 21 units or less per week for men and 14 units or less for women. The remaining 22% of men and 16% of women drank more than this, including 17% of men and 12% of women who drank at increasing risk levels, and 5% of men and 4% of women who drank at higher risk levels (more than 50 units a week for men, more than 35 units for women).
- Alcohol consumption varied with age. Among men, the prevalence of drinking more than 21 units a week increased with age and was most common among men aged 65-74, 30% of whom drank at this level. Among women, the proportion who drank more than 14 units a week declined between the ages of 25 and 44, and was highest among women aged 55-64 (22%).
- The proportion of adults who drank alcohol varied across regions. London had the lowest proportion of drinkers; 77% of men and 67% of women. Once age was taken into account, the highest proportion of male drinkers was in the South West (92%) and the highest proportion of female drinkers was in the East of England (86%).
- The proportions of men and women who had not drunk alcohol in the last year were higher in lower income households (27% of men and 30% of women in the lowest income quintile, decreasing to 5% of men and 12% of women in the highest income quintile).
- The proportions of men and women who drank above 21 or 14 units a week respectively varied with household income. Drinking at this level varied from 27% of men and 23% of women in the highest income quintile to 17% of men and 10% of women in the lowest income quintile.
- The proportion of adults who did not drink alcohol varied between ethnic groups. 55% of Asian men and 41% of Black men did not drink alcohol, compared with 9% of White men. Similarly, 74% of Asian women and 38% of Black women did not drink alcohol, compared with 15% of White women.
- The proportion of White men who drank more than 21 units a week was higher than the proportions of men in other groups: 25%, compared with 6% of Black men and 6% of Asian men. The same was true for women who drank more than 14 units a week: 19% of White women, compared with 6% of Black women and 2% of Asian women.
- The proportions of men who drank alcohol on five or more days in the last week increased from 5% of those aged 16-24 to 29% of those aged 65-74 and then varied with no clear pattern. Among women, 2% aged 16-24 drank on five or more days in the last week, increasing to 14% of those aged 55-74.

- Among men who drank alcohol in the last week, 57% had drunk more than 4 units on at least one day and 29% had drunk more than 8 units in a day. Among women, 50% of those who had drunk in the last week had exceeded 3 units on at least one day, and 22% had exceeded 6 units.

8.1 Introduction

8.1.1 Alcohol and risks to health

Most adults in Britain drink alcohol, at least occasionally, and alcohol has an established place in British social life and culture. In recent years, changes in the patterns of consumption and increasing awareness of the associated risks have given rise to widespread concern among policy makers, health professionals and the general public about the impact of alcohol consumption. In the last ten years, governments have published successive strategies for promoting sensible drinking and reducing alcohol-related harm: the 2004 *Alcohol Harm Reduction Strategy for England*;¹ *Safe. Sensible. Social. The next steps in the national alcohol strategy* in 2007;² and *The Government's Alcohol Strategy* in 2012.³

Alcohol has been identified as a causal factor in more than 60 medical conditions, including mouth, throat, stomach, liver and breast cancers; cirrhosis of the liver; high blood pressure; and depression.^{4,5,6} The health harms of alcohol are generally 'dose-dependent', that is the risk of harm increases with the amount drunk. Additionally, alcohol increases the risk of accidents, violence and injuries. In England, hospital admissions related to alcohol consumption more than doubled in the last decade from 493,760 in 2003/4 to 1,059,210 in 2013/14, although this increase is to some extent attributable to changes in the way secondary diagnoses have been recorded. This includes 333,010 cases in 2013/2014 either attributable to alcohol as a primary cause or with an alcohol-related external cause as a secondary diagnosis.⁷

Alcohol-related deaths in England have risen in recent years, from 5,984 in 2003 to 6,592 in 2013. Men are more likely than women to die from an alcohol-related cause. Alcohol-related mortality disproportionately affects men and women in the more disadvantaged social classes: in England and Wales in 2001-2003, the alcohol-related mortality rate for men in the routine class was 3.5 times that of men in higher and managerial occupations; the corresponding increase for women in the routine class was 5.7 times that of women in higher and managerial class.⁸ These inequalities are one element of what has been called the 'alcohol harm paradox': the most deprived drink the least but appear to suffer the most harm from alcohol.⁹ There is also evidence to suggest that the ways in which alcohol consumption affects health differ according to specific patterns of drinking, for example relatively infrequent drinking of large amounts (often called 'binge drinking'), as opposed to drinking at lower levels but doing so habitually on most days.^{10,11}

These trends have been ascribed to a long-term increase in the amount of alcohol drunk in the UK. Per capita alcohol consumption rose over the second half of the twentieth century. From 1990, the average amount drunk each year increased from 9.8 litres of pure alcohol per head to a peak of 11.6 litres in 2004, though it has since returned to 1990 levels (9.7 litres in 2012).¹² The increase in consumption took place at a time when alcohol became more affordable: that is the price of alcohol relative to adults' disposable income declined over the late 1980s and 1990s. The affordability of alcohol has remained at broadly similar levels since the early 2000s. In 2014, alcoholic drinks were estimated to be 53% more affordable than in 1980.⁷

In recent years, there has been an increasing body of research findings in support of using alcohol pricing, specifically a minimum unit price, to reduce alcohol-related harm.^{13,14,15} In Scotland legislation was passed in 2012, providing for a minimum price per unit.¹⁶ This has been subject to ongoing legal challenge and has not so far been implemented.¹⁷ In England, the 2012 Alcohol Strategy included a commitment to a minimum unit price.³ In 2013, it was announced that there were no immediate plans to introduce legislation to implement this.¹⁸

8.1.2 Guidance on alcohol consumption

Official guidance about alcohol consumption was first introduced in 1987. Specifically the 'unit' of alcohol, previously a term used in clinical practice, was introduced as a means of monitoring the alcohol content of specific drinks¹⁹ following the concept of 'sensible

drinking' by government and health educators in the 1980s.⁵ The recommended limits, 21 units per week for men, 14 units per week for women, were endorsed by the Royal Colleges of General Practitioners, of Psychiatrists, and of Physicians.²⁰ This guidance was revised in 1995 and linked to daily rather than weekly consumption.

The NHS now advises that men should not regularly drink more than 3 to 4 units of alcohol per day, and women should not regularly drink more than 2 to 3 units of alcohol per day. 'Regularly' is defined as most days in the week. Pregnant women are advised to avoid alcohol altogether.²¹ In the course of a week, men are advised to drink no more than 21 units, women no more than 14 to avoid the risk of alcohol-related harm. Drinking at these levels is defined as 'lower risk'. Adults who regularly drink more than these amounts are considered to be at 'increasing risk'.²² Men who regularly drink more than 8 units a day (or 50 units a week) and women who regularly drink more than 6 units a day (or 35 units a week) are considered to be at particular risk of harm, and are described as 'higher risk' drinkers.

More recently the Royal College of Physicians in 2011 suggested that the recommendations be refined to include 'three alcohol-free days a week' in light of evidence that daily drinking is a risk factor for alcohol dependency and alcoholic liver disease.²³ The same report also suggested that new guidelines be given for older people since they are more susceptible to the effects of alcohol, due to physiological changes related to ageing.

The guidelines have remained broadly similar since their revision in 1995. Until 2004, one unit of alcohol was generally accepted as being equivalent to a half pint of ordinary beer or lager, a small (125ml) glass of wine or a single measure of spirits. In 2004, the *Alcohol Harm Reduction Strategy* acknowledged that these assumptions were no longer valid.¹ Two changes were identified as being particularly significant. The alcoholic strength of beers and wines had increased over time. For example, the average strength of wine was around 12.5% alcohol by volume (ABV), rather than the 9% assumed earlier, increasing the alcoholic content of an average bottle of wine from 6 to 9 units. In addition, instead of the 125ml glass used previously, a standard glass of wine sold in a pub or bar was likely to be 175ml or even 250ml, increasing the alcohol consumed in one glass from one unit to more than two or three units, respectively. As a consequence, advice on the alcoholic content of drinks became more specific.²⁴

The 2012 *Alcohol Strategy* announced a review of the guidelines, under the leadership of Dame Sally Davies, England's Chief Medical Officer.³ This will include consideration of how best to promote public understanding of the personal and societal harms associated with excessive drinking. It will consider whether separate guidance is necessary for older people and whether the guidance should cover drinking on a single occasion. At the time of writing, this review is still to report its findings; these are expected to be published in late 2015.²⁵

Unlike the UK, guidance in Canada and Australia includes advice covering both general drinking and specific occasions.^{26,27} Two recent research studies suggest that such an approach better matches the experience of many drinkers, who may drink only once or twice a week and consequently do not feel that advice on regular drinking is relevant to them. In addition, guidelines that focus on actual drinks rather than units are likely to better match the ways in which adults monitor their alcohol consumption.^{28,29}

8.2 Methods and definitions

8.2.1 Methods

The Health Survey for England (HSE) has asked about drinking alcohol since its inception in 1991. Until 1997, drinking was measured using a series of questions that, for each type of drink, recorded the frequency of drinking within the last 12 months and the usual amount drunk on any single day. This information was combined to calculate average weekly consumption (known as the 'quantity-frequency' method of measuring alcohol consumption).^{30,31}

In 1998, questions were introduced about the maximum amount of alcohol consumed on

any day in the previous week. These reflected changes in government guidelines, specifically the move from recommended limits for weekly consumption to those based on daily consumption, and have been used in each HSE year since then. The quantity-frequency questions were dropped from the questionnaire from 2003, but were reinstated in 2011.

In 2014, the HSE questionnaire covered the following areas:

- Frequency of drinking in the last 12 months (including those who never drink)
- For those who drank in the last 12 months, the frequency of drinking different types of drink and the amounts of each drunk on a typical day (providing average weekly consumption)
- Number of drinking days in the last week
- For those who drank in the last week, the amounts of different types of alcohol drunk on the day they drank most ('maximum amount drunk on any day in the last week').

Information on drinking alcohol is generally collected from adults as part of the main survey interview. In 2014, as in previous years, there were two exceptions to this, designed to provide greater privacy for younger participants. Teenagers aged 16 and 17, below the legal age for buying alcohol, were asked to fill in a self-completion questionnaire covering smoking and drinking; young adults aged 18-24 were offered this questionnaire as an alternative to the interview.³²

8.2.2 Measuring alcohol intake

Alcohol consumption is reported in terms of units of alcohol; one unit of alcohol is 10ml by volume of pure alcohol.

The method used by the HSE to convert drinks to units remained essentially unchanged from 1991 until 2005. The assumptions were similar to those which have been used by other major surveys since they were introduced by the General Household Survey (GHS) in 1990.³³ However, in the same way that the original health promotion advice about alcoholic drinks had become out of date as the drinking environment changed (see Section 8.1.2), it became clear that the assumptions about the strength of drinks and standard glass sizes were no longer valid. In response, changes were made from 2006 onwards to the way the HSE and other surveys estimate alcohol consumption.^{30,34,35}

In 2007, the questions about the quantities of wine drunk were revised from the previous format which measured consumption by the number of glasses drunk, with no definition of glass size. The new format asked separately about large (250ml), medium (175ml) and small (125ml) glasses, and also included the option of specifying the quantity of wine drunk in bottles or fractions of a bottle; a bottle was treated as the equivalent of six small (125ml) glasses.

Table 8A below shows the conversion factors used in this report; drinks other than wine are the same as the revised unit measures used since 2006.³⁴ In 2006, the unit conversion for a glass of wine (size unspecified) was two units (revised from one unit in previous years), and the different assumptions for different glass sizes were introduced from 2007. Those who drank bottled or canned beer, lager, stout or cider were asked in detail about what they drank, and this information was used to estimate the amount in pints.³⁶

8.2.3 Definitions

This chapter reports on the following measures of consumption:

- the average amount usually drunk in a week
- the maximum amount drunk on any day in the last week.

The current NHS guidelines for sensible drinking are described in Section 8.1.2. In this chapter, measures of usual weekly consumption are presented in line with the guidelines as 'lower risk' (up to 21 units for men, up to 14 units for women), 'increasing risk' (above 21 units for men, above 14 units for women) and 'higher risk' (above 50 units a week for men, above 35 units for women). The weekly categories are approximate only and do not take

Table 8A		
Conversion factors for estimating alcohol content of drinks		
Type of drink	Measure	Units of alcohol
Normal strength beer, lager, stout, cider, shandy (less than 6% ABV)	Pint	2
	Can or bottle	Amount in pints multiplied by 2.5
	Small cans (size unknown)	1.5
	Large cans or bottles (size unknown)	2
Strong beer, lager, stout, cider (6% ABV or more)	Pint	4
	Can or bottle	Amount in pints multiplied by 4
	Small cans (size unknown)	2
	Large cans or bottles (size unknown)	3
Wine	Small glass (125ml)	1.5
	Medium glass (175ml)	2
	Large glass (250ml)	3
	Bottle	9
Spirits and liqueurs	Glass (single measure)	1
Sherry, martini and other fortified wines	Glass	1
Alcopops	Small can or bottle	1.5

into account varying patterns of consumption, for example on different days of the week or at different times of year. By definition they cover a 'typical' day, and therefore do not reflect occasions when consumption might be higher than usual (for instance holidays, or celebrations such as parties, weddings, Christmas).

There are currently no recommended limits to daily consumption. The NHS recommends that men should not regularly drink more than 3 to 4 units a day and women should not regularly drink more than 2 to 3 units a day, with 'regularly' defined as every day or most days of the week. This report looks at the proportion of adults drinking more than these levels on their heaviest drinking day in the past week, and also the proportion drinking more than double these levels, and does not take into account how often they drink these amounts.

8.2.4 A note on the analysis

As well as analysing drinking patterns by age and sex, this chapter examines differences according to region, equivalised household income, area deprivation and ethnicity. For each of these characteristics, the age profile differs between groups. To control for this, tables based on each of these characteristics show age-standardised estimates, and discussions of differences between groups take this into account.

8.3 Frequency of drinking alcohol

82% of adults said that they drank alcohol and had done so in the last 12 months. Men were more likely than women to do so (85% and 79% respectively).

Among men, the proportions who had drunk alcohol in the last 12 months were lowest for those aged 16-24 and over 85, and at consistently higher levels between the ages of 25 and 84, as shown in Figure 8A. Among women, there was a different pattern, with the proportions who drank alcohol at similar levels between the ages of 16 and 44, highest between the ages of 45 and 54, and thereafter declining steadily with age.

Men were more likely than women to drink once a week or more, as Figure 8A shows.

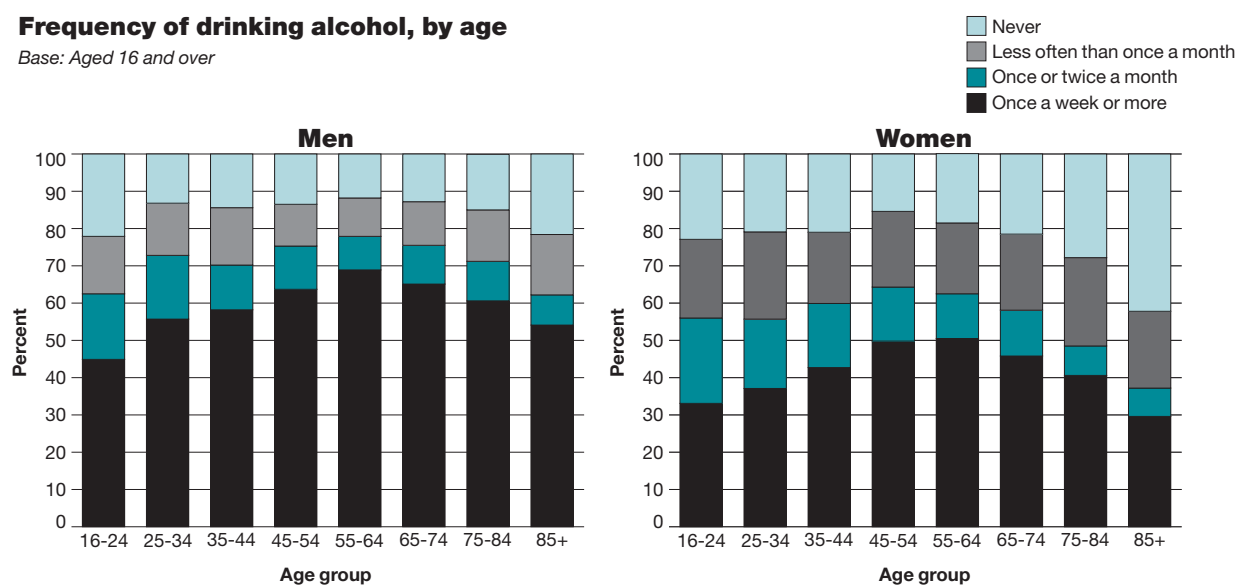
Among both men and women, the proportions who drank at least once a week increased with age from 16 to 64, and then declined.

Table 8.1, Figure 8A

Figure 8A

Frequency of drinking alcohol, by age

Base: Aged 16 and over



8.4 Estimated weekly consumption of alcohol

8.4.1 Estimated weekly consumption, by age and sex

The method used to estimate weekly consumption among adults is summarised in Section 8.2 above. These estimates are based on average consumption across the year and do not represent consumption in any specific week.

15% of men and 21% of women were non-drinkers. 63% of men and 62% of women drank at levels considered to be at lower risk of alcohol-related harm: that is 21 units or less per week for men and 14 units or less for women. The remaining 22% of men and 16% of women drank more than this, including 17% of men and 12% of women who drank at increasing risk levels, and 5% of men and 4% of women who drank at higher risk levels (more than 50 units a week for men, more than 35 units for women).

Alcohol consumption varied with age (see Figure 8B). Among men, the prevalence of drinking more than 21 units a week increased with age and was most common among men aged 65-74, 30% of whom drank at this level. Among women, the proportion who drank more than 14 units a week declined between the ages of 25 and 44, and was highest among women aged 55-64 (22%). Drinking at these levels declined after the age of 75 among men and 65 among women.

Increasing risk drinking and higher risk drinking each followed similar age patterns for men and women.

Weekly alcohol consumption between 2011 and 2014, analysed by age and sex, is presented in *Health Survey for England 2014 – Trend Tables*.³⁷ **Tables 8.2, 8.3, Figure 8B**

8.4.2 Estimated weekly consumption, by region and sex

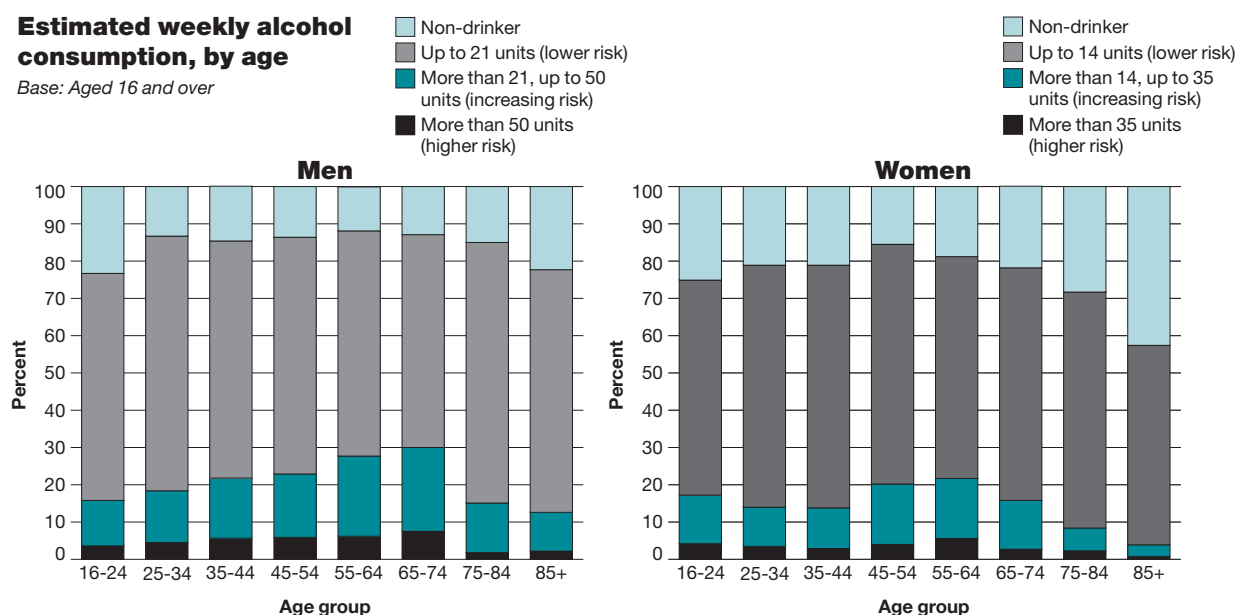
Regional data are shown in the tables both as observed and age-standardised estimates. The findings by region discussed in this section and elsewhere in the chapter are based on age-standardised results.

The proportion of adults who drank alcohol varied across regions. London had the lowest proportion of drinkers; 77% of men and 67% of women. Once age was taken into account, the highest proportion of male drinkers was in the South West (92%) and the highest proportion of female drinkers was in the East of England (86%).

Figure 8B

Estimated weekly alcohol consumption, by age

Base: Aged 16 and over



Alcohol consumption varied between regions, as shown in Figure 8C. Among men, the proportions who drank more than 21 units a week were highest in Yorkshire and the Humber (26%), South West (25%) and North East (24%), and lowest in the East Midlands and the East of England (both 19%). Among women, the proportions who drank more than 14 units a week were highest in the North East and South West (20%) and Yorkshire and the Humber (19%), and lowest in the West Midlands and London (both 13%). The variation was accounted for by differences in the proportions drinking at increasing risk; there was no statistically significant variation between regions in the proportions of men and women whose weekly alcohol consumption was at higher risk levels.

Table 8.4, Figure 8C

8.4.3 Estimated weekly consumption, by equivalised household income and sex

The proportions of men and women who had not drunk alcohol in the last year were higher in lower-income households, as shown in Figure 8D. Men and women in better-off households were more likely to drink above 21 or 14 units respectively. This variation was accounted for by differences in the proportions drinking at increasing risk; there was no difference according to income in the proportions drinking at higher risk levels.

Table 8.5, Figure 8D

8.4.4 Estimated weekly consumption by Index of Multiple Deprivation (IMD) and sex

Following a similar pattern to income, the proportions of non-drinkers among men and women increased as neighbourhood deprivation increased (from 7% of men and 14% of women in the least deprived quintile to 24% and 34% respectively in the most deprived).

The proportions of men who drank more than 21 units a week and women who drank more than 14 units a week were generally higher in less deprived areas, although this was not a straightforwardly linear relationship. The proportion of men who drank at these levels was between 23% and 25% in the least deprived three quintiles and 19% in the two most deprived quintiles. Among women, drinking at these levels decreased from 21% in the least deprived quintile to 12% in the most deprived quintile. This variation was accounted for by differences in the proportions drinking at increasing risk; there was no difference according to income in the proportions drinking at higher risk levels.

Table 8.6

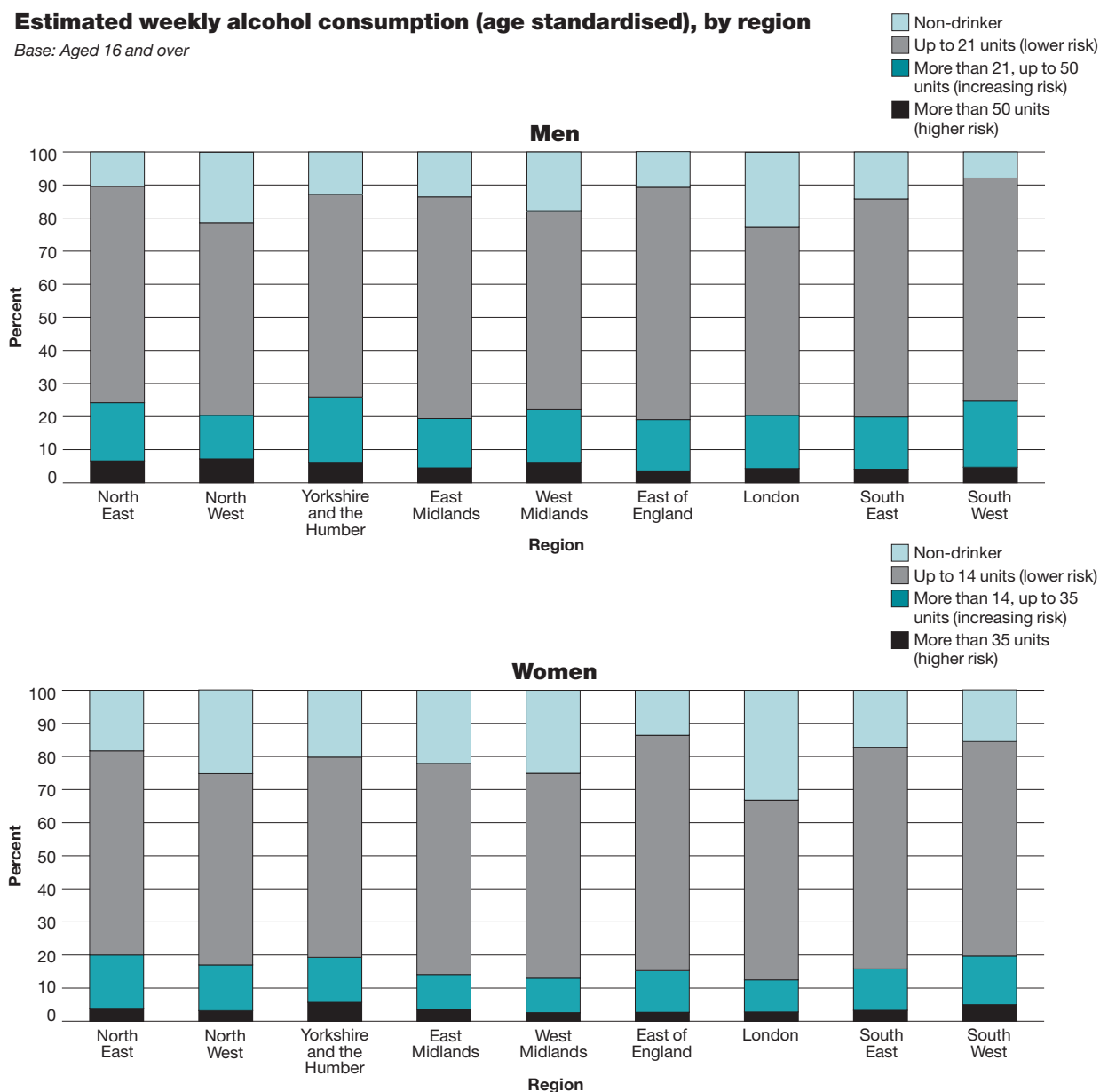
8.4.5 Estimated weekly consumption, by ethnicity and sex

Between 2012 and 2014, the HSE samples included 11% of men and women aged 16 and over who described themselves as coming from a minority ethnic group.³⁸ Ethnicity is presented here in five broad categories: White, Black, Asian, Mixed or multiple

Figure 8C

Estimated weekly alcohol consumption (age standardised), by region

Base: Aged 16 and over



backgrounds, and other ethnicities. The 'other' category is small and likely to be composed of individuals from a variety of backgrounds, so has not been included in the comparisons below. Data from three survey years (2012 to 2014) have been combined to ensure that the bases for each broad group were of sufficient size to allow meaningful analysis. To account for different age profiles, these data have been age-standardised.

The proportions of drinkers varied considerably between these groups, as Figure 8E shows. White men and women were considerably more likely to drink alcohol than were men and women in other groups. In particular, a majority of Asian men and women did not drink alcohol. Similarly, the proportion of White men who drank more than 21 units a week was higher than the proportions of men in other groups, and the same was true for women who drank more than 14 units a week.

Table 8.7, Figure 8E

Figure 8D

Estimated weekly alcohol consumption (age standardised), by equivalised household income

Base: Aged 16 and over

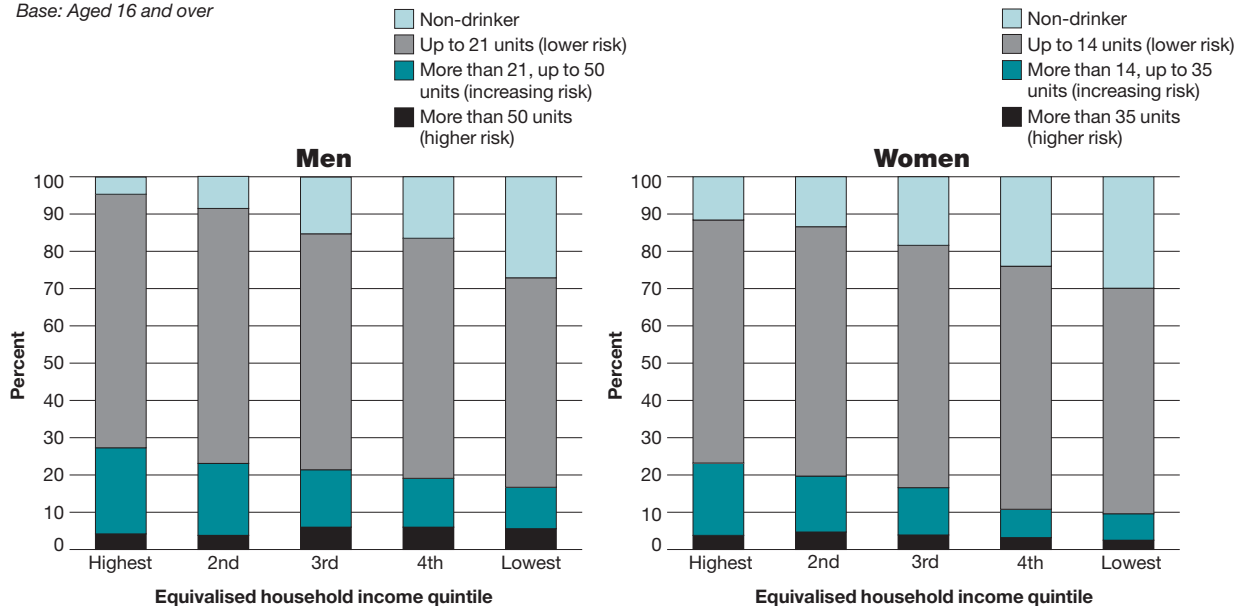
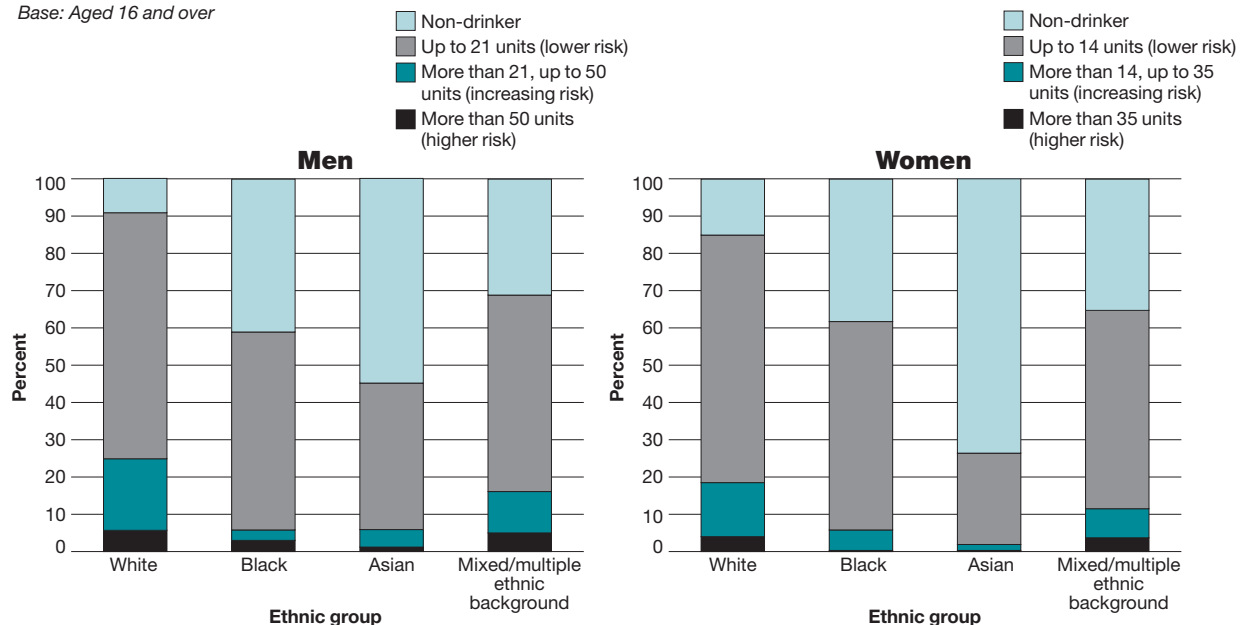


Figure 8E

Estimated weekly alcohol consumption (age standardised), by ethnic group

Base: Aged 16 and over



8.5 Factors associated with drinking at increasing risk or higher risk levels

The preceding sections have examined the relationships between drinking at levels of increasing risk or higher risk and region, household income, area deprivation and ethnicity separately. For each of these analyses, sex and age have been taken into account, but not other potentially related factors, for example household income when looking at area deprivation, or region when looking at ethnicity.

In order to account for the different factors that are associated with adults' alcohol consumption, multivariate logistical regression models were constructed for men and women, each with age, region, household income, IMD and ethnicity as independent

variables. The outcome variables combines drinking at increasing risk or higher risk levels (more than 21 units a week for men, more than 14 units a week for women), as opposed to not drinking or drinking at lower risk levels.

Variations in the likelihood of increasing risk or higher risk drinking are compared with a reference category and differences are expressed as odds ratios. An odds ratio of 1 indicates no difference; odds ratios between 0 and 1 indicate a lower likelihood and odds ratios above 1 indicate a greater likelihood. The 95% confidence intervals are shown; if the confidence interval for a category does not include 1.0, the difference from the reference category for the given category is statistically significant. For further information about logistical regression, see *Volume 2, Methods and documentation*, Section 8.7.³⁹

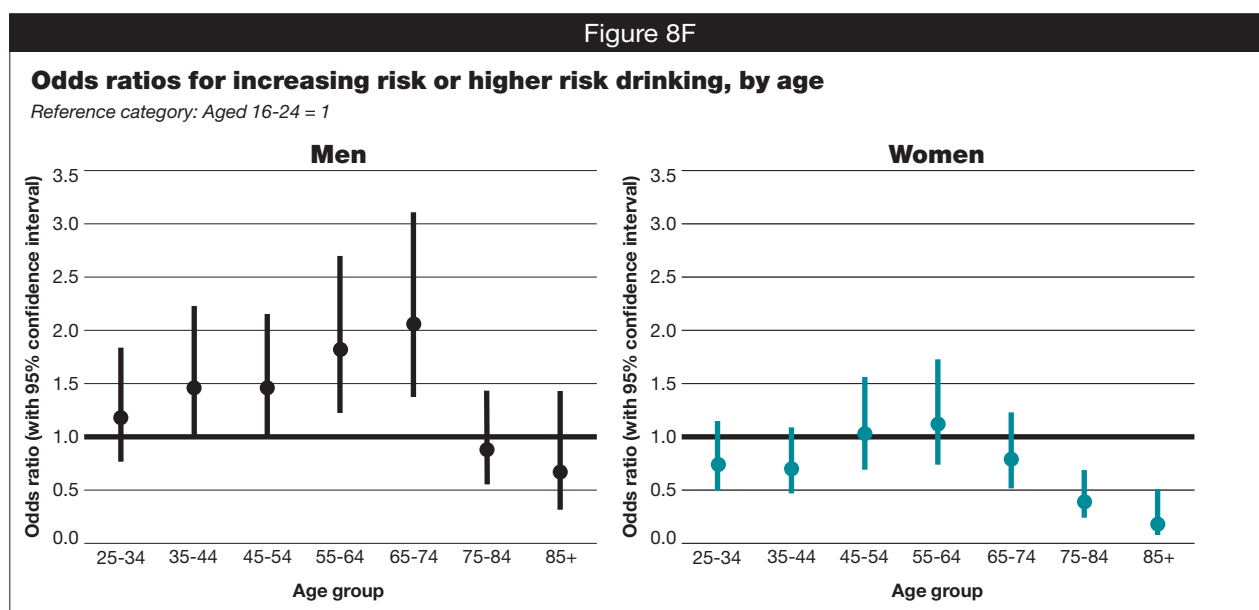
Once other factors in the model were taken into account, age, household income and ethnicity were statistically significantly related to the likelihood of drinking at levels of increasing risk or higher risk for both men and women. Region and area deprivation were not statistically significant.⁴⁰

For age, there were different patterns of risk for men and women. Compared with men aged 16-24, the odds of being at increasing risk or higher risk were higher for men aged 55-74. For women, the odds of increasing risk or higher risk drinking from the age of 75 were different, and lower, compared with women aged 16-24. Other differences in odds across age groups were not statistically significant.

Lower income was associated with reduced odds of increasing risk or higher risk drinking for men and women. For women this association was stronger than for men.

Among both men and women, ethnicity was associated with the likelihood of increasing risk or higher risk drinking. Specifically, Black and Asian men and women had reduced odds of drinking at this level compared with their White counterparts.

Table 8.8, Figures 8F-8H

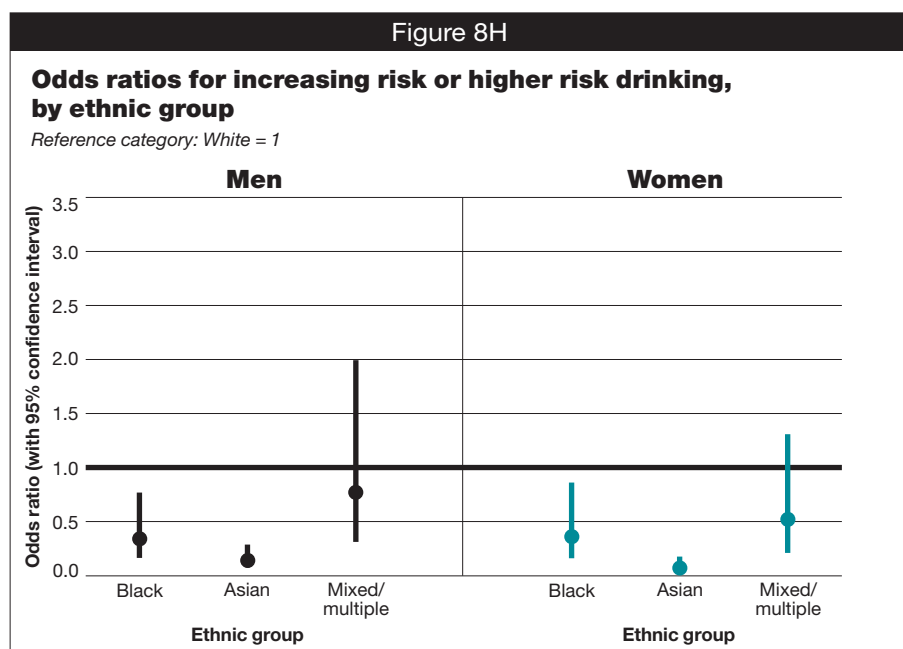
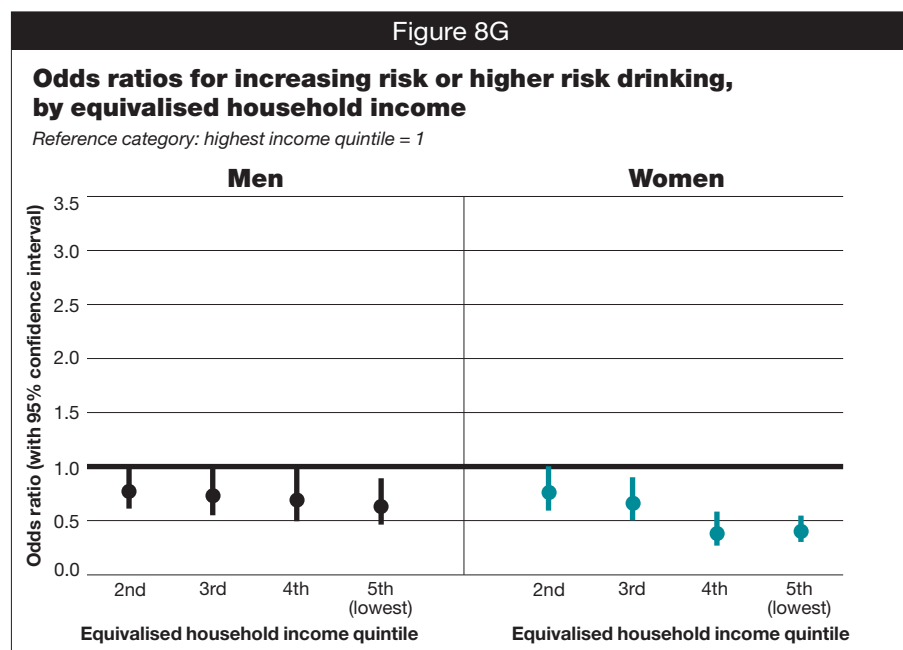


8.6 Alcohol consumption in the last week

8.6.1 The number of drinking days in the last week, by age and sex

65% of men and 51% of women had drunk alcohol in the last week, including 17% of men and 9% of women who drank on five or more days in the last week.

Figure 8I shows the pattern by age. Among men, the proportion that drank in the last week increased with age and was highest among those aged 55-64. From the age of 65, the proportion that drank in the last week declined with increasing age. Among women, there



was a similar pattern, with the proportion that had drunk alcohol in the last week increasing with age, reaching its maximum among women aged between 45 and 64, and declining with age thereafter.

The proportion of men who drank on five or more days in the last week increased with age up to the age of 64, and then varied with increasing age with no clear pattern. The proportion of women who drank on five or more days increased with age, levelling off among women aged 65 and over.

Table 8.9, Figure 8I

8.6.2 The number of drinking days in the last week, by equivalised household income

The proportions of men and women who drank alcohol in the last week increased with household income, as shown in Figure 8J. The proportions who drank on five or more days in the last week, among both men and women was highest in households in the highest income quintile and lowest in the lowest quintile, but at similar levels in the three central quintiles.

Table 8.10, Figure 8J

Figure 8I

Alcohol consumption in the last week, by age

Base: Aged 16 and over

■ Drank on five or more days in the last week
 ■ Drank on one to four days in the last week

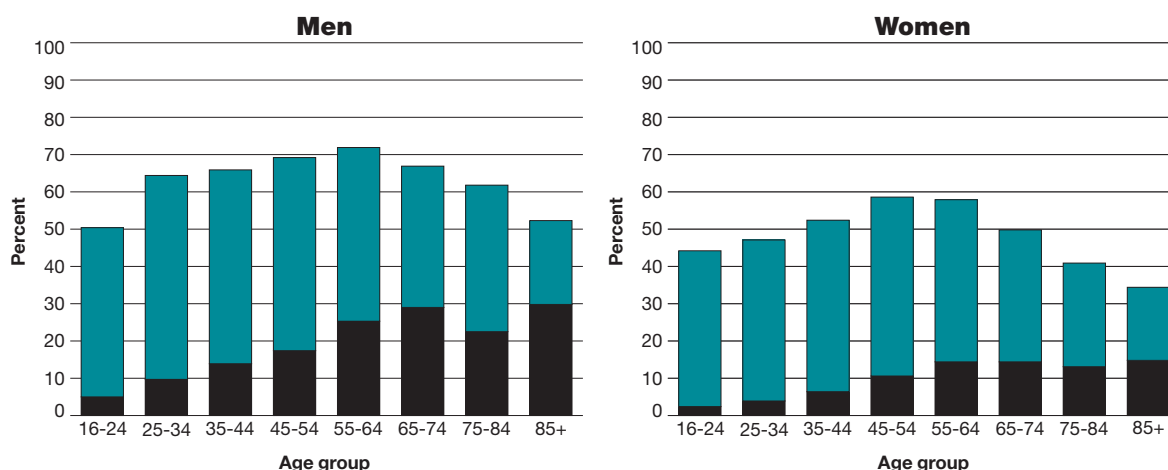
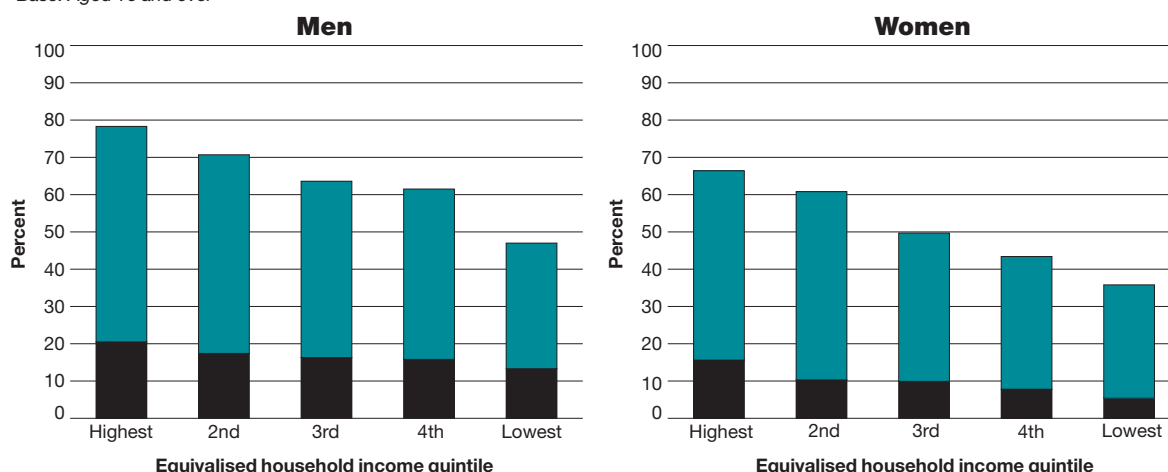


Figure 8J

Drinking alcohol in the last week (age standardised), by equivalised household income

Base: Aged 16 and over

■ Drank on five or more days in the last week
 ■ Drank on one to four days in the last week

**8.6.3 The number of drinking days in the last week, by Index of Multiple Deprivation**

Patterns according to area deprivation were broadly similar to those for income. Men and women were more likely to have drunk alcohol in the last week if they lived in a less deprived area (73-74% of men and 57-58% of women in the two least deprived quintiles, 51% and 39% respectively in the most deprived) The proportions of men and women who had drunk alcohol on five or more days in the last week were higher among those in the two least deprived quintiles (19-20% of men and 11% of women) compared with those living in areas with higher levels of deprivation (14% of men and 5-8% of women).

Table 8.11

8.6.4 The maximum amount drunk on at least one day in the last week, by age and sex

Official guidelines currently recommend that men should not regularly consume more than 4 units of alcohol and women more than 3 units in a single day (see Section 8.1.2). 'Regularly' is defined as every day or most days of the week. Regular daily consumption above these levels is defined as increasing risk drinking. Regular daily consumption of more than twice these amounts (8 units for men, 6 units for women) is considered to be higher risk drinking. This analysis focuses on the maximum amount of alcohol consumed on any single day in the last week and does not directly take into account whether this amount was drunk regularly; this is discussed in Section 8.7.1.

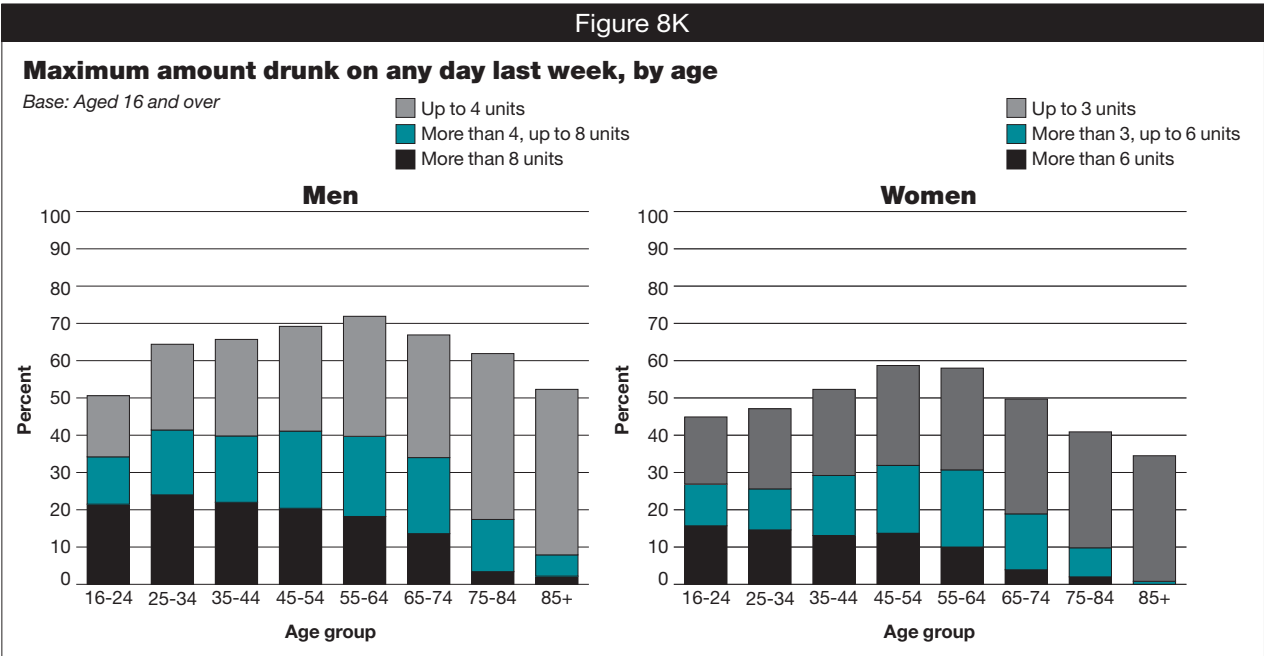
Maximum alcohol consumption on any day in the last week between 1998 and 2014, analysed by age and sex, is presented in *Health Survey for England 2014 – Trend Tables*.³⁷

65% of men drank alcohol in the last week, including 37% who drank more than 4 units and 19% who drank more than 8 units on at least one day. 51% of women drank alcohol in the last week, and this included 25% of women who drank more than 3 units and 11% who drank more than 6 units on at least one day. Slightly more men than women drank in the last week but did not exceed these amounts on any single day (28% and 25% respectively).

So far this section has looked at all adults. The remainder of the section focuses on men and women who had drunk alcohol in the last week. Within this group, 57% of men and 50% of women had drunk more than 4 and 3 units respectively on at least one day. This includes 29% of men and 22% of women whose alcohol intake had exceeded 8 units (men) or 6 units (women) on at least one day. So, although the thresholds are lower for women than for men, men were more likely than women to have exceeded them.

Among those who had drunk alcohol in the last week, the proportions of men who had drunk no more than 4 units and women who had drunk no more than 3 units on any day that they did drink increased with age. Conversely, younger men and women were more likely to have drunk more than 4 or 3 units respectively on at least one day. In particular, the proportions who drank more than twice these levels declined steeply with age.⁴¹

Tables 8.12, 8.13, Figures 8K, 8L



8.6.5 The maximum amount drunk on at least one day in the last week, by region

Among men and women who had drunk alcohol in the last week, there were variations across regions in the proportions of men who drank more than 4 units and women who drank more than 3 units on at least one day in the previous week. Among men, the proportion was highest in London,⁴² the North East and the North West (63-64%), lowest in the East Midlands and the South East (52%). Among women, the proportion was highest in the North East (65%), lowest in the East Midlands and the South East (43-44%). (All estimates in this section are age-standardised.)

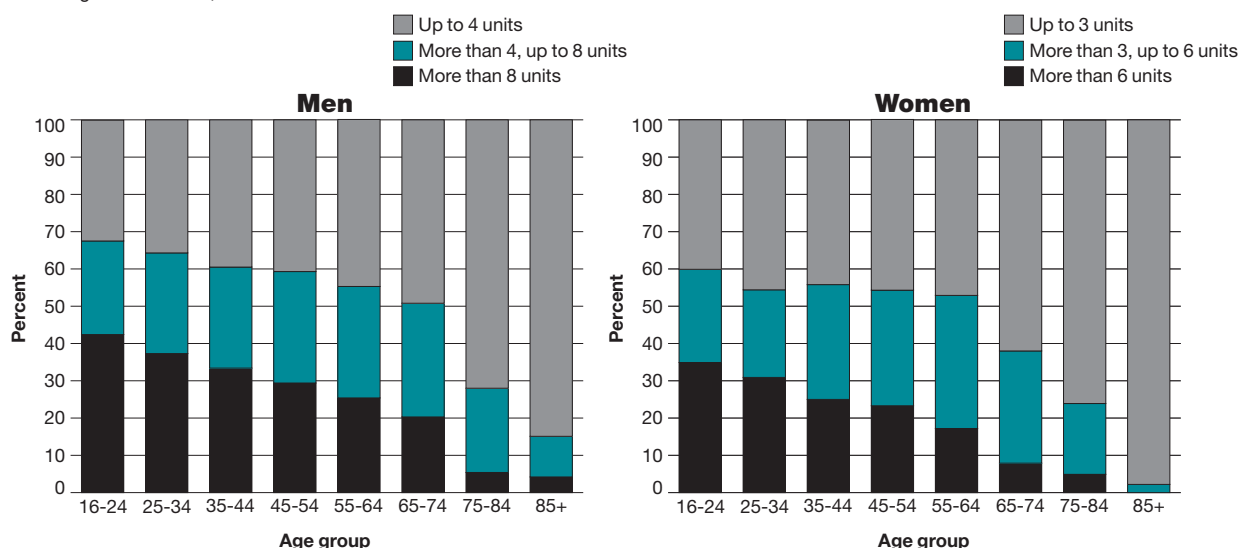
There was a similar pattern across regions in the proportions of men who had drunk at twice these levels on a single day.

Table 8.14

8.6.6 The maximum amount drunk on at least one day in the last week, by equivalised household income

This section is based on men and women who drank in the last week; as Section 8.4.3 shows, this included a higher proportion of men and women in higher income households than in lower income households.

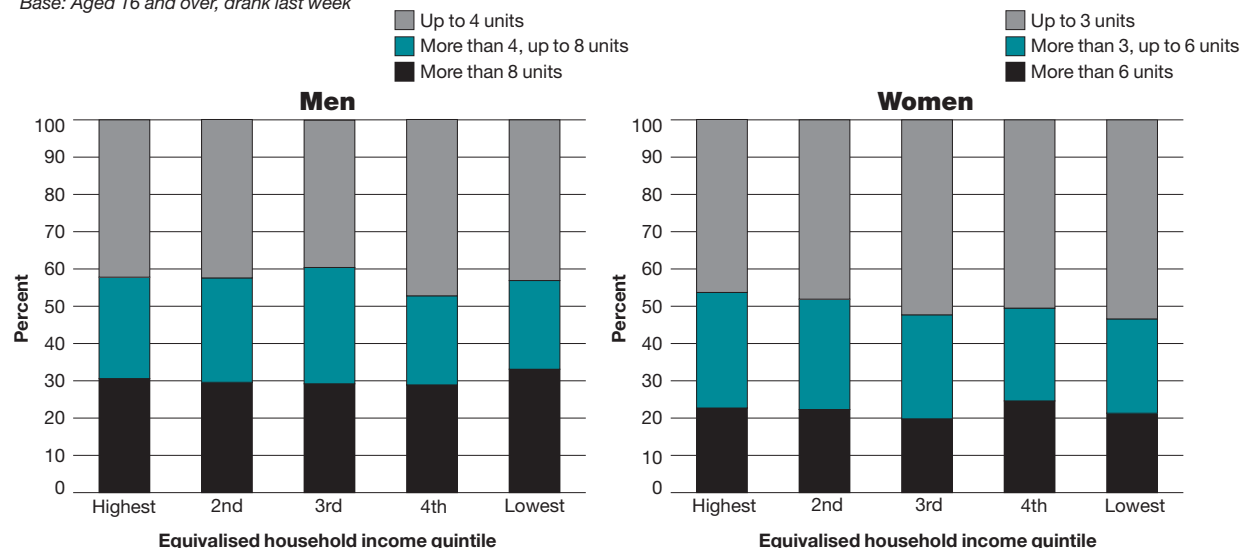
Figure 8L

Maximum amount drunk on any day last week among adults who drank last week, by age*Base: Aged 16 and over, drank alcohol last week*

For adults who had drunk alcohol in the last week, there were differences by household income in the likelihood of drinking more than 4 units (men) or 3 units (women) on at least one day, and also for drinking twice these amounts in a day (see Figure 8M). Among women, drinking more than 3 units in a day was most common in the highest income quintile, least common in the lowest income quintile. Otherwise, there was no obvious pattern in the way drinking at above these levels varied according to income.

Table 8.15, Figure 8M

Figure 8M

Maximum amount drunk on any day last week among adults who drank last week (age standardised), by equivalised household income*Base: Aged 16 and over, drank last week***8.6.7 The maximum amount drunk on at least one day in the last week, by Index of Multiple Deprivation**

This section is based on men and women who drank in the last week; as Section 8.4.4 shows, this varied according to the level of neighbourhood deprivation, so that adults in less deprived areas were more likely to have drunk alcohol in the last week.

Among men who had drunk alcohol in the last week, the proportion that drank more than 4 units on at least one day increased as area deprivation increased (from 53% in the least deprived to 66% in the most deprived quintile). The pattern was less clear for women

drinking more than 3 units, although for both men and women, the likelihood of drinking at this level was highest in the most deprived neighbourhoods (54% in the most deprived, 45-51% in other quintiles).

The relationship between area deprivation and the proportions of men and women who had drunk more than 8 and 6 units respectively on a single day in the last week was not statistically significant.

Tables 8.16

8.7 Discussion: how well do surveys measure alcohol consumption?

8.7.1 Background

Producers and users of surveys of alcohol consumption in the United Kingdom have long been aware that the amount of alcohol that is sold in the UK, as measured by taxation figures, is significantly higher than that measured by household surveys such as the HSE. In 2001, it was estimated that surveys in the UK recorded between 55% and 60% of consumption based on actual sales.⁴³ Other sources suggest that the gap may be wider.²⁹

There are a number of explanations to account for this discrepancy. Some are beyond the scope of surveys, for example alcohol that is bought but not consumed, or bought for export. It is likely that these are to some extent compensated for by similar factors that lead to under-estimation; for example, personal imports, home brewed alcohol.

Some populations are not covered by surveys such as the HSE. This includes (for the purposes of this analysis) children aged 15 and under, as well as adults not living in private households. The latter group is likely to include a variety of groups with non-typical levels of alcohol consumption, including students, adults in social care, those in hostel accommodation, and the homeless. Some groups who are likely to drink more, although eligible to take part in surveys, may be harder to reach, for example, young men.⁴⁴ Less systematically, heavy drinkers may tend to live lifestyles that make them harder to contact and to persuade to take part in a health-related survey.

Section 8.2.2 discussed changes in the way actual drinks have been converted into units of alcohol, including the revisions to the methodology applied from 2006 onwards.³¹ These conversion methods have been acknowledged to underestimate the size of drinks poured in informal settings. In addition, without detailed information, the ranges of strengths of beers, ciders and wines are not easy to represent.

8.7.2 Accounting for the 'missing units'

Recent studies have focused on methods of data collection and the questions used to gather data on alcohol consumption. As described in Section 8.2.1, the HSE uses two measures of consumption. The quantity-frequency method estimates consumption by collecting the amounts and frequency of drinking different types of alcoholic drinks in the last 12 months. It produces estimates of weekly consumption, reported above in terms of levels of risk of alcohol-related harm.

Funded by Alcohol Research UK, the Centre for Public Health at Liverpool John Moores University, has reported on a telephone survey of drinking that collected similar data from 6,000 adults on usual consumption. The survey further explored typical and non-typical drinking days, for example special occasions and holidays, as well as periods when individuals drank less than usual. The additional data collected on non-typical drinking increased estimates of weekly alcohol consumption by around 25%, so that larger proportions of men and women were estimated to be drinking at increasing and higher risk. The additional consumption was greatest among groups whose drinking was already assessed at being at higher risk levels.⁹

In 2011, the HSE placed seven-day drinking diaries with adult participants after they had completed the usual interview.⁴⁵ Although the drinking diary measured similar patterns of

drinking to the interview, levels of consumption across the week recorded in the diary were higher.²⁹ Differences between the interview and diary were associated with drinking more frequently, higher alcohol consumption and a more varied pattern of drinking in terms of venues and types of drink consumed. A qualitative follow-up indicated that non-routine drinking, self-perception as a non-frequent drinker, and the mode of completion were also related to discrepancies between the interview and diary. The diary was perceived as more anonymous, encouraging honesty. It could be completed daily, and it also included contextual information about time of day and location; consequently it stimulated more accurate recall.

8.7.3 Measuring 'regular' drinking at increased levels of risk

One additional advantage of the diary was that it covered drinking in detail across a whole week. The current drinking guidelines advise that men should not regularly drink more than 3 to 4 units of alcohol per day, and women should not regularly drink more than 2 to 3 units of alcohol per day. 'Regularly' is defined as most days in the week.²¹ As already noted, the current questions asked in the HSE and other similar surveys record frequency and the maximum quantity drunk on a single day in the last week, but do not allow for an accurate exploration of the proportions drinking above these levels on a regular basis, a key element of the recommendations. The data indicate that the proportions of men and women who drank above these levels on at least one day broadly decreased with age, whereas the proportions who drank on five or more days increased with age; however, there is limited scope to explore whether this implies two distinct drinking patterns, adults who drink a lot, but only once or twice a week, and adults who drink on most days, but generally within recommendations.

As Table 8B shows, the men and women who drank on five or more days in the last week were more likely to exceed 4 units for men and 3 units for women on at least one day. 62% of men and 59% of women who drank on five or more days also drank more than these amounts at least once. However, there is no way of telling whether these individuals drank at consistent levels every day or whether they drank at a high level on one or two days and considerably less the rest of the time.

Table 8B		
Maximum amount drunk on any day in the last week, by number of drinking days and sex		
<i>Base: Aged 16 and over, drank alcohol in the last week</i>		
	1 to 4 days	5 to 7 days
	%	%
Men		
Up to 4 units	45	38
More than 4, up to 8 units	28	27
More than 8 units	27	35
Women		
Up to 3 units	51	41
More than 3, up to 6 units	29	28
More than 6 units	20	31

8.7.4 Advantages of general population surveys

The methods used by the HSE and similar surveys to collect data on alcohol consumption have been applied consistently across surveys for many years. Estimates are based on a relatively small number of questions that can be collected as part of a single wide-ranging survey interview, and so minimise respondent burden and attrition beyond the overall

survey non-response, as well as collecting a very broad range of contextual data, including socio-demographic characteristics, detailed health status and health-related behaviours.

Additional probing for non-typical drinking, though feasible, involves extra time in an already long interview. Diaries involve a commitment of time and effort and have to be returned as well as completed, which places a burden on interviewers and participants, and risks bias if too many participants drop out or fail to return the diary.⁴⁶

As described in Section 8.1.2, current guidance on drinking is under review. If future guidance includes an increased focus on single drinking occasions, the questions about drinking in the last week currently asked by the HSE and similar surveys will deliver valuable information to monitor its impact.

While the HSE and other surveys remain an efficient and effective method of monitoring drinking in the general population, they could be usefully supplemented by additional research. Ten years have elapsed since the current method of converting drinks into units of alcohol was last reviewed. Alternative approaches to collecting drinking data, such as the telephone survey and the diary described above, are likely to be too resource-intensive to conduct on a regular basis, but do provide valuable insights into the gaps in the information provided by regular surveys with a less specialised focus.

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Every day or almost every day: usual day's consumption*7
Five or six days a week: usual day's consumption*5.5
Three or four days a week: usual day's consumption*3.5
Once or twice a week: usual day's consumption*1.5
Once or twice a month: usual day's consumption*0.375
Once every couple of months: usual day's consumption*0.115
Once or twice a year: usual day's consumption*0.029.
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- 36 One pint is equivalent to 0.568 litres.
- 37 www.hscic.gov.uk/pubs/hse2014trend
- 38 Based on unweighted data. After weighting, the proportion was 13% in each year.
- 39 For further information on the methodology used, see Volume 2 of this report.
www.hscic.gov.uk/pubs/hse2014
- 40 The predictive power of the models were relatively low; 24.1% for men and 29.1% for women. The model was very sensitive, so that 99% of men and 98% of women who were either increased or higher risk drinkers were predicted by the model. However, it was not very specific; just 7% of men and 13% of women were correctly identified as not drinking at these levels.
This low predictive power is unsurprising, given that the model is looking at classificatory variables. These do not explain the reasons why individuals drink at levels of increased risk, but are probably related to those reasons. For example age is related to patterns of leisure and socialising, which may

affect alcohol consumption; higher income households have more disposable income to spend on alcohol; adults in many ethnic minorities will have grown up with strong family and cultural norms that forbid alcohol consumption.

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