



Health Survey for England 2017

Adult health related behaviours

Published 4 December 2018

This report provides updates to key statistics and measurements for adults aged 16 and over with commentary on prevalence in 2017 and on trends over time. It looks at health related behaviours for smoking prevalence, alcohol consumption and fruit and vegetable consumption.

Key findings

- Current cigarette smoking among adults has steadily declined between 1993 and 2017 (from 27% to 17%).
- In 2017, 6% of all adults were current users of e-cigarettes (vaping).
- The proportion of both men and women drinking at increased or higher risk of harm (more than 14 units per week) decreased between 2011 and 2017 (from 34% to 28% of men, and from 18% to 14% of women).
- In 2017, 29% of adults were eating the recommended five portions of fruit and vegetables a day.
- In 2017, fewer men than women consumed the recommended five or more portions of fruit and vegetables a day (26% and 32% respectively).

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This report may be of interest to people working in public health, policy officials, commissioners of health and care services and to the public to see the prevalence of drinking alcohol, fruit and vegetable consumption, smoking, exposure to second-hand smoke and intentions to give up smoking.

Introduction

The Health Survey for England is a series of annual surveys designed to measure health and health-related behaviours in adults and children living in private households in England. More information about the survey can be found in the Quick Guide to the Survey and in more detail in the Methods report at <https://digital.nhs.uk/pubs/hse2017>.

This report includes a combination of trend tables and HSE 2017 results on smoking prevalence, alcohol consumption and fruit and vegetable consumption.

About the survey estimates

The Health Survey for England, in common with other surveys, collects information from a sample of the population. The sample is designed to represent the whole population as accurately as possible within practical constraints, such as time and cost. Consequently, statistics based on the survey are estimates, rather than precise figures, and are subject to a margin of error, shown as a 95% confidence interval. For example, the survey estimate might be 24% with a 95% confidence interval of 22% to 26%. A different sample might have given a different estimate, but we expect that the true value of the statistic in the population would be within the range given by the 95% confidence interval in 95 cases out of 100.

Where differences are commented on in this report, these reflect the same degree of certainty that these differences are real, and not just within the margins of sampling error. These differences can be described as statistically significant.¹

Confidence intervals are quoted for key statistics within this report and are also shown in more detail in the Excel tables accompanying this report. Confidence intervals are affected by the size of the sample on which the estimate is based. Generally, the larger the sample, the smaller the confidence interval, and hence the more precise the estimate.

Additional technical information is given in the Appendix to this report.

¹ Statistical significance does not imply substantive importance; differences that are statistically significant are not necessarily meaningful or relevant.

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Main findings

Smoking

- Current cigarette smoking among adults has steadily declined between 1993 and 2017 (from 27% to 17%).
- 6% of all adults were current users of e-cigarettes (vaping).
- 15% of current cigarette smokers were using e-cigarettes.
- Among current cigarette smokers, women were less likely than men to want to give up smoking. 36% of women compared to 34% of men agreed that they either didn't want to stop smoking or they thought they should stop smoking but didn't really want to.
- Younger adults were more likely to be exposed to second hand smoke than older adults. Only 50% of those aged 16 to 24 had reported that they had not been exposed to second hand smoke, compared with 93% of those in the 75+ age group.
- Despite smoking in the workplace being banned in 2007, 8% of adults reported that they have been exposed to other people's smoke at work and this was higher for men (10%) than women (5%).

Alcohol

- In 2017, 82% of adults had drunk alcohol in the last 12 months.
- A minority of adults, 16% of men and 21% of women, had not drunk alcohol in the last 12 months. The majority, 56% of men and 64% of women, drank at levels considered to be at lower risk of alcohol-related harm (up to 14 units). The remaining 28% of men and 14% of women drank over 14 units (increased or higher risk of harm) in a usual week.
- The proportion of both men and women drinking at increased or higher risk of harm (more than 14 units per week) decreased between 2011 and 2017 (from 34% to 28% of men, and from 18% to 14% of women).
- In 2017, among adults who drank alcohol, the average (mean) amount typically drunk in a week was 15.0 units for men, and 8.6 units for women.

Fruit and vegetable consumption

- In 2017, 29% of adults were eating the recommended five portions of fruit and vegetables a day.
- Fewer men than women consumed the recommended five or more portions of fruit and vegetables a day (26% and 32% respectively).

Smoking Prevalence

Introduction

Cigarette smoking in England has been in long-term decline. Since 1998, when *Smoking kills: a White Paper on tobacco* was published,² cigarette smoking prevalence among adults has fallen from 28% to 17%. However, tobacco use remains the leading cause of preventable illness and premature death in England and worldwide.³ Tobacco use contributed to around 20% of deaths in men and 12% of deaths in women aged over 35 in England in 2016.⁴

Smoking is the biggest contributor to health inequalities. It has been estimated that tobacco use accounts for around half of the difference in life expectancy between the richest and poorest groups.⁵ In 2017, around 30% of unemployed people were current smokers compared with 16% of those in employment, according to the 2017 ONS report: *Adult smoking habits in the UK*.⁶

To tackle the health burden related to smoking, a series of laws have come into force in the past 15 years. Tobacco advertising on billboards and in printed publications was banned in 2003.⁷ The legal minimum age to buy tobacco was increased from 16 to 18 in England in October 2007. In addition, tobacco displays at the point of sale have been prohibited in supermarkets and large shops since April 2012 and ceased in small shops from April 2015.⁸

To reduce exposure to the harmful effects of secondhand smoke, a smoke free law was implemented in July 2007, banning smoking in workplaces and enclosed public places.⁹

In 2017, the government published *Towards a smoke-free generation: a tobacco*

² Department of Health. *Smoking kills: a White Paper on tobacco*. DH, London, 1998. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/260754/4177.pdf

³ World Health Organization. *WHO Report on the Global Tobacco Epidemic 2017* WHO, Switzerland, 2017. http://www.who.int/tobacco/global_report/2017/en/

⁴ NHS Digital. *Statistics on Smoking: England, 2018*. NHS Digital, Leeds, 2018. <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-smoking/statistics-on-smoking-england-2018/content>.

⁵ Marmot M, Allen J, Goldblatt P et al. *Fair Society, Healthy Lives: Strategic review of health inequalities in England post-2010*. The Marmot Review, London, 2010. <https://www.gov.uk/dfid-research-outputs/fair-society-healthy-lives-the-marmot-review-strategic-review-of-health-inequalities-in-england-post-2010>

⁶ Office for National Statistics: *Adult smoking habits in the UK: 2017* <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/bulletins/adultsmokinghabitsingreatbritain/2017>

⁷ HM Government. *The Tobacco Advertising and Promotion Act*. Her Majesty's Stationary Office (HMSO), London, 2002. www.legislation.gov.uk/ukpga/2002/36/contents

⁸ Action on Smoking and Health. *Advertising and Promotion*. ASH, London, 2012. www.ash.org.uk/current-policy-issues/advertising-and-promotion

⁹ Bauld L. *The Impact of Smokefree legislation in England: Evidence Review*. Department of Health, London, 2011. www.gov.uk/government/uploads/system/uploads/attachment_data/file/216319/dh_124959.pdf

control plan.¹⁰ This set out a five-year plan to reduce the harms of smoking, including a target to reduce adult smoking to 12% or less by the end of 2022.

Use of e-cigarettes (vaping)

In 2013, all adults were, for the first time in the Health Survey for England (HSE), asked questions on their use of electronic cigarettes¹¹ (also called vaporisers, or vaping).¹² In 2013, 3% of adults were current users of e-cigarettes.

There is a growing consensus that e-cigarettes are safer than tobacco cigarettes, since e-cigarettes contain no tobacco and thus no tar, with some estimating them to be around 95% safer,^{13,14} although the longer-term effects of e-cigarettes have not been established. E-cigarettes may not be totally safe; there is emerging evidence that e-cigarettes emit ultrafine/fine particles in their vapour which can be damaging to the lung.¹⁵ E-cigarettes also contain the chemical propylene glycol, which has been linked to eye, throat and respiratory irritation.¹⁶

The availability of e-cigarettes has given rise to considerable public health debate,¹⁷ including concerns that the co-use of e-cigarettes with tobacco may reinforce the smoking habit, or discourage cessation attempts. There is also concern over the uptake of e-cigarettes by non-smokers. However, this was rare, with 1% of non-smokers having ever used e-cigarettes as reported in HSE 2015.¹⁸ A Cochrane review of studies on e-cigarettes found evidence that e-cigarettes could help smokers quit or reduce tobacco consumption.^{14,19}

In 2017, when these data were collected, the sale of e-cigarettes was largely unregulated.

¹⁰ Department of Health. *Towards a smoke-free generation: a tobacco control plan for England*. DH, London, 2011. www.gov.uk/government/publications/towards-a-smoke-free-generation-tobacco-control-plan-for-england

¹¹ E-cigarettes deliver nicotine that is vaporised and inhaled from a liquid form via a battery-powered device that simulates cigarette smoking. Some are designed to resemble ordinary cigarettes. Once sucked on, a sensor is activated which heats the liquid within the e-cigarette to create a vapour that delivers nicotine to the individual.

¹² E-cigarettes are sometimes referred to as vaporisers or electronic nicotine delivery systems (ENDS).

¹³ Goniewicz M L, Knysak J, Gawron M et al. Levels of selected carcinogens and toxicants in vapour from electronic cigarettes. *Tobacco Control* 2013;**10**:133-139.

¹⁴ McNeill A, Brose LS, Calder R, et al. *E-cigarettes: an evidence update. A report commissioned by Public Health England*. Public Health England, London 2015. www.gov.uk/government/uploads/system/uploads/attachment_data/file/457102/E-cigarettes_an_evidence_update_A_report_commissioned_by_Public_Health_England_FINAL.pdf

¹⁵ Schripp T, Markewitz D, Uhde E et al. *Does e-cigarette consumption cause passive vaping?* *Indoor Air* 2012;**23**:25-31.

¹⁶ Vardavas CI, Anagnostopoulos N, Kougias M et al. Short-term pulmonary effects of using an electronic cigarette: impact on respiratory flow resistance, impedance, and exhaled nitric oxide. *Chest* 2012;**141**:1400-1406.

¹⁷ *Simon Chapman on e-cigarettes: the best and the worst case scenarios for public health*. BMJ Group Blogs, 2014. blogs.bmj.com/bmj/2014/03/14/simon-chapman-on-e-cigarettes-the-best-and-the-worst-case-scenarios-for-public-health/

¹⁸ Health Survey for England 2015 <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/health-survey-for-england-2015>

¹⁹ McRobbie H, Bullen C, Hartmann-Boyce J et al. *Electronic cigarettes for smoking cessation and reduction*. *Cochrane Database of Systematic Reviews* 2014:**12**

Methods

Self-reported data

Questions about cigarette smoking have been asked of adults aged 16 and over as part of the HSE series since its inception in 1991. In 2017, the interview collected information about the use of various tobacco products including cigarettes, cigars and pipes. Those who reported smoking cigarettes were asked to estimate their daily consumption of cigarettes.

The interview also covered participants' current and previous use of nicotine delivery products including nicotine chewing gum, lozenges, mini lozenges, patch, inhaler, inhalator, mouth spray, nasal spray and other non-tobacco nicotine products. Since 2013, information has also been collected on current and previous use of e-cigarettes as well.

All participants aged 16 and over were asked to estimate the total number of hours they were exposed to other people's smoke, and to state the locations where this occurred.

Participants aged 25 and over were asked about their smoking behaviour within the face to face interview.²⁰ For those aged 16 to 17, information about smoking was collected through a self-completion questionnaire, to offer participants more privacy by allowing them to reply without disclosing their smoking behaviour to other household members. At the interviewer's discretion, those aged 18 to 24 could answer the smoking questions either through the face to face interview or through the self-completion questionnaire.

Cotinine

Cotinine is a metabolite of nicotine. Cotinine levels in serum or saliva can provide an objective measure of smoking. It is generally considered to be the most useful of various biological markers that are indicators of personal tobacco use.²¹ When analysed in a specialist laboratory, as is done for HSE, low levels are also a sensitive marker of exposure to other people's smoke.

For this survey, cotinine levels were measured using saliva. As part of the nurse visit, participating adults were asked about their smoking status at the time (which might have changed since the interview), and about use of nicotine delivery products in the last seven days, and were asked to provide a small saliva sample, which was analysed for cotinine.²² An additional weight has been applied to the cotinine data to account for differential non-response to the saliva sample.²²

²⁰ Participants were also asked at the nurse visit about current smoking status and about current use of any nicotine delivery product. Results presented in the tables relating to self-reported smoking status, cigarette consumption, or use of nicotine delivery products are based on the answers given at the initial interview. For tables presenting results on cotinine, current smoking status is based on information given at the nurse visit, since this was when the saliva sample was taken. In these tables, ex-smokers (used to smoke cigarettes regularly) and never smokers (never smoked cigarettes regularly) were distinguished by combining 'non-smokers' at the nurse visit with information on smoking status as reported at the earlier interview.

²¹ Jarvis M, Fidler J, Mindell J et al. Assessing smoking status in children, adolescents and adults: cotinine cutpoints revisited. *Addiction* 2008;**103**:1553-1561.

²² Full details are provided in Health Survey for England 2017 Methods and documentation, available at <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2017>

Definitions

Current smokers

The focus of this report is on cigarette use among adults, and cigar and pipe use are not considered in the definition of a current smoker.

Cotinine thresholds indicative of smoking

Cotinine has a half-life in the body of around 16 to 20 hours, which means that measurement of cotinine will detect regular tobacco use, but not occasional tobacco use if the last occasion was several days ago.²³ As in the HSE 2013 and 2015 reports, a threshold of 12ng/ml has been used as the cotinine cut-point indicative of personal smoking in populations with low smoking prevalence.²⁴

The prevalence of cotinine levels of 12ng/ml or more is shown for men and women to provide an objective measure of smoking in the population, and is analysed by self-reported smoking status. As in previous reports participants using nicotine delivery products were excluded from the definition of a valid cotinine assay when establishing cotinine levels attributable to tobacco smoking.

Exposure to secondhand smoke

Cotinine levels less than 12ng/ml can be indicative of occasional smoking, particularly if the participants reported they smoked cigarettes only occasionally. However, in almost all cases, cotinine levels less than 12ng/ml indicate exposure to environmental tobacco smoke, particularly if the participants reported that they did not currently smoke.^{21,25} Measurement of low levels of cotinine provides a useful measure to monitor levels of exposure to other people's smoke at both the population level and by sub-groups, as the only significant sources of detectable cotinine levels are personal tobacco use, nicotine delivery products, and breathing other people's tobacco smoke.²⁶

²³ Fidler J, Jarvis M, Mindell J et al. *Nicotine intake in English smokers: distribution and demographic correlates*. *Cancer Epidemiology and Biomarkers Prevalence*. 2008;**17**:3331-3336.

²⁴ The previous saliva cotinine threshold of 15ng/ml was established over 20 years ago on a non-representative sample of smokers and non-smokers (source: Jarvis M, Tunstall-Pedoe H, Feyerabend C et al. *Comparison of tests used to distinguish smokers from non-smokers*. *American Journal of Public Health* 1987;**77**:1435-1438). Cotinine cut-points depend on both the level of smoking and of secondhand exposure in the population. They are therefore country specific and need to be re-evaluated as smoking prevalence changes. A reduction in the level of smoking and secondhand exposure was thought to have influenced the reduction in the optimal cut-point to detect personal use of tobacco.

²⁵ Jarvis M, Feyerabend C, Bryant A et al. *Passive smoking in the home: plasma cotinine concentrations in non-smokers with smoking partners*. *Tobacco Control* 2001;**10**:368-374.

²⁶ Jarvis M. *Dietary nicotine: Won't mislead on passive smoking*. *BMJ*. 1994;**308**:61-62.

Self-reported cigarette smoking status by survey year and sex

Current smoking among adults has steadily declined from 27% in 1993 to 17% in 2017. Survey estimates are subject to a margin of error. It is likely that in 2017 the proportion of adults that currently smoke was between 16% and 19%. The proportion of adults that have never regularly smoked cigarettes increased from 46% in 1993 to 57% in 2017 (taking into account the margin of error, in 2017 the proportion of adults that never regularly smoke was between 56% and 59%).

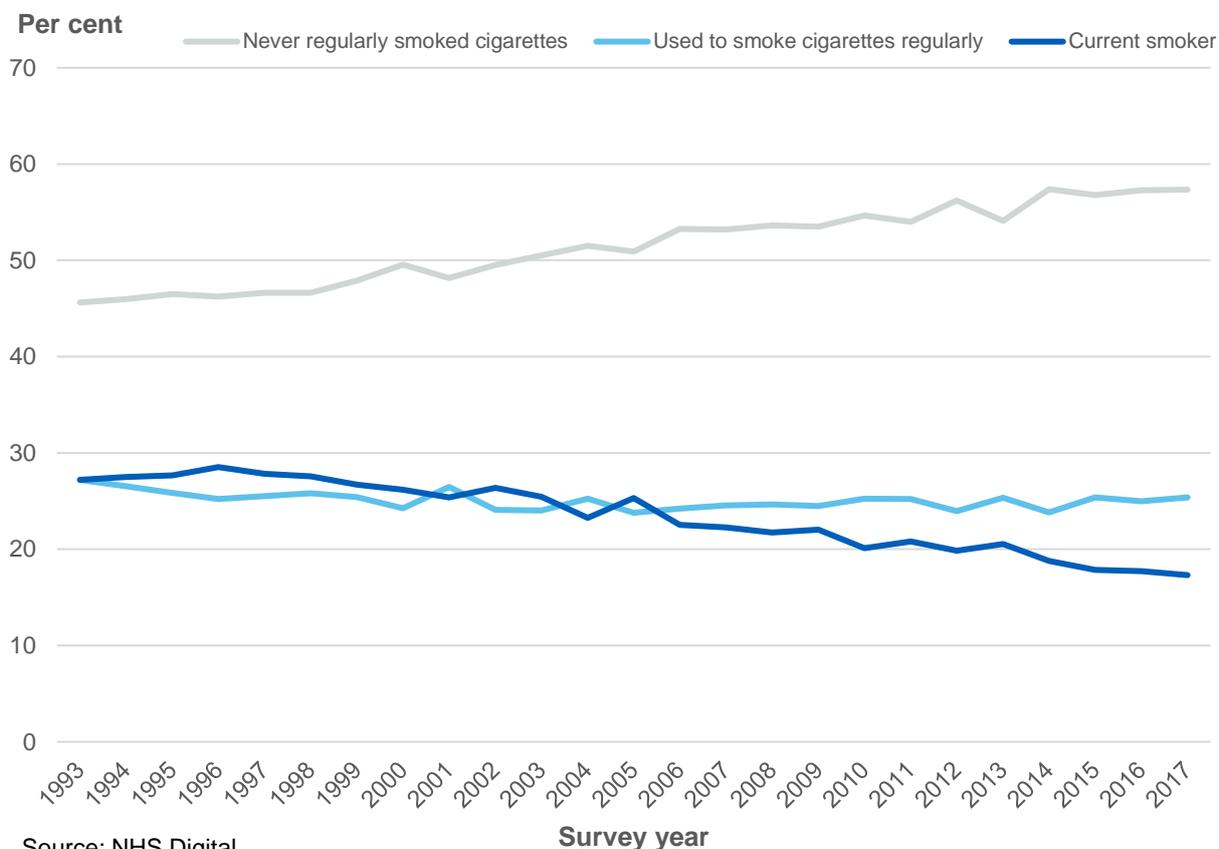
Current smoking among men declined slowly between 1993 and 2006 (from 28% to 24%), and there was little overall change in prevalence between 2006 and 2013. In 2017 current smoking prevalence had fallen further to 19%, continuing the gradual downward trend. The proportion of men who had never smoked regularly increased from 39% in 1993 to 53% in 2017.

The proportion of women who were current smokers decreased from 26% in 1993 to 15% in 2017, while the proportion who had never regularly smoked increased from 52% to 61% in the same period.

Figure 1, Table 1

Figure 1 Self-reported adult smoking status, 1993-2017

Base: Adults aged 16 and over



Self-reported cigarette smoking status, by survey year, age and sex

The prevalence of cigarette smoking has decreased between 1993 and 2017 from 28% to 19% for men and from 26% to 15% for women. There has been a decrease in the prevalence of smoking in all age groups among both men and women.

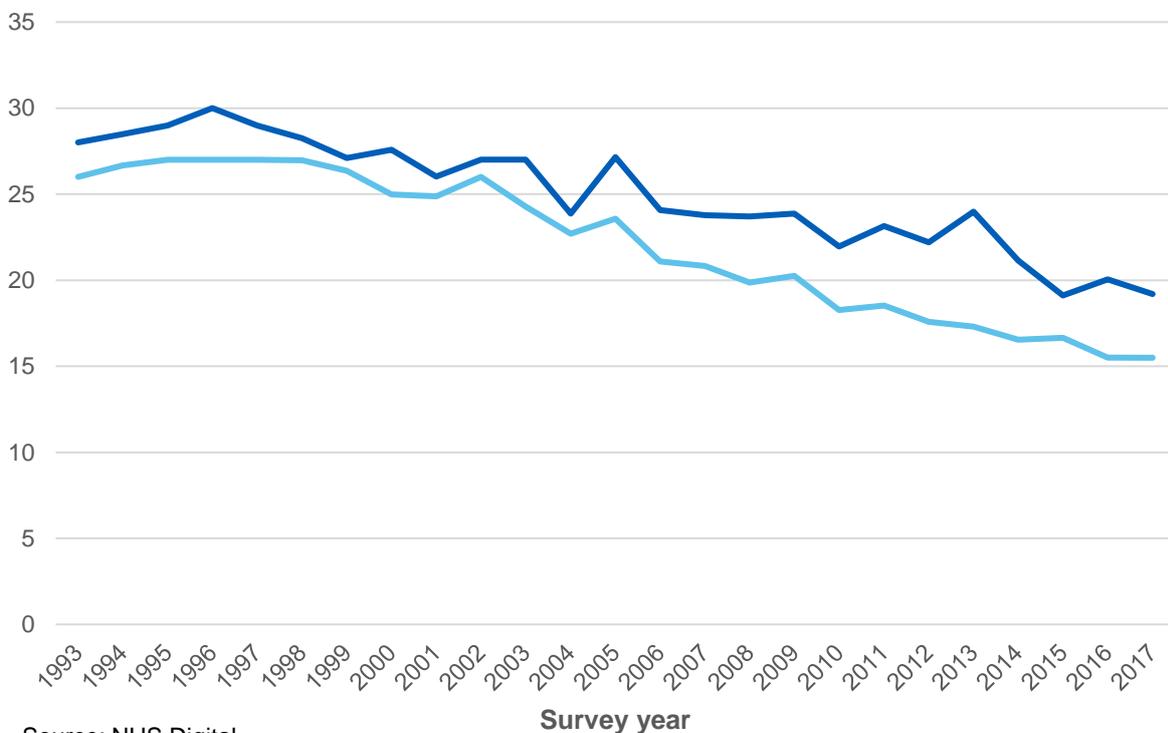
Estimates of the number of adults in the population for self-reported cigarette smoking status from 2003 to 2017 are available in the population number estimates tables.

Figure 2, Table 2

Figure 2 Proportion of adults who currently smoke cigarettes, by sex, 1993-2017

Base: Adults aged 16 and over

Per cent



Source: NHS Digital

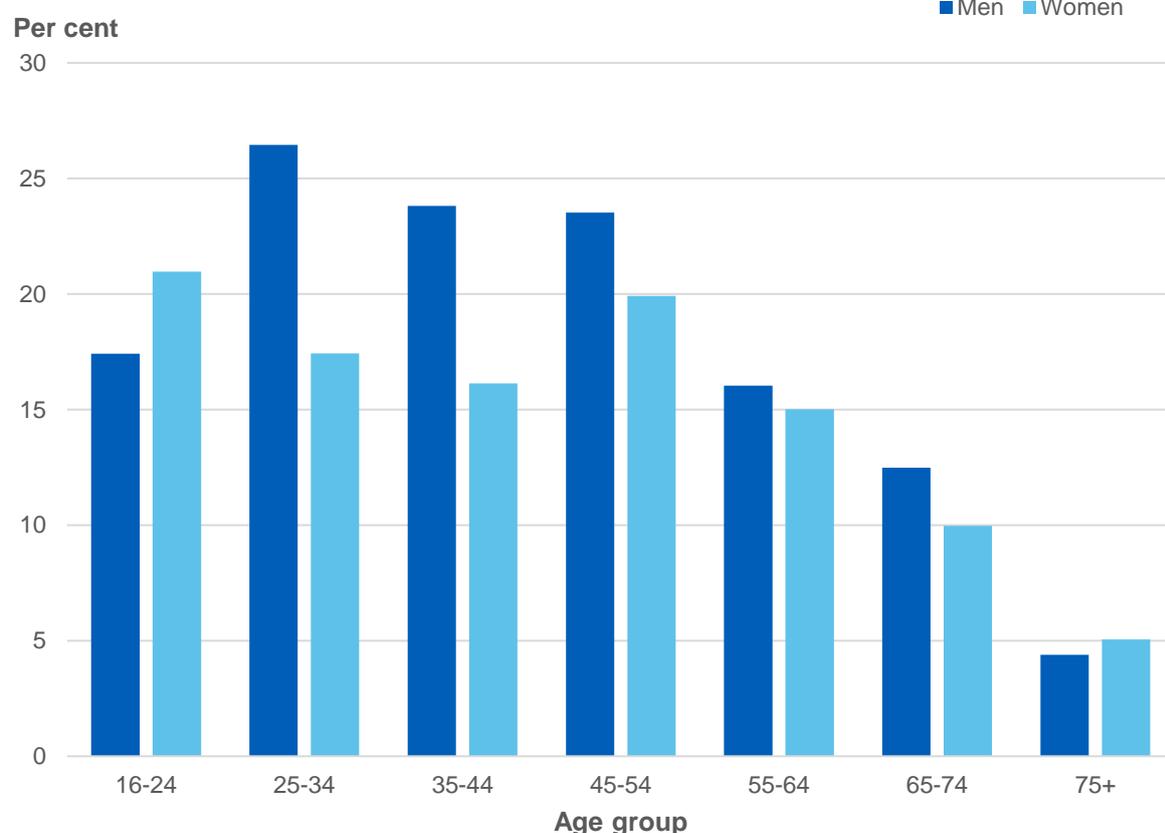
In 2017, the prevalence of adults that currently smoke cigarettes was highest among adults aged 25 to 34 (22%), and 45 to 54 (22%). Adults in the 75+ age group were the least likely to be current smokers (5%).

Among people aged 25 to 34 and 35 to 44, men were more likely than women to currently smoke cigarettes (26% of men aged 25 to 34 compared to 17% of women in that age group and 24% of men aged 35 to 44 compared to 16% of women in that age group).

Figure 3, Table 2

Figure 3 Proportion of adults who currently smoke cigarettes, by age group

Base: Adults aged 16 and over



Source: NHS Digital

Self-reported cigarette consumption by survey year and sex

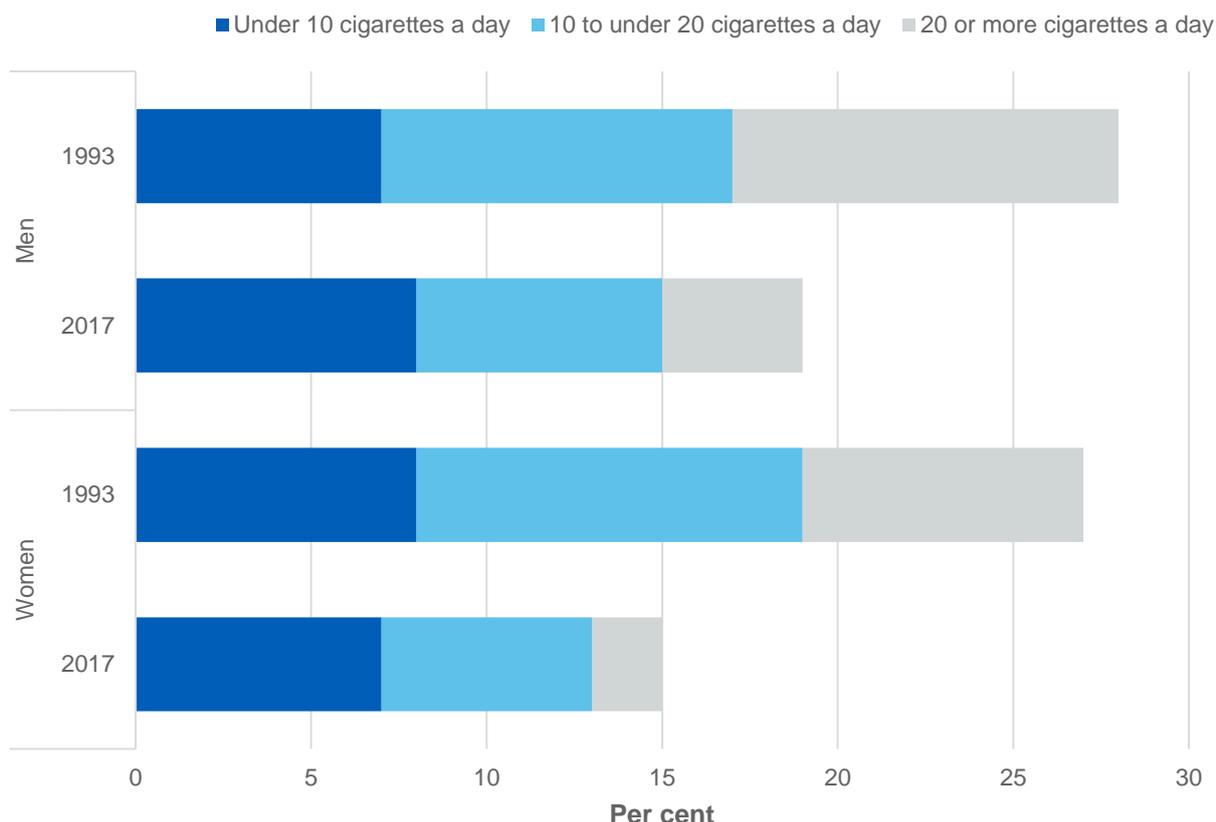
The proportion of men who smoked 20 or more cigarettes per day fell from 11% in 1993 to 4% in 2017, and the proportion who smoked 10 to 19 cigarettes a day also fell from 10% to 7%. The proportion who smoked fewer than 10 cigarettes showed little change over the same period (8% in 2017).

As with men, there were no statistically significant changes in the proportion of women who smoked fewer than 10 cigarettes per day (7% in 2017). However, there was a decrease among women in those who smoked 10 to 19 cigarettes per day (11% in 1993 to 6% in 2017) and in those who smoked 20 or more cigarettes per day (from 8% to 2% over the same time period).

Figure 4, Table 1

Figure 4 Self-reported cigarette consumption, by survey year and sex

Base: Current smokers aged 16 and over



Source: NHS Digital

Self-reported e-cigarette use, by age and sex

6% of all adults were current users of e-cigarettes. This was higher than in HSE 2013, when 3% of adults were current users of e-cigarettes.

Adults in the oldest age group were the least likely to be current users of e-cigarettes (97% of all adults in the 75+ age group had never used e-cigarettes).

Current use of e-cigarettes was highest for men in the 25 to 34 age group (9%) and women in the 45 to 54 and 55 to 64 age groups (7%).

In the younger age groups the prevalence of e-cigarette use among men was almost double that among women (8% of men compared to 4% of women in the 16 to 24 age group and 9% of men compared to 5% of women in the 25 to 34 age group).

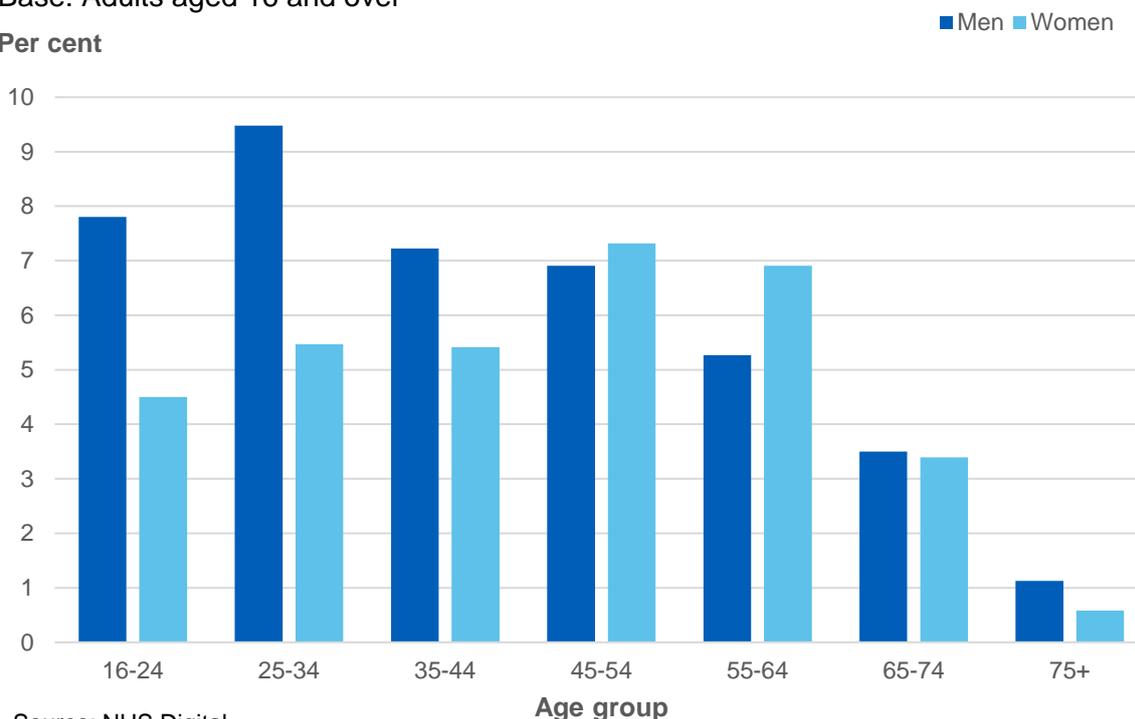
Despite the differences of current e-cigarette use between men and women through the age groups, overall the prevalence was similar; 6% of men and 5% of women.

Figure 5, Table 3

Figure 5 Prevalence of current use of e-cigarettes, by age group and sex

Base: Adults aged 16 and over

Per cent



Source: NHS Digital

Self-reported e-cigarette use (vaping), by cigarette smoking status and sex

The proportion of adults that currently use e-cigarettes was highest among current smokers (15%).

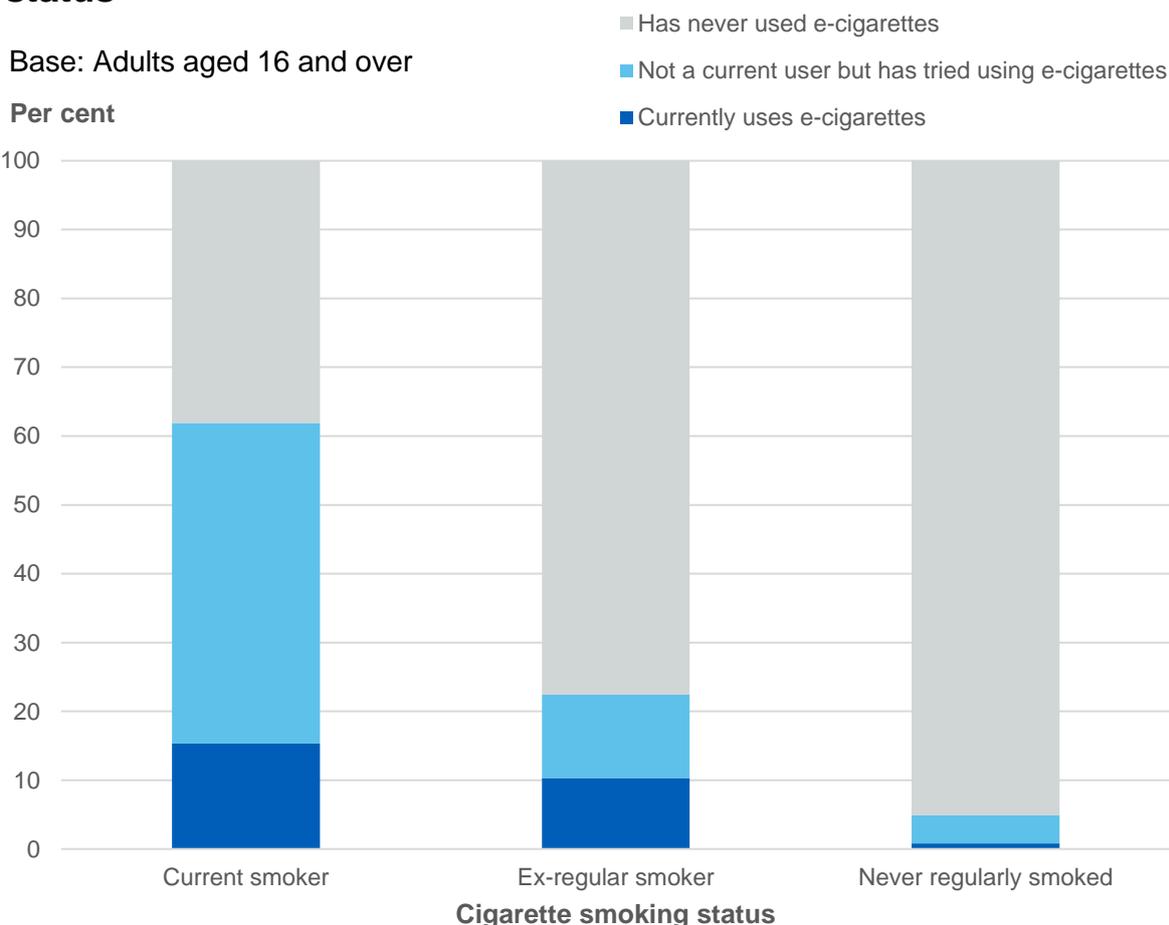
Of current smokers, 38% have never used e-cigarettes. This was higher for men (42%) compared to women (34%).

A high proportion (78%) of ex-regular smokers have never used e-cigarettes, with only 10% saying they are current users.

Nearly all (95%) of adults that don't regularly smoke cigarettes have also never used e-cigarettes.

Figure 6, Table 4

Figure 6 Self-reported e-cigarette use, by cigarette smoking status



Source: NHS Digital

Prevalence of ever using nicotine delivery products, by cigarette smoking status and sex

Adult current smokers are less likely to only use e-cigarettes (16%) than they were to only use other nicotine delivery products (19%) such as nicotine chewing gum, lozenges/mini lozenges, patches, inhalers/inhalators, mouth spray or nasal spray.

17% of adult current smokers said they use both e-cigarettes and other nicotine delivery products.

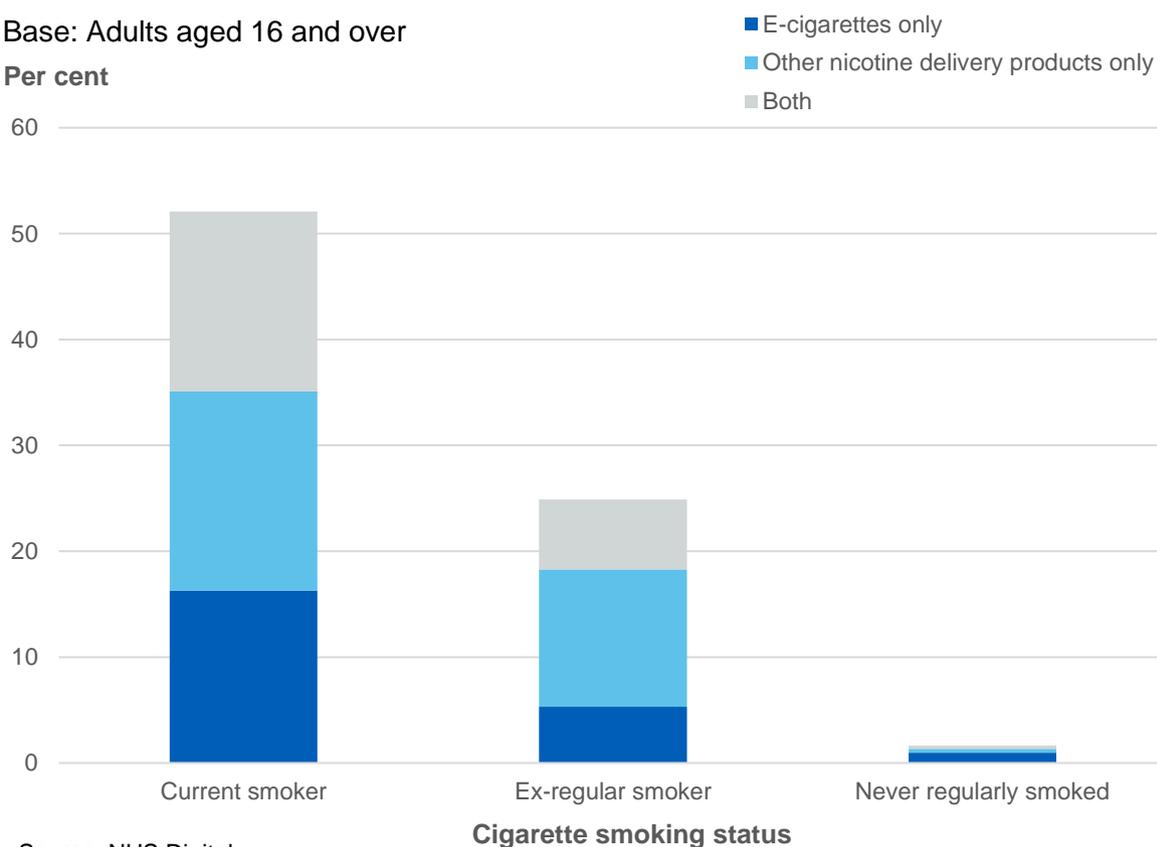
Of current cigarette smokers, a similar proportion of men (19%) and women (19%) said they use other nicotine delivery products only. Female current smokers however were more likely to use both (e-cigarettes and other nicotine delivery products) compared to male current smokers (19% of women compared to 15% of men).

Figure 7, Table 6

Figure 7 Prevalence of ever using e-cigarettes and/or other nicotine delivery products, by cigarette smoking status

Base: Adults aged 16 and over

Per cent



Source: NHS Digital

Since 2015, e-cigarette use has been asked in two different ways; as a set of questions specifically focused on current and any use of e-cigarettes (see Figures 5 and 6), and then within a set of questions about the use of nicotine replacement products (Figure 7). Due to the differences in the questions asked, Figures 5 and 6 are not directly comparable with Figure 7.

Intentions to give up smoking, by age and sex

Among current smokers, 65% wanted to stop smoking. Women were less likely than men to want to give up smoking. 36% of women compared to 34% of men agreed that they either didn't want to stop smoking or they thought they should stop smoking but didn't really want to.

The percentage of adults who did not want to stop smoking was highest among older smokers: 66% of those aged 65 and over did not want to stop smoking.

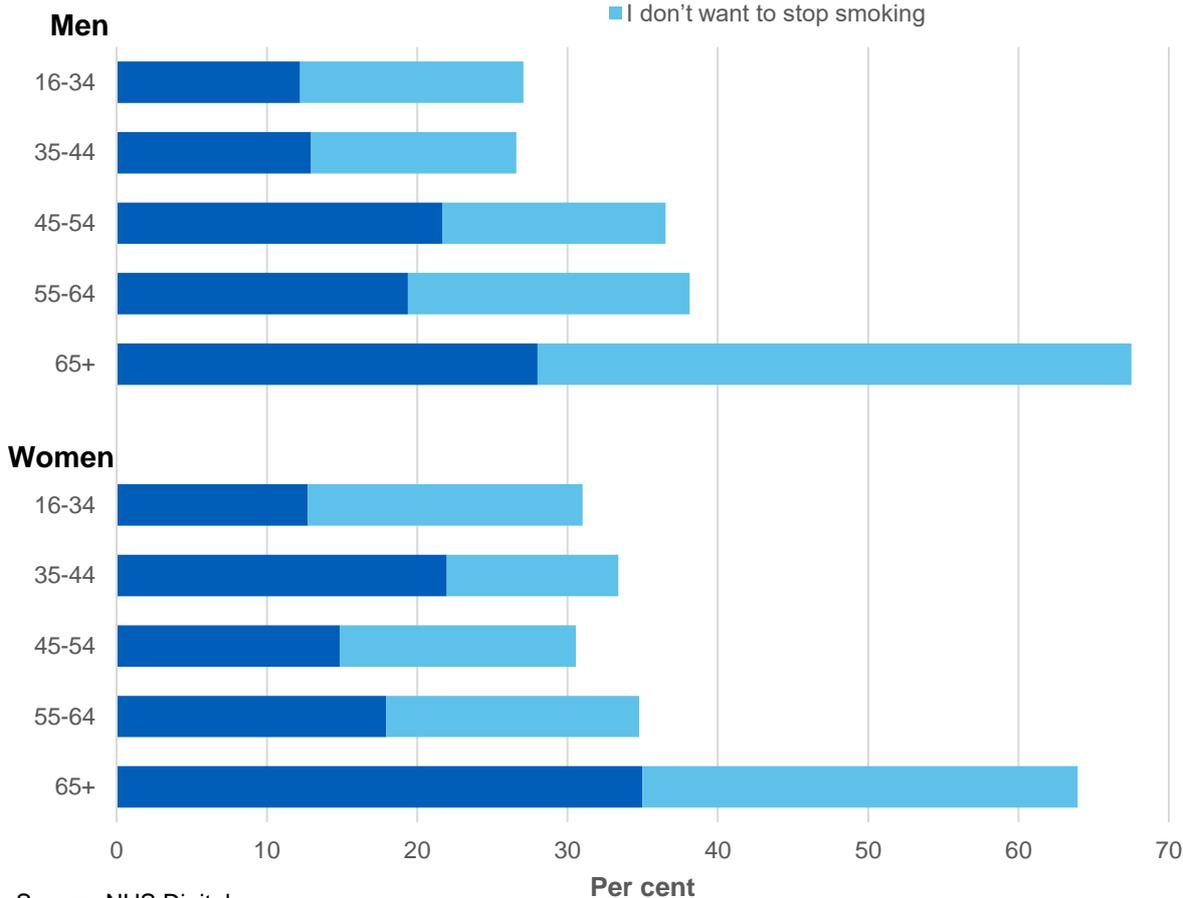
Current cigarette smokers under age 45 were the most likely to want to stop smoking (71%).

Figure 8, Table 5

Figure 8 Proportion of smokers not intending to stop smoking, by age and sex

Base: Current smokers aged 16 and over

Age group



Source: NHS Digital

Self-reported exposure to other people's smoke, by age and sex

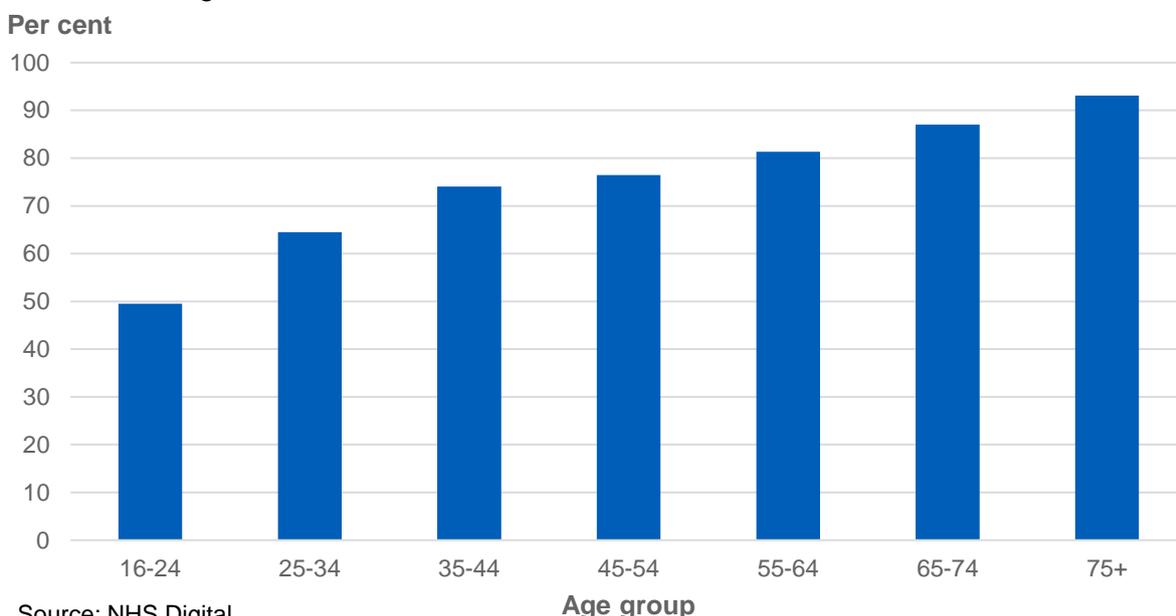
Overall, 74% of adults said that they had not been exposed to secondhand smoke in most weeks. Younger adults were more likely to be exposed to secondhand smoke than older adults. Only 50% of those aged 16 to 24 had reported that they had not been exposed to second hand smoke in most weeks, compared with 93% of those in the 75+ age group.

Men were more likely to be exposed to other people's smoke than women, with 72% of men having no self-reported exposure compared to 76% of women.

Figure 9 Table 7

Figure 9 Prevalence of reporting no exposure to secondhand smoke, by age group

Base: Adults aged 16 and over



The most common location for exposure to secondhand smoke was in outdoor smoking areas of pubs/restaurants/cafes (14%); this location was reported by a higher percentage of men (15%) than women (13%). Despite smoking in the workplace being banned in 2007, 8% of adults reported that they have been exposed to other people's smoke at work and this was higher for men (10%) than women (5%). Just 3% of adults reported being exposed to other people's smoke travelling by car/van.

Table 8

Saliva cotinine levels among self-reported, cotinine-validated non-smokers, by age and sex

Detectable saliva cotinine levels among current non-smokers²⁷ generally indicates exposure to secondhand smoke. Conversely, undetectable levels indicate no

²⁷ Non-smokers were cotinine-validated; meaning only self-reported never smokers or ex-smokers at the time of the nurse visit with saliva cotinine levels less than 12ng/ml, the cut-point indicative of smoking, were included.

exposure. Cotinine values are shown as geometric means for self-reported, cotinine-validated non-smokers aged 16 and over in Tables 9 and 10. Geometric means have been calculated because the distribution of saliva cotinine levels in non-smokers is very skewed, as so many have no detectable cotinine; geometric means take less account of extreme values that might distort the average or arithmetic mean.^{22,28}

Measures of saliva cotinine and self-reported data indicated a similar pattern of exposure to secondhand smoke across age groups. About three out of four had undetectable cotinine levels (76%). This was higher among older adults. Similarly, geometric mean cotinine was highest among those aged 16 to 24 (0.12ng/ml).

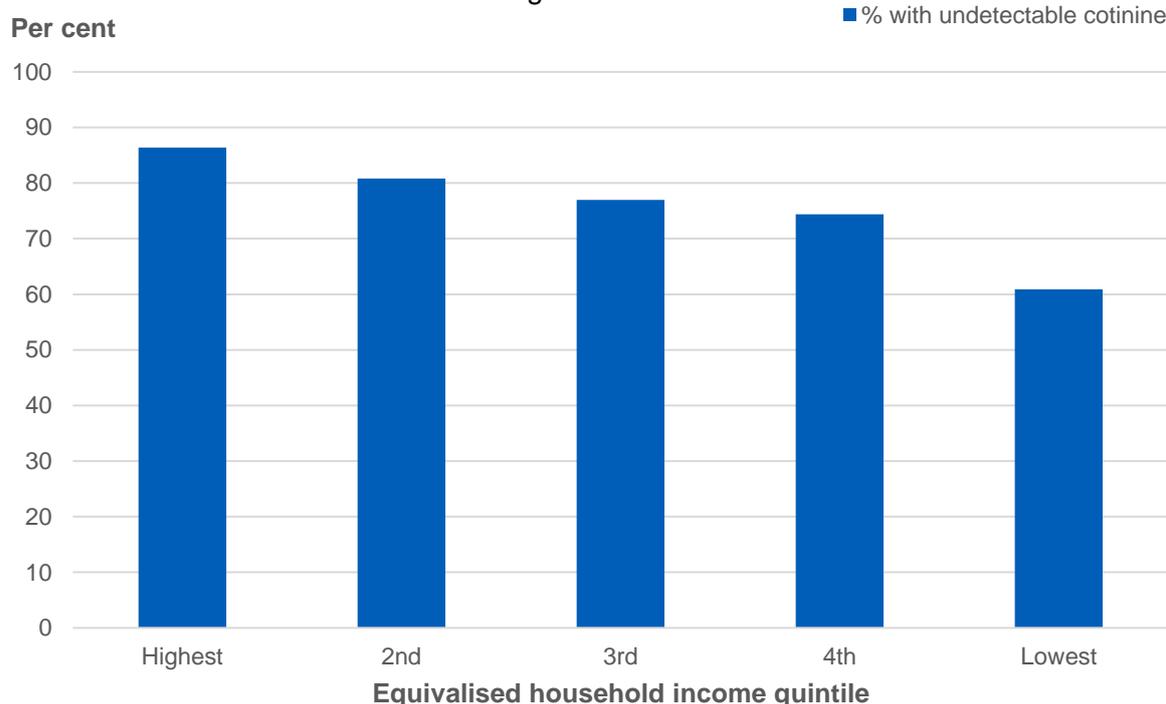
The proportion of non-smokers with undetectable cotinine was higher among those in higher income quintiles, as Figure 10 shows. Correspondingly, geometric mean cotinine was lower in the highest income quintiles (0.06ng/ml) and was higher in the lowest income quintile (0.11ng/ml).

Figure 10, Tables 9 and 10

Figure 10 Prevalence of undetectable cotinine, by equivalised household income

Undetectable cotinine indicating no secondhand smoke exposure

Base: Cotinine validated non-smokers aged 16 and over



Source: NHS Digital

²⁸ Geometric means have been presented for non-smokers as their cotinine data have a very skewed distribution: there are large numbers of extremely low values and a small number of very high values. Using the arithmetic mean is not appropriate as this can be distorted with such a distribution. The geometric mean is an average calculated by multiplying the cotinine values and taking the nth root, where n is the number of values. The geometric mean takes the outliers with very high values into account by estimating the typical value (or central tendency) of the set of data. Confidence intervals around the estimate are presented rather than standard errors.

Alcohol Consumption

Introduction

Over the past few decades increasing awareness and understanding of the health impacts of regular alcohol consumption, along with changes in drinking patterns and behaviour, have given rise to concern amongst policy makers, health professionals and the general public. Governments have published successive strategies for promoting sensible drinking and reducing alcohol-related harm: the 2004 *Alcohol Harm Reduction Strategy for England*,²⁹ *Safe. Sensible. Social. The next steps in the national alcohol strategy* in 2007;³⁰ and *The Government's Alcohol Strategy* in 2012.³¹

The World Health Organization (WHO) places alcohol as the third biggest global risk for burden of disease,³² and alcohol is identified as a causal factor in more than 60 medical conditions,³³ as well as some cancers including breast, throat and liver.^{34,35} The risk of alcohol-related harm increases with the amount drunk on a regular basis. Short-term health risks include accidents and injuries,³⁶ and alcohol-related hospital admissions continue to increase. In 2016/2017 there were 1.1 million hospital admissions where an alcohol-related disease, injury or condition was the primary reason for admission or a secondary diagnosis,^{37,38} with men more likely than women to be admitted for these reasons.³⁹ The risks are not just to those consuming alcohol, however; alcohol consumption has wider detrimental impacts on society, including harm caused to third-parties, crime and anti-social behaviour.³⁷

²⁹ Strategy Unit. *Alcohol Harm Reduction Strategy for England*. Cabinet Office, London, 2004.

³⁰ Department of Health, Home Office et al. *Safe. Sensible. Social. The next steps in the national alcohol strategy*. London, 2007.

http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/PublicHealth/HealthImprovement/Alcohol misuse/DH_085386

³¹ HM Government. *The Government's Alcohol Strategy*. TSO, London, 2012.

www.gov.uk/government/publications/alcohol-strategy

³² Mathers C, Stevens G and Mascarenhas M. *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva: World Health Organization. 2009.

www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf

³³ Alcohol Concern. *Statistics on alcohol*. <https://www.alcoholconcern.org.uk/alcohol-statistics>.

³⁴ Department of Health. *Alcohol Guidelines Review – Report from the Guidelines development group to the UK Chief Medical Officers*. Department of Health, London, 2016.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/545739/GDG_report-Jan2016.pdf

³⁵ The International Agency for Research on Cancer now recognises alcohol as a cause of particular cancers. IARC. *Consumption of Alcohol Beverages*. In *Personal habits and indoor combustions volume 100 E. A review of human carcinogens*. IARC, Lyon, 2012.

<http://monographs.iarc.fr/ENG/Monographs/vol100E/mono100E-11.pdf>

³⁶ NHS Choices. *Alcohol misuse – Risks*. NHS Choices <http://www.nhs.uk/Conditions/Alcohol-misuse/Pages/Risks.aspx>

³⁷ NHS Digital. *Statistics on Alcohol, England 2018*. NHS Digital, 2018.

<https://www.gov.uk/government/statistics/statistics-on-alcohol-england-2018>

³⁸ Half (51%) of these admissions were for CVD conditions related to alcohol consumption and almost one fifth (17%) were for mental or behavioural disorders caused by alcohol, cited in *Statistics on Alcohol, England 2018*; see note 36.

³⁹ In 2016/17 men accounted for 65% of hospital admissions for an alcohol related disease, injury or condition, cited in *Statistics on Alcohol, England 2018*; see note 37.

The increase in alcohol-related morbidity and mortality has largely been attributed to the rise in alcohol consumption since the post-war years. Per head of the adult population, alcohol consumption more than doubled between the mid-1950s and 1990s.⁴⁰ There have also been changes to consumption behaviour, with an increase in alcohol purchased from off-licences and consumed at home as opposed to licenced establishments. This long-term trend is thought to be largely due to the increasing affordability of alcohol from off-licence sellers.⁴⁰

The publication of *Drinking Sensibly* in 1981⁴¹ defined alcohol misuse and introduced the concept of 'sensible drinking'. 'Sensible limits', that is, the amount people should limit their drinking to in order to avoid damage to health, were set at up to 21 units per week for men and up to 14 units per week for women.⁴² The guidance was revised in the 1995 *Sensible Drinking* report⁴³ and linked to daily rather than weekly consumption. Regular consumption of between 3 and 4 units per day for men and between 2 and 3 units per day for women was deemed to be of lower risk of alcohol-related harm.

In 2016 the UK Chief Medical Officers (CMOs) published new guidelines on low risk drinking.⁴⁴ In a move away from daily limits, it is now recommended that men and women should not regularly (defined as most weeks) drink more than 14 units a week. Drinking at this level is considered to be 'low risk', and adults who regularly drink up to this amount are advised to spread their drinking over three or more days. Above this level is considered to be 'increased risk', for men this is now over 14 units and up to 50 units, and for women over 14 units and up to 35 units per week. Men who regularly drink more than 50 units a week and women more than 35 units, are described as 'higher risk drinkers' and are considered to be at particular risk of alcohol-related health problems.⁴⁴

Methods

The Health Survey for England (HSE) has asked about drinking alcohol since it began in 1993. In 2017, the 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

⁴⁰ Institute of Alcohol Studies. *Alcohol consumption factsheet*. Institute of Alcohol Studies, 2013. <http://www.ias.org.uk/uploads/pdf/Consumption%20docs/Alcohol%20consumption%20factsheet%20August%202013.pdf>

⁴¹ Department of Health and Social Security (1981) Prevention and Health. *Drinking Sensibly*. A discussion document prepared by the Health Departments of Great Britain and Northern Ireland. HMSO. London

⁴² Introduced as part of the government's 1992 White paper. Department of Health. (1992) *The health of the Nation – a strategy for health in England*. Her Majesty's Stationery Office.

⁴³ Department of Health. *Sensible drinking: report of an inter-departmental working group*. DH, London, 1995. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/gro ups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4084702.pdf

⁴⁴ UK Chief Medical Officers. *Low Risk Drinking Guidelines*. Department of Health, London, 2016 <https://www.gov.uk/government/publications/alcohol-consumption-advice-on-low-risk-drinking>

- 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 2017, 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. Interviewers had the option of offering young adults aged 18 to 24 this questionnaire if the interview took place in the presence of their parents.

Measuring alcohol intake

Alcohol consumption is reported in terms of units of alcohol; one unit of alcohol is 10ml by volume of pure alcohol. Table A below shows the conversion factors used currently. 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.

Table A: 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)	2.0
	Large glass (250ml)	3.0
	Bottle	9.0
Spirits and liqueurs	Glass (single measure)	1
Sherry, martini and other fortified wines	Glass	1
Alcopops	Small can or bottle	1.5

Measures of usual weekly consumption are presented in line with the current guidelines for sensible drinking:

- 'lower risk' (up to 14 units for men and women);
- 'increasing risk' (above 14 and up to 50 units for men, above 14 and up to 35 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 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).

Adults' maximum alcohol consumption on any given day in the last week is presented in line with the previous guidelines for daily amounts (see Introduction section). This report looks at the proportion of adults drinking more than these levels on their heaviest drinking day in the past week, as well as the proportion drinking more than double these levels. It does not take into account how often they drink these amounts.

Frequency of drinking in the last year, by age and sex

In 2017, 82% of adults had drunk alcohol in the last 12 months. A higher proportion of men than women drank alcohol in the last year (85% and 79% respectively).

For men and women, the proportions of non-drinkers were highest in the youngest and oldest age groups.

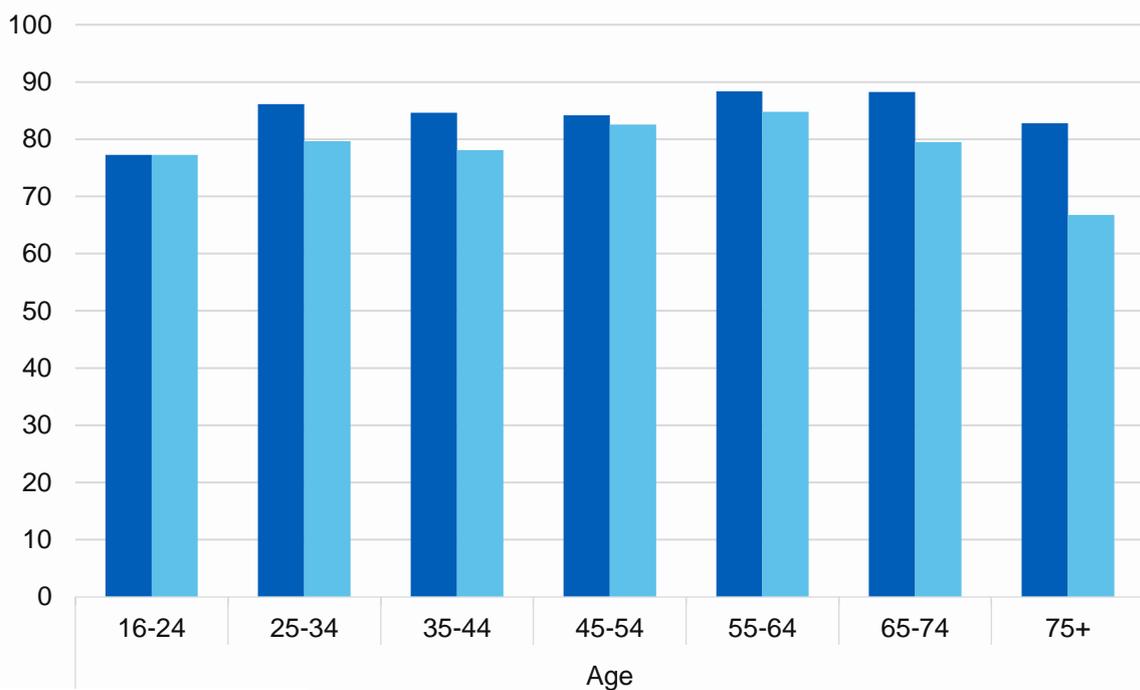
50% of adults usually drank alcohol at least once a week or more often, with men more likely than women to do so (58% and 42% respectively). The proportion who drank once a week or more increased with age among both men and women, before gradually decreasing from the age of 65. Within every age group a higher proportion of men than women drank alcohol once a week or more.

Figure 11, Table 11

Figure 11 Drank alcohol in the last year, by age and sex

Base: Aged 16 and over

Per cent



Source: NHS Digital

Estimated weekly alcohol consumption, by age and sex

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

A minority of adults, 19% did not drink in the last 12 months. 60% of adults drank at levels which put them at lower risk of alcohol-related harm, that is, 14 units or less in the last week. Survey estimates are subject to a margin of error. It is likely that in 2017 the proportion of adults who drank 14 units or less in the last week was between 59% and 62%.

There were some differences between men and women in typical alcohol consumption. 16% of men and 21% of women did not drink in the last 12 months. 56% of men and 64% of women drank at levels which put them at lower risk of alcohol-related harm, that is, 14 units or less in the last week. More than twice as many men than women drank at an increasing risk level (24% and 11% respectively); for men this was defined as more than 14 units and up to 50 units, and for women more than 14 units and up to 35 units. A higher proportion of men than women also drank at increasing and higher risk levels (that is over 14 units for both men and women); 28% of men and 14% of women. 4% of men drank over 50 units and 3% of women drank over 35 units (higher risk levels) in the last week.

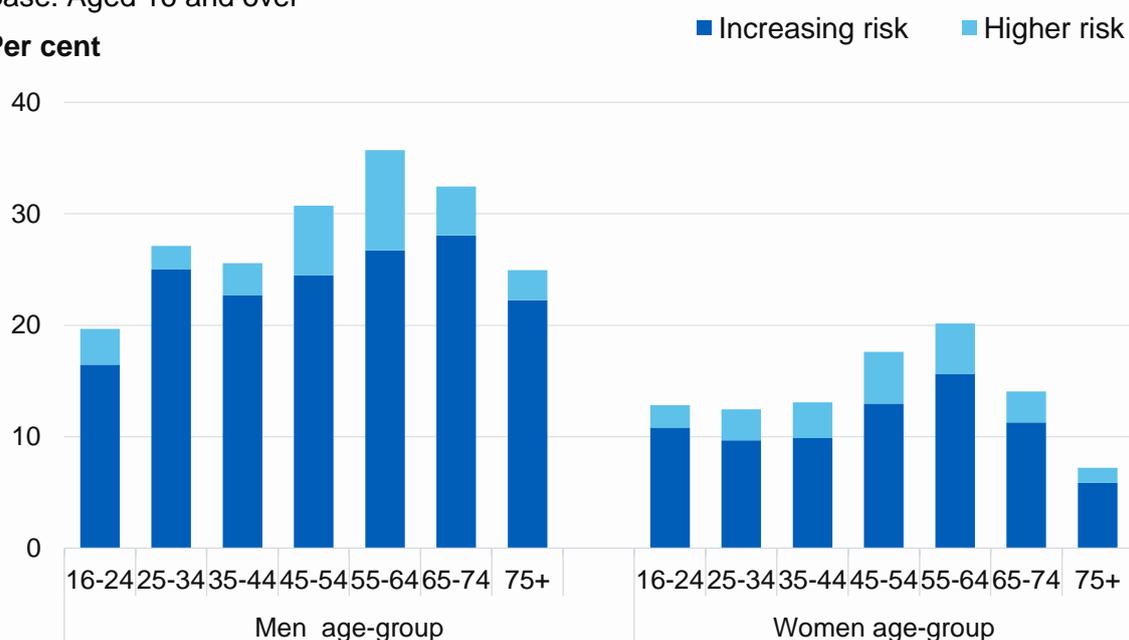
The proportion of men and women usually drinking over 14 units in a week varied across age groups and was most common among men and women aged 55 to 64 (36% and 20% respectively). Proportions drinking at these levels then declined among both sexes from the age of 65. Across all age groups, men were more likely than women to drink at increasing and higher risk levels.

Figure 12, Table 13

Figure 12 Proportion of adults drinking at increased or higher risk of harm, by age and sex

Base: Aged 16 and over

Per cent



Source: NHS Digital

Among those adults that drank alcohol, the average (mean) amount drunk was 11.8 units of alcohol in a typical week (15.0 units for men and 8.6 units for women).

Change over time in estimated weekly alcohol consumption

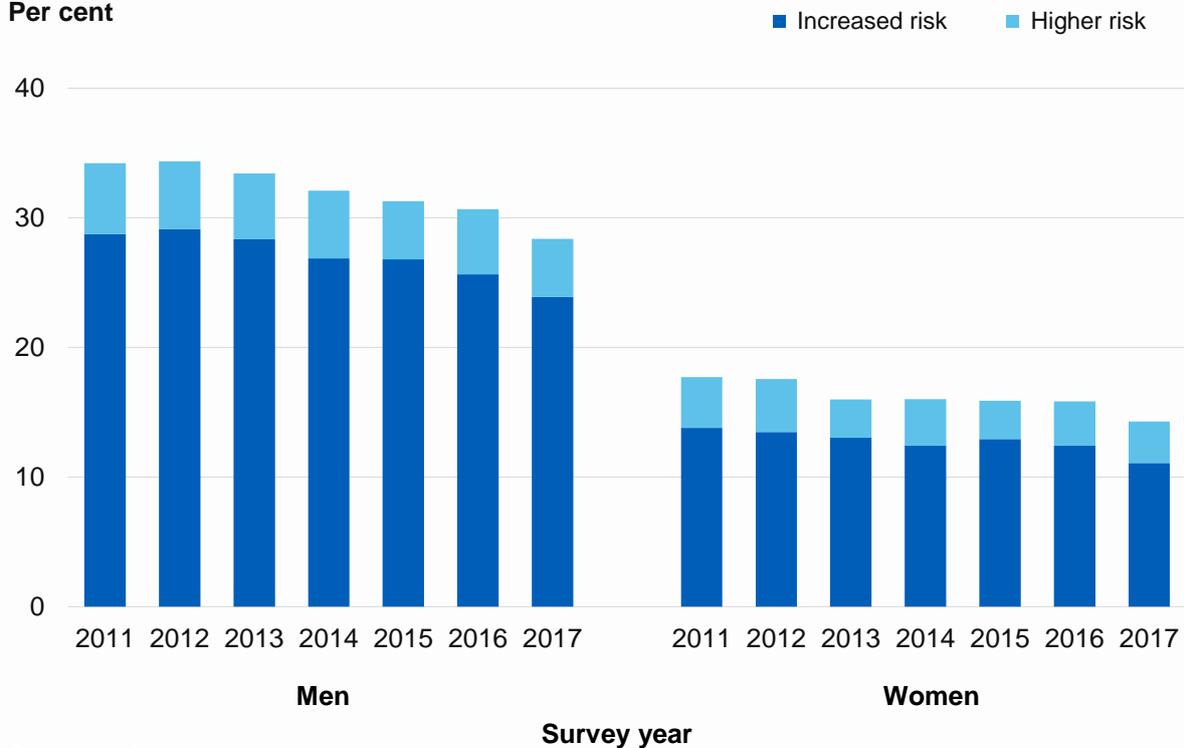
The proportion of men and women usually drinking at increased or higher risk of harm decreased between 2011 and 2017 (from 34% to 28% of men, and from 18% to 14% of women).

Figure 13, Table 12

Figure 13 Proportion of adults drinking at increased or higher risk of harm, 2011-2017

Base: Aged 16 and over

Per cent



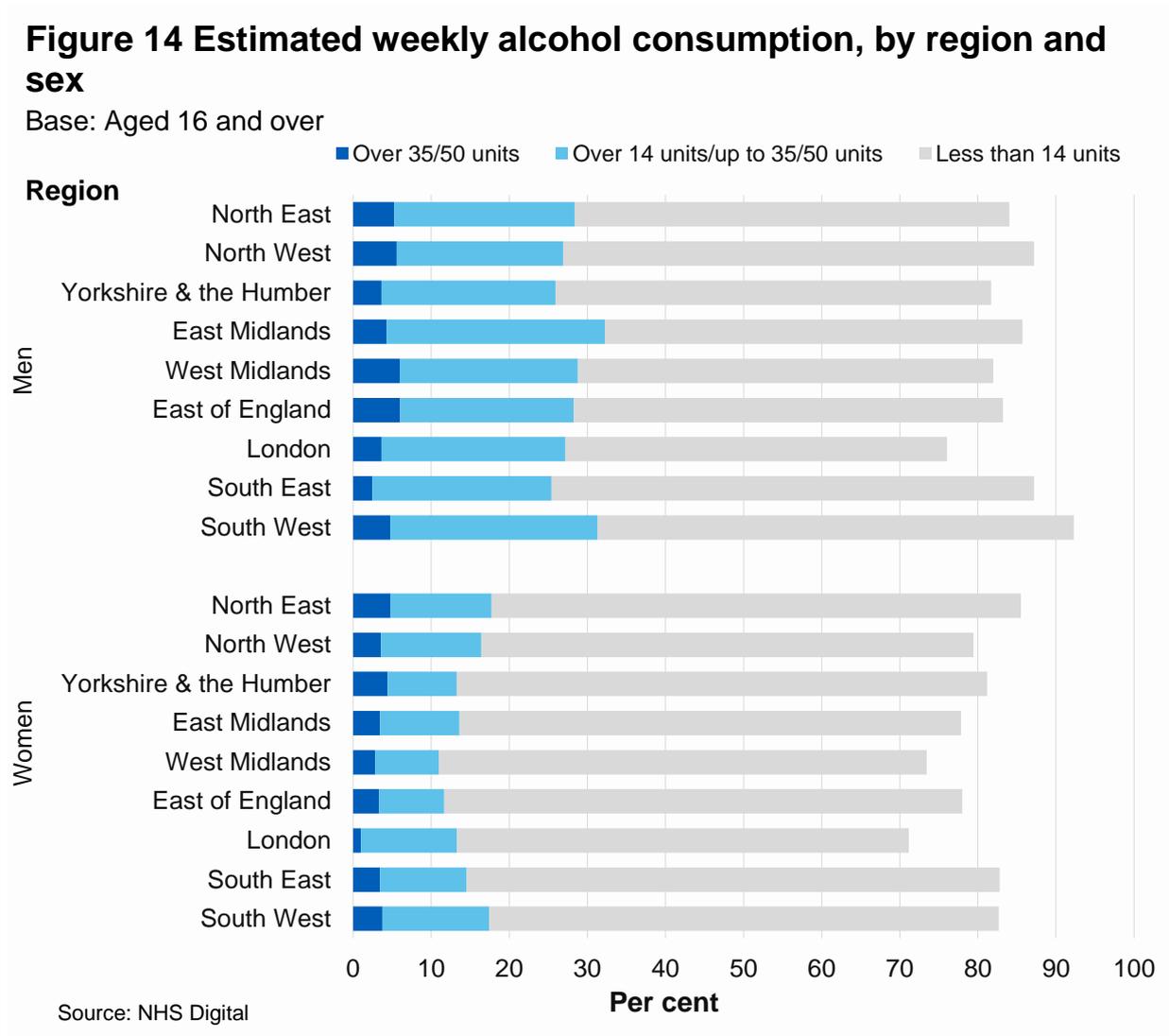
Source: NHS Digital

Estimated weekly alcohol consumption, by region

Regional data are shown in the data tables both as observed and age-standardised estimates. Observed data show the actual prevalence rate found in the survey. Age-standardised data enable comparisons between regions that take into account the different age profiles within regions.

The proportions of men and women who had not drunk alcohol varied across regions. Among men, the highest proportions of non-drinkers were in London and the lowest proportions in the South West. Among women, the highest proportions were in London and the West Midlands, with the lowest proportion in the North East.

Figure 14, Table 14



Estimated weekly alcohol consumption, by household income

For a definition of equivalised household income, see the Glossary.⁴⁵ The analysis by household income in this report has been age-standardised.

The proportion of adults who were non-drinkers was highest in lower income households (31%) compared with 9% in the highest income households.

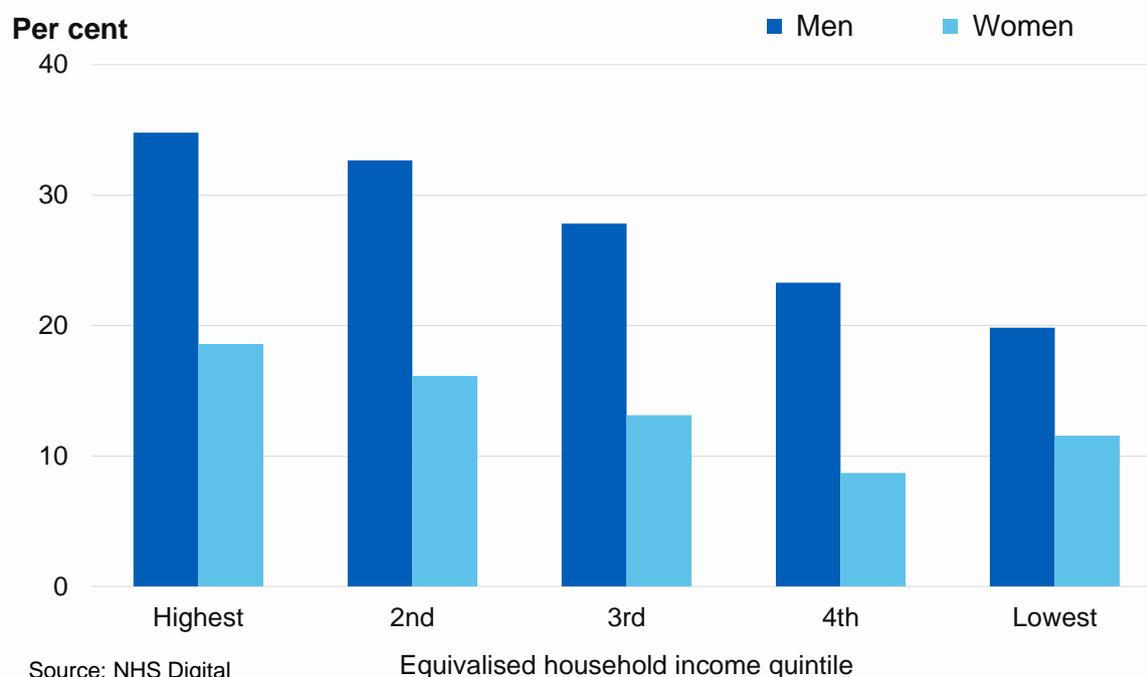
Adults in higher income households were more likely to drink over 14 units in a usual week (27%) than those in lower income households (15%). 35% of men in households in the highest income quintile drank at increasing and higher risk levels, compared with 20% of men in lower income households. 19% of women in the highest income households drank more than 14 units compared with 12% of woman in the lower income households.

The variation in weekly alcohol consumption by household income was accounted for by differences in the proportions of men and women drinking at increasing levels of risk (that is, over 14 units and up to 50 units for men and over 14 units and up to 35 units for women) rather than the smaller proportions in the higher risk category.

Figure 15, Table 15

Figure 15 Proportion whose estimated weekly alcohol consumption was over 14 units, by equivalised household income and sex

Base: Aged 16 and over



⁴⁵ Health Survey for England 2017 Glossary, see documents at <https://digital.nhs.uk/pubs/hse2017>.

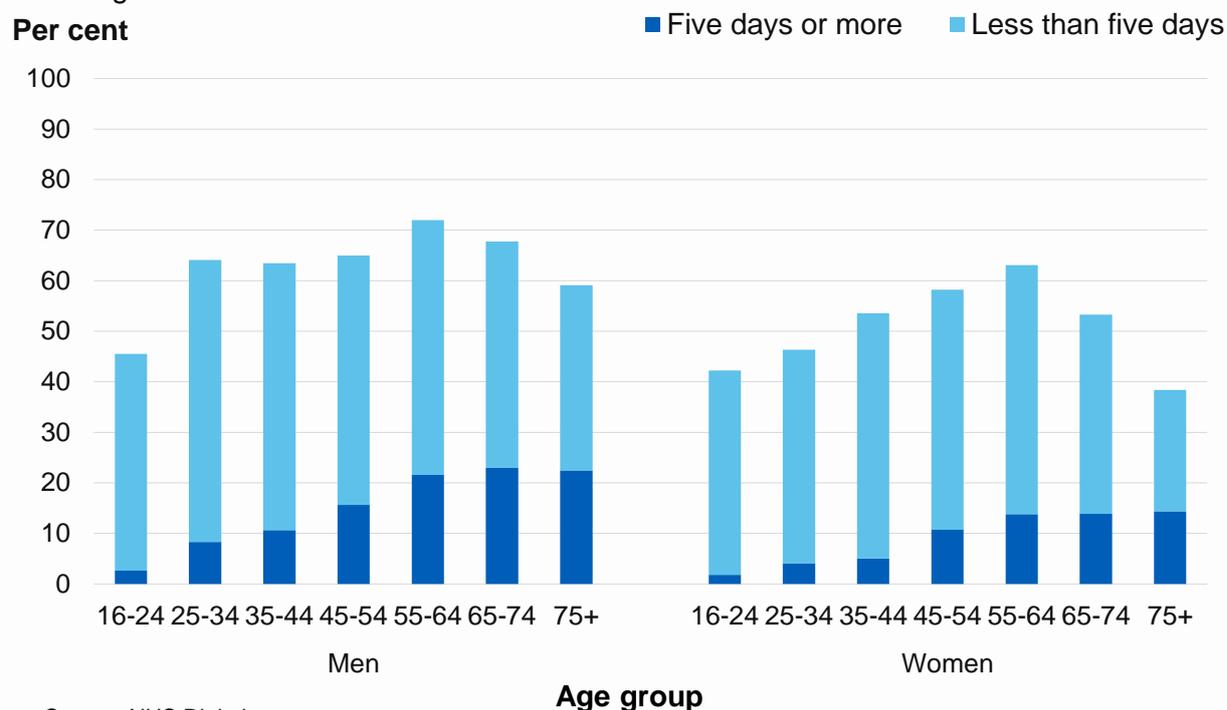
Alcohol consumption in the last week

63% of men and 52% of women had drunk alcohol in the last week. The proportion of men and women drinking in the last week increased with age and was highest among both men and women aged 55 to 64 (72% and 63% respectively). From the age of 65 the prevalence of drinking in the last week decreased among both sexes.

Figure 16, Table 16

Figure 16 Number of days on which drank alcohol in the last week, by age and sex

Base: Aged 16 and over



11% of adults drank on five or more days in the last week (14% of men and 9% of women). Drinking on five or more days increased from 2% of adults aged 16 to 24, to 18% of adults aged 55 to 64 and older age groups.

The mean number of days on which adults drank alcohol in the last week was 2.8 and was higher among men than women (3.0 days and 2.6 days respectively). As with the proportion of adults drinking alcohol, the mean number of days increased with age, from 2.0 days among adults aged 16 to 24 to 3.4 days among adults aged 65 to 74 and 3.7 days among adults aged 75 and over.

Table 16

Estimated maximum alcohol consumption on any day in the last week, by survey year, age and sex

Trends in alcohol consumption between 1998 and 2017, based on the maximum amount drunk on any day in the last week are shown in Table 17. The methodology used to estimate the number of units of alcohol changed in 2006 and more details are in the Appendix at end of this report. Table 17 shows both the original and revised estimates for 2006, and the revised estimates for 2007 onwards; the revised methodology has been used to measure trends in subsequent years.

The proportion of men drinking more than 4 units on any day in the last week was lower in 2017 (34%) than in 2006 (41%). There has been a gradual decline from a peak of 43% in 2009.

The proportion of men who drank more than 8 units in a day dropped from 24% in 2006 to 19% in 2017, with a gradual decline since 2009.

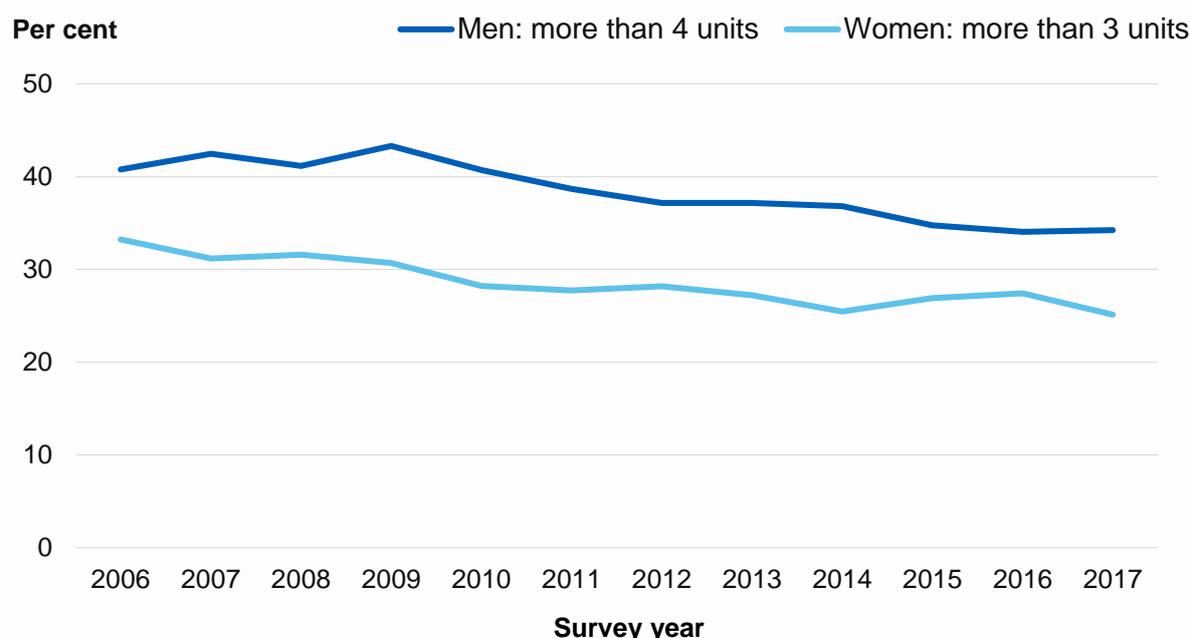
There was a similar pattern of decrease among women: between 2006 and 2013 the proportion consuming more than 3 units on any day in the last week dropped from 33% to 25%. Since 2013 this proportion has fluctuated between 25% and 27%; in 2017 it was 25%.

The proportion of women drinking more than 6 units in a day decreased between 2006 and 2017 from 16% to 11%.

Figure 17, Table 17

Figure 17 Maximum amount drunk on any day in the last week, 2006-2017

Base: Aged 16 and over



Source: NHS Digital

Fruit and Vegetable Consumption

Introduction

In 2002 the World Health Organization (WHO) began to develop a global strategy on diet, physical activity and health in the context of the rising burden of chronic diseases. Diseases like cardiovascular disease, stroke, diabetes and cancer present a major challenge to public health, particularly in developed countries. These diseases, and the associated unhealthy behaviours, cluster among poor communities and contribute to social and economic inequalities.⁴⁶

A 2005 report estimated that food-related ill-health in the UK is responsible for about 10% of deaths and illness, costing the NHS £6 billion annually. The vast majority of this burden is due to unhealthy diets rather than food-borne diseases.⁴⁷ Dietary goals to prevent chronic diseases emphasise eating more fresh vegetables, fruits, and pulses.⁴⁸ The 5 A Day guidelines were developed based on the recommendation from WHO that consuming 400g fruit and vegetables a day can reduce risks of chronic diseases, e.g. heart disease, stroke, and some cancers.⁴⁹ These guidelines state that everyone should eat at least five portions of a variety of fruit and vegetables every day.⁵⁰ Fruit and vegetables may also play an important role in weight management when combined with reduced fat intake,⁵¹ and may reduce the risk of Type 2 diabetes⁵² and impaired cognitive function.⁵³

Questions about fruit and vegetable consumption were first included in the HSE in 2001 and are designed to assess fruit and vegetable consumption in terms of portions per day (roughly 80g per portion). The questions were not included in 2012 or 2014.

⁴⁶ World Health Organization. *Global strategy on diet, physical activity and health*. The Fifty-seventh World Health Assembly, World Health Organization, Geneva, 2004.
www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf

⁴⁷ Rayner M, Scarborough P. *The burden of food related ill health in the UK*. *J Epidemiol Community Health* 2005;**59**:1054-1057.

⁴⁸ Commission on Social Determinants of Health. *Closing the gap in a generation: health equity through action on the social determinants of health*. Final Report of the Commission on Social Determinants of Health. World Health Organization, Geneva, 2008.
www.who.int/social_determinants/thecommission/finalreport/en/index.html

⁴⁹ *Diet, nutrition and the prevention of chronic diseases: report of a Joint FAO/WHO Expert Consultation*. WHO Technical Report Series, No. 916. World Health Organization, Geneva, 2003.
www.who.int/dietphysicalactivity/publications/trs916/en/

⁵⁰ www.nhs.uk/livewell/5aday/pages/5adayhome.aspx/

⁵¹ Tohill B. *Dietary intake of fruit and vegetables and management of body weight*. Background paper for the Joint FAO/WHO Workshop on Fruit and Vegetables for Health, World Health Organization, 2004.
www.who.int/dietphysicalactivity/publications/f&v_weight_management.pdf

⁵² Bazzano L, Li T, Kamudi J, Hu F. Intake of Fruit, Vegetables, and Fruit Juices and Risk of Diabetes in Women. *Diabetes Care* 2008;**31**:7:1311-1317.

⁵³ Loef M, Walach H. *Fruit, vegetables and prevention of cognitive decline or dementia: a systematic review of cohort studies*. *J Nutrit Health Aging*. 2012 Jul;**16**(7):626-30.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2696613/>

Fruit and vegetable consumption, by survey year, age and sex

In 2017, 29% of adults were eating the recommended five portions of fruit and vegetables a day. Survey estimates are subject to a margin of error. It is likely that in 2017 the proportion of adults eating five portions of fruit and vegetables a day was between 27% and 30%.

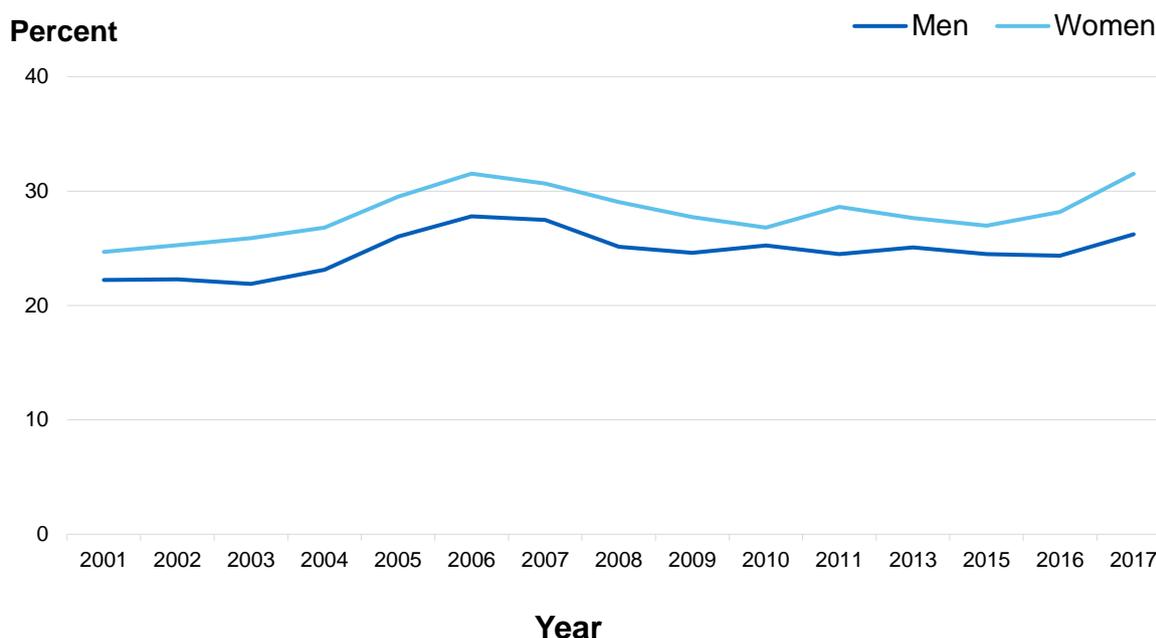
For both men and women, the proportion consuming five or more portions per day increased from 2001, when it was 22% for men and 25% for women, reaching a peak in 2006 at around 28% for men and 32% for women.

Since 2008, figures for men have remained stable at around 24-26%; in 2017 it was 26%.

For women, the proportion of women consuming five or more portions per day remained stable between 2008-2016 at around 27-29% and increased to 32% in 2017.

Figure 18, Table 18

Figure 18 Trends in prevalence of eating five or more portions per day, 2001-2017, by sex



Note: Data from 2003 onwards are weighted for non-response. Data were not collected in 2012 and 2014

Source: NHS Digital

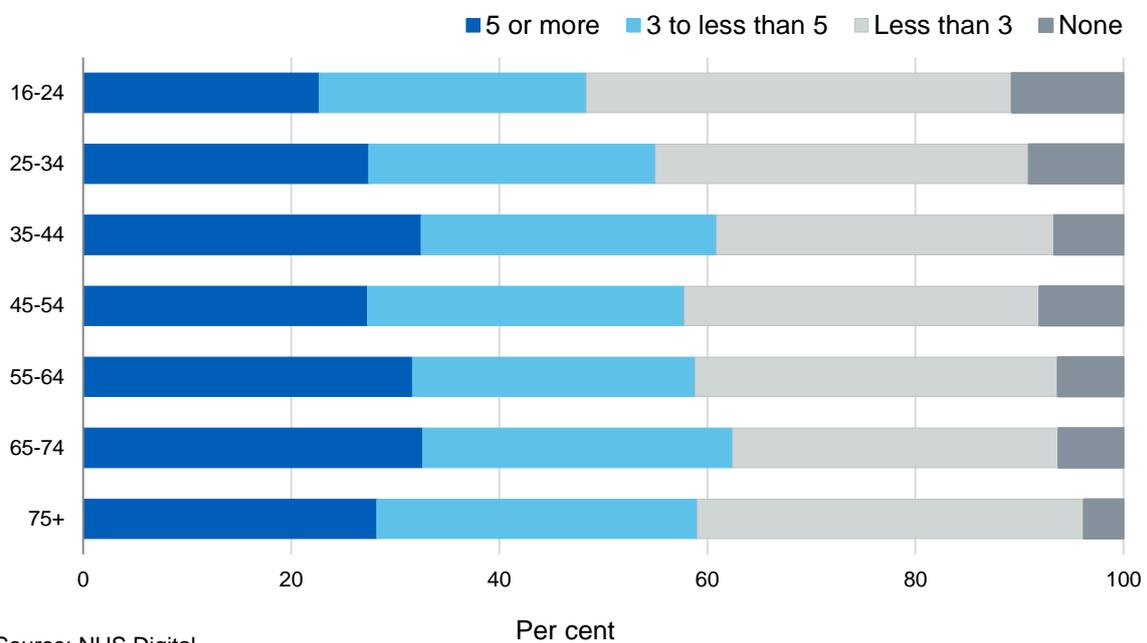
The mean number of portions of fruit and vegetables consumed by adults between 2009 and 2016 ranged between 3.5 and 3.6 per day. In 2017 it was slightly higher at 3.8 portions per day.

Consumption varied with age, young people aged 16 to 24 consumed on average the lowest number of portions of fruit and vegetables, 3.3 a day, and were the least likely age group to eat their five a day recommendation, 23%.

Figure 19, Table 18

Figure 19 Portions of fruit and vegetables eaten per day, by age

Base: All adults aged 16 and over



Source: NHS Digital

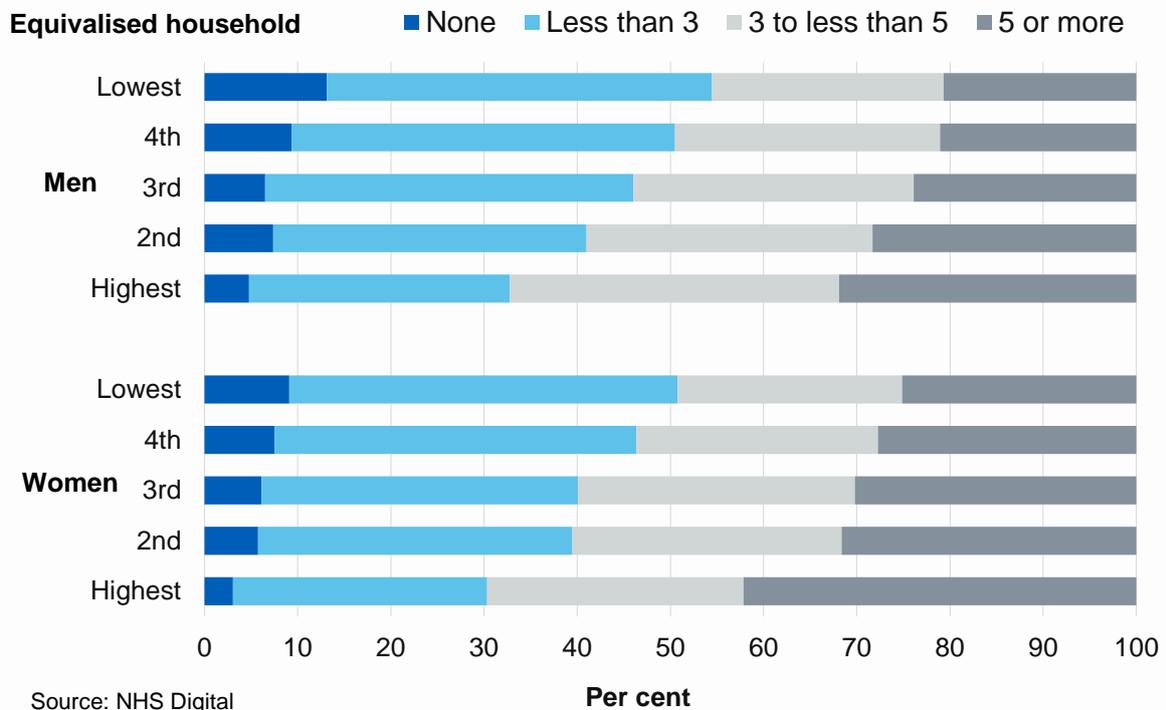
Fruit and vegetable consumption, by equivalised household income and sex

Higher consumption of fruit and vegetables was associated with higher income, and vice versa: 37% of all adults (32% of men and 42% of women) in the highest income quintile had consumed five or more portions of fruit and vegetables on the previous day compared with 23% of all adults (21% of men and 25% of women) in the lowest quintile.

Figure 20, Table 19

Figure 20 Fruit and vegetable consumption, by equivalised household income and sex

Base: Aged 16 and over



Appendix – Technical information

Methods

Full questionnaires are included in the survey Documentation. Further details of the protocols for collecting measurements can be found in the HSE 2017 Methods report. Both of these are available via <https://digital.nhs.uk/pubs/hse2017>.

Technical details about trend tables

Trend tables present the results within the general population sample, although in some years boost sample data have been included. For example, some estimates for 2002 are based on data from young adults in both boost and general population samples to increase the precision of the results. For 2005, the boost sample of older people is included in the estimates for people aged 65 and over. In these years, boost sample cases have been excluded from the estimates for all men, all women and all adults.⁵⁴

Since 2013, standard errors (shown in some tables) have been calculated for all survey years using a complex samples module of the statistical package. In 2014, standard errors for adult estimates in years up to 2002 were also recalculated using the complex samples module. This complex samples module takes account of the complex survey design and weighting used in the HSE rather than assuming a simple random sample.⁵⁵ In the earlier trend tables, standard errors for years up to 2002 did not use a complex samples module, and therefore indicated narrower margins of error than those shown in the tables from 2013 onwards.

In 2003, non-response weighting was introduced for the first time in the HSE series. Since the weighted data provide more accurate information for the individual years for which they are available, the analysis of trends in this report focuses on the weighted estimates for 2003 onwards.⁵⁶

The impact of the weighting can be seen in the 2006 adults' trend tables, available at [Health Survey for England - 2006 trends](#). These present unweighted estimates (directly comparable with previous years) and weighted estimates for 2003 to 2006.

⁵⁴ Data from older people in care homes collected for the 2000 survey are not included in trend tables as there are likely to be significant differences in the health of older people living in private households and in care homes.

⁵⁵ Full details of the HSE sample can be found in the HSE 2017 Methods report available via <https://digital.nhs.uk/pubs/hse2017>

⁵⁶ In 2003, key survey variables using weighted and unweighted estimates were compared. This comparison showed that there are small differences between weighted and unweighted results, which are generally larger for men than women. See Blake, M. *Weighting the data*. Section 7.4.2, in Sproston K, Primatesta P (eds). *Health Survey for England 2003. Volume 3: Methodology and documentation*. The Stationery Office, London, 2004.

Changes in the conversion of drinks to alcohol units

Trends in alcohol consumption between 1998 and 2017 based on the maximum amount drunk on any day in the last week are shown in Table 17.

The method used by the HSE to convert drinks to units remained essentially unchanged from 1991 until 2005, based on assumptions introduced by the General Household Survey (GHS) in 1990.⁵⁷ By the mid-2000s, it became clear that these assumptions were no longer valid. The average strengths of beers and wines had increased in the intervening years, and pubs, bars and restaurants served drinks in a broader range of measures.⁵⁸ Standard glasses of wine, formerly 125ml, are likely to be 175ml. From 2006, changes have been made in the way the HSE and other surveys estimate alcohol consumption. The table below shows the original conversion factors used by the HSE until 2005 and the revised conversion factors used from 2006.

Type of drink	Measure	Original equivalent units of alcohol	Revised equivalent units of alcohol
Normal strength beer, lager, stout, cider, shandy (less than 6% ABV)	Pint	2	2
	Can or bottle	amount in pints multiplied by 2	amount in pints multiplied by 2
	Small cans (size unknown)	1	1.5
	Large cans or bottles (size unknown)	2	2
Strong beer, lager, stout, cider (6% ABV or more)	Pint	3	4
	Can or bottle	amount in pints multiplied by 3	amount in pints multiplied by 4
	Small cans (size unknown)	1.5	2
	Large cans or bottles (size unknown)	3	3
Spirits and liqueurs	Glass (single measure)	1	1
Sherry, martini and other fortified wines	Glass	1	1
Wine	Glass	1	2
Alcopops	Small can or bottle	1	1.5

The changes have an impact on the estimated consumption of beer, wine and alcopops; the most significant of these is the revision to the unit equivalent of a glass

⁵⁷ Smyth M, Browne F. *General Household Survey 1990*. HMSO, 1992.

⁵⁸ Goddard E. *Estimating alcohol consumption from survey data: improved method of converting volume to units*. ONS, 2007.

<http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/guide-method/method-quality/specific/gss-methodology-series/index.html>

of wine. In 2006, the conversion for a glass of wine was changed from one unit to two units; in 2007, a further adjustment was made and separate conversion rates were used for 125ml, 175ml and 250ml wine glasses as follows:

- Large glass 250ml 3.0 units
- Standard glass 175ml 2.0 units
- Small glass 125ml 1.5 units.

Table 17 shows both the original and revised estimates for 2006, and the revised estimates for 2007 onwards; the revised methodology has been used to measure trends in subsequent years. For information on trends using the original method, and differences between the original and revised estimates for 2006, see the 2006 trend tables commentary, available at: <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/health-survey-for-england-2006-latest-trends>

Further details of the effects of this on estimates are included in Chapter 7, sections 7.2 and 7.5 of the 2007 report see: <https://files.digital.nhs.uk/publicationimport/pub00xxx/pub00415/heal-surv-life-know-atti-beha-eng-2007-rep-v2.pdf>

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