This report may be of interest to those working in public health, policy officials, commissioners of health and social care services and to the public to see the changes over time in the prevalence of obesity, some health conditions and health related behaviours like smoking and drinking alcohol.
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Introduction

The Health Survey for England

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. The survey is commissioned by the Health and Social Care Information Centre (HSCIC), and before April 2005 was commissioned by the Department of Health. Since 1994, the survey has been carried out by NatCen Social Research and the Research Department of Epidemiology and Public Health at UCL.

The survey consists of an interview and nurse visit. It has a series of core elements that are included every year or alternate years, and special topics that are included in selected years. Core topics include:

- **Every year**
  - General health
  - Social care
  - Smoking
  - Drinking
  - Height measurements
  - Weight measurements
  - Blood pressure measurements
  - Adult blood samples
  - Child saliva samples

- **Alternate years**
  - Fruit and vegetable consumption
  - General Health Questionnaire (GHQ-12)
  - Overall health (EQ-5D)
  - Adult urine samples
  - Adult saliva samples

Special topics covered in selected years include, for example, cardiovascular disease (CVD), physical activity, accidents, lung function measurement and certain blood analytes. In recent years, modules of questions about weekly alcohol consumption and well-being have been included regularly.

Every year there is a sample of the general population in which adults and children in selected households are eligible for inclusion. Adults aged 16 and over have been included since the start of the survey; children aged 2-15 were first included in 1995; and infants aged 0-1 have been included since 2001. In some years a boost sample is used to increase the proportion of participants from certain population groups.

In 2014, there was a sample of 8,077 adults and 2,003 children. There was no child boost in 2014, so base sizes may be small for some categories compared with earlier years.

**Trend tables**

The trend tables focus on key changes in core topics and measurements. Trend tables present the results within the general population sample, although in some years boost sample data are included. For example, 2002 and 2005 - 2010 trends among children and young people are calculated on the basis of data from children and young adults in the boost and general population samples, to increase the precision of the results. The boost sample of older people in 2005 is included in the trend estimates for people aged 65 and over, but excluded in the estimates for all men/women/adults. Data from older people in care homes collected for the 2000 survey were not included in trend tables as there were likely to be significant differences in the health of older people living in private households and in care homes.
Changes to trend tables

The trend tables were revised in 2006, and some new tables were introduced while others were not continued in the series. Full details of the changes are given in the commentary to the 2006 tables, available at www.hscic.gov.uk/catalogue/PUB00480. Two new tables were introduced for adults in 2013: one showing estimated weekly consumption of alcohol from 2011 onwards, and one showing well-being (Warwick-Edinburgh Mental Well-being Scale) from 2010.

Because the current sample size for children is relatively small compared with previous years, the child trend tables have been changed to present results for age groups rather than for individual age years. Trend tables up to 2012 showed individual age years for most tables, and these are available at www.hscic.gov.uk/pubs/hse2012trend.

Technical details

The following commentary focuses on key trends in the health of adults and children since 1993, or the earliest year for which comparable data are available. Only statistically significant differences (at the 95% level) are reported. As results are based on survey data they are affected by sampling error. 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 following analysis of trends focuses on the weighted estimates for 2003 onwards. For children, data for all years have been weighted to adjust for the probabilities of selection, since a maximum of two children are included in each household; from 2003, children’s data have also included non-response weighting.

The impact of the weighting can be seen in the 2006 adults’ trend tables, available at www.hscic.gov.uk/catalogue/PUB00480. These present unweighted estimates (directly comparable with previous years) and weighted estimates for 2003-2006. Children’s results in the 2006 tables are presented both with selection weighting only (directly comparable with previous years) and with selection and non-response weighting.

When the children’s trend tables were recalculated to present results in age groups from 2013, standard errors (shown in some tables) were 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.

In the previous 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 2013 and 2014 tables.

In the tables, '-' represents zero, and '0.0' represents a percentage less than 0.05 but not zero.

Population number estimates

Separate tables have been produced for key variables showing estimates of the numbers of people in the population, using prevalence data. These number estimate tables are available for adults for body mass index (BMI) categories, smoking, alcohol consumption, fruit and vegetable consumption and physical activity, and for children for BMI categories, fruit and vegetable consumption and physical activity. An introduction to these tables, with a technical note explaining how they are produced, is available with the number estimate tables.
References

1 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, Primatesa P (eds). Health Survey for England 2003. Volume 3: Methodology and documentation. The Stationery Office, London, 2004.


1 Blood pressure

Introduction

Hypertension (high blood pressure) is an important public health challenge worldwide because of its high prevalence and the associated increase in risk of other disease. It is one of the most important modifiable risk factors for cardiovascular, cerebrovascular and renal disease, and one of the most preventable and treatable causes of premature deaths worldwide.4

Clinical guidelines for hypertension emphasise the importance of physicians providing advice on modifiable lifestyle risk factors to reduce the overall rise5 of serious cardiovascular events.6 The environmental risk factors that have driven the epidemic of CVD include smoking, diets high in calories, saturated fats, carbohydrate and salt and low fruit and vegetable consumption, with the effects exacerbated by sedentary lifestyles.7 Management of people with hypertension, diabetes, or otherwise at substantial CVD risk includes assessing their risk of CVD and addressing other modifiable risk factors. Initially this involves lifestyle changes (smoking cessation, reducing alcohol consumption, increasing physical activity, weight loss if overweight, improved diet), followed by drug treatment of hypercholesterolaemia (high blood cholesterol), hyperglycaemia (high blood sugar levels), and/or hypertension, as appropriate.

Table 1 shows blood pressure level by survey year, age and sex; the trend is shown in Figure 1 below. High blood pressure is defined as a systolic blood pressure at or above 140mmHg or diastolic blood pressure at or above 90mmHg or on medication prescribed for high blood pressure, as described in the 2003 report.8 Data are presented for 2003-2014, using the Omron monitor to measure blood pressure, and using the 2003 survey definition. Before 2003, blood pressure was measured using a Dinamap monitor, and the definition included use of medication which affects blood pressure, rather than medication for blood pressure, as used since 2003. The 2006 trend tables presented blood pressure using Dinamap values (with a conversion from Omron to Dinamap from 2003-2006) and the earlier definition; these tables can be found at www.hscic.gov.uk/catalogue/PUB00480.

Table 1 - Blood pressure level using Omron values and 2003 definition, by survey year, age and sex

- The prevalence of hypertension in 2014 was at 32% among men and 27% among women, with little change over the last few years.
- Between 2003 and 2014, the proportion of the population with controlled hypertension increased from 5% among men and 6% among women to 10% among both sexes.
- Over the same period the proportion of adults with untreated hypertension decreased from 2003 to 2014 for both sexes (20% to 17% among men and 16% to 11% among women).

There are no general population figures for blood pressure in 2004 as only the boost sample was measured in that year.
Figure 1 Blood pressure levels, 2003-2014

Men

<table>
<thead>
<tr>
<th>Survey year</th>
<th>Hypertensive untreated</th>
<th>Hypertensive uncontrolled</th>
<th>Hypertensive controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>10</td>
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<td>10</td>
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<td>10</td>
</tr>
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</table>

Women

<table>
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<tr>
<th>Survey year</th>
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<th>Hypertensive uncontrolled</th>
<th>Hypertensive controlled</th>
</tr>
</thead>
<tbody>
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<td>2003</td>
<td>10</td>
<td>20</td>
<td>10</td>
</tr>
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</tr>
<tr>
<td>2014</td>
<td>10</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>
References


2 Height and weight

Table 2 - Mean height, by survey year, age and sex

- In 2014 the mean height of men was 175.6cm, and of women was 161.8cm. Between 1993 and 2014, mean height varied little from year to year, although across almost every age group the mean height in 2014 was slightly higher than in 1993.

Table 3 - Mean weight, by survey year, age and sex

- Between 1993 and 2014, mean weight increased from 78.9kg to 84.0kg among men and from 66.6kg to 71.1kg among women.
- Among men, mean weight increased least among those aged 16-24 (an increase of 2.0kg, from 73.1kg to 75.1kg between 1993 and 2014), and most among those aged 75 and over (an increase of 7.7kg from 73.2kg to 80.9kg). Among women, there was less variation in the increase across age groups.
3  Obesity

Introduction

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health.\(^9\) Being overweight or obese is associated with an increased risk for a number of common causes of disease and death including diabetes, cardiovascular disease and some cancers.\(^{10,11}\) For individuals classified as obese, the risk of poor health increases sharply with increasing BMI.\(^{12}\)

In England there has been increasing government interest in healthy lifestyles. In 2008, the government at the time announced its ambition, via the *Healthy Weight, Healthy Lives* programme, to be the first major country to reverse the rising tide of obesity and overweight in the population.\(^{13}\) With an initial focus on children, the aim was to reduce the proportions of children who were overweight or obese to the 2000 levels by 2020. There has been encouraging progress made on achieving the original ambition to halt the rise in child obesity expressed in the target set out in 2004,\(^{14}\) and the challenges ahead are to achieve a reduction in child obesity and to tackle adult obesity.\(^{15}\)

As part of the *Healthy Weight, Healthy Lives* strategy, the *Change4Life* campaign was launched in January 2009, with the aim of preventing people from becoming overweight by encouraging them to eat healthily and move more.\(^{16}\) The *Living Well for Longer* policy document aims to encourage local authorities and clinical commissioning groups (CCGs) to follow the lead of Public Health England in acting on obesity.\(^{17}\)

Table 4 - Body mass index (BMI), by survey year, age and sex

BMI is defined as weight in kilograms divided by the square of height in metres. Adult participants can be classified into the following BMI groups:\(^{18}\)

<table>
<thead>
<tr>
<th>BMI (kg/m(^2))</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18.5</td>
<td>Underweight</td>
</tr>
<tr>
<td>18.5 to less than 25</td>
<td>Normal</td>
</tr>
<tr>
<td>25 to less than 30</td>
<td>Overweight</td>
</tr>
<tr>
<td>30 and over</td>
<td>Obese</td>
</tr>
</tbody>
</table>

A further category, 40kg/m\(^2\) and over, representing those morbidly obese, is also shown.

- The proportion of adults with a normal BMI decreased between 1993 and 2014, from 41% to 33% among men and from 49% to 40% among women.
- Throughout the period, a higher proportion of men than women were overweight. There has been little change in the proportion who were overweight (41% of men and 31% of women in 2014).
- Between 1993 and 2014, there has been a marked increase in the proportion who were obese. This increased from 13% of men in 1993 to 24% in 2014 and from 16% of women in 1993 to 27% in 2014. Obesity prevalence increased steeply between 1993 and around 2000, and there was a slower rate of increase after that, with very little change in recent years. Prevalence of obesity has generally fluctuated between 24% and 27% from around 2006 to 2014.
Figure 2 Proportion of adults who were obese and overweight, 1993-2014

Estimates of the number of adults in the population for BMI categories from 2003-2014 are available in the number estimate tables.
Table 5 - Mean waist circumference and proportion with very high waist circumference, by survey year, age and sex

Waist circumference, a measure of central adiposity (body fat), has been measured in the core sample in a number of years of HSE: 1993-4, 1997-8, 2001-2003, 2005-2014. Table 5 shows the proportion of the population that has a 'very high' waist circumference, which is defined as greater than 102cm in men and greater than 88cm in women.

In previous years, 'very high' waist circumference has been categorised as 'raised'. The change is only to the name of the variable and the threshold for waist measurement remains unchanged. The 'very high' category is used in a National Institute for Health and Care Excellence (NICE) classification of health risk based on BMI and waist circumference. Note that this 'very high' definition is also used in Table 6.

- Consistently over the period of measurement, a higher proportion of women than men have had a very high waist circumference.
- Following the same pattern as for BMI, there have been significant increases between 1993 and 2014 for both men and women in mean waist circumference, and in the proportion with a very high waist circumference. As with BMI, the rate of increase has been slower in recent years.
  - Among men, the mean waist circumference has risen from 93.2cm in 1993 to 96.3cm in 2014, and the proportion with a very high waist circumference (more than 102cm) rose from 20% to 32%.
  - Among women, the mean waist circumference has risen from 81.7cm in 1993 to 87.7cm in 2014, and the proportion with a very high waist circumference (more than 88cm) rose from 26% to 45%.

Table 6 - Body mass index (BMI), waist circumference and health risk, by survey year and sex

Guidance from the National Institute for Health and Care Excellence (NICE) currently states that the assessment of the health risks associated with being overweight or obese should be based both on BMI and waist circumference in adults as follows:

<table>
<thead>
<tr>
<th>BMI classification</th>
<th>Waist circumference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Normal weight</td>
<td>No increased risk</td>
</tr>
<tr>
<td>Overweight (25 to less than 30kg/m²)</td>
<td>No increased risk</td>
</tr>
<tr>
<td>Obesity I (30 to less than 35kg/m²)</td>
<td>Increased risk</td>
</tr>
<tr>
<td>Obesity II (35 to less than 40kg/m²)</td>
<td>Very high risk</td>
</tr>
<tr>
<td>Obesity III (40kg/m² or more)</td>
<td>Very high risk</td>
</tr>
</tbody>
</table>

For men, low waist circumference in this classification is defined as less than 94cm, high as 94–102cm, and very high as greater than 102cm. For women, low waist circumference is less than 80cm, high is 80–88cm and very high is greater than 88cm. Note that for adults with a BMI of 35kg/m² or more, risks are assumed to be very high with any waist circumference.

- There have been significant increases for both men and women in the proportion found to be at very high risk and at high risk, although most of the increase took place
between 1993 and 2001 (from 22% to 32% for men, and from 26% to 37% for women).

- Since 2001, there has been some fluctuation but little change for men, with 13% at high risk and 21% at very high risk in 2014, giving a combined total of 34%.

- The picture is similar for women, but with a gradual pattern of continuing increase, from 15% at high risk in 2001 to 18% in 2014, and from 22% to 25% for very high risk. This gave an increase in the combined total from 37% to 43%.
References


18 In HSE 2003, the categorisation of BMI changed to reflect recent medical opinion which now regards it as more appropriate to define 18.5 to under 25kg/m² as desirable or ‘normal’ and less than 18.5 as undesirable or underweight. Reports for HSE 2003 onwards have used this revised definition, and for the purpose of trends analysis the revised definition has also been used for 1993 to 2002. This replaces the earlier definition of desirable weight of over 20 to 25kg/m². See Hirani V, Chapter 6: Anthropometric measures, overweight, and obesity in Sproston K, Primatesta P (eds). Health Survey for England 2003. Volume 2: Risk factors for cardiovascular disease. The Stationery Office, London, 2004.

19 Waist circumference was also measured among adults aged 65 and over in 2000.


4  Cigarette smoking

Introduction

Smoking is the single greatest cause of preventable illness and premature death in the UK. Figures from the report *Statistics on Smoking: England, 2015* showed that in England in 2013 smoking contributed to around 78,200 deaths, accounting for 21% of deaths in men and 13% of deaths in women aged 35 and over. These included around 36,800 deaths from cancers, 23,800 deaths from respiratory diseases, 16,700 deaths from circulatory diseases and 900 deaths from diseases of the digestive system. It is also estimated that around 4% (454,700) of all hospital admissions in England among adults aged 35 and over in 2013/2014 were attributable to smoking. The cost to the NHS of treating smoking related illness was estimated to be £5.2 billion per year in 2005/2006.

Since 1998, when *Smoking kills: a White Paper on tobacco* was published, cigarette smoking prevalence among adults has gradually declined from 28% to 19%. In 2004, the government set out its strategy to tackle smoking and the effects of smoking on other people in the white paper, *Choosing Health: Making healthy choices easier*. This stated that smoking rates among adults should be 21% or lower by 2010, with a reduction in prevalence among routine and manual occupational groups to 26% or less. Since then, a number of initiatives have been implemented, including the introduction of smokefree legislation in England from the 1st July 2007 banning smoking in workplaces and enclosed public places, the introduction of picture health warnings on cigarette packets from 1st October 2008, and raising the minimum age for sale of cigarettes from 16 to 18 from the 1st October 2007.

In 2010, the government published their comprehensive tobacco control strategy entitled *A Smokefree Future*. This included the aspirations to reduce adult smoking rates to 10% or lower by 2020 and halving current smoking prevalence rates among routine and manual groups and among those living in the most disadvantaged areas. In 2011, the Department of Health published a tobacco control plan for England, which included commitments to maintain the high price of tobacco at levels that impact on smoking prevalence, and to encourage more smokers to quit. Tobacco displays at the point of sale have been prohibited in supermarkets and large shops since April 2012 and in small shops from April 2015.

Table 7 - Self-reported cigarette smoking status, by survey year and sex

- Current smoking among men declined slowly between 1993 and 2006 (from 28% to 24%), but there was little overall change in prevalence between 2006 and 2013. In 2014 current smoking prevalence was 21%, continuing the gradual downward trend.

- The proportion of men who used to smoke regularly also declined overall from 33% in 1993 to 27% in 2014.

- The proportion of men who smoked 20 or more cigarettes per day fell from 11% in 1993 to 5% in 2014. The proportion who smoked fewer than 10 cigarettes or 10 to 19 cigarettes per day showed no statistically significant change over the same period (8% and 9% respectively in 2014).

- The proportion of women who were current smokers decreased from 26% in 1993 to 17% in 2014, while the proportion who had never regularly smoked increased from 52% to 62% in the same period.
As with men, there were no statistically significant changes in the proportion of women who smoked fewer than 10 cigarettes per day (7% in 2014). However, there was a significant decrease among women in those who smoked 10 to 19 cigarettes per day (11% in 1993 to 8% in 2014) and in those who smoked 20 or more cigarettes per day (from 8% to 2% over the same time period).

Figure 3 Proportion of adults who currently smoke cigarettes, 1993-2014

Table 8 - Self-reported cigarette smoking status, by survey year, age and sex

- The prevalence of cigarette smoking has consistently been highest among men aged 25-34 (29% in 2014). Older adults have always been the least likely to be current smokers (13% aged 65-74, 5% aged 75 and over in 2014).

- The prevalence of cigarette smoking has decreased between 1993 and 2014 in all age groups among both men and women. The largest decrease has taken place among women aged 16-24, from 32% to 16%.

Estimates of the number of adults in the population for self-reported cigarette smoking status from 2003-2013 are available in the number estimate tables.
References


www.gov.uk/government/publications/the-tobacco-control-plan-for-england
5 Alcohol consumption

Introduction

Drinking alcohol is generally recognised as an established part of British culture and most British adults drink alcohol, at least occasionally. Yet concern has increased in recent years among policy makers, health professionals and the general public about the damage caused by excessive drinking to individuals, communities and society as a whole. 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,27 Safe. Sensible. Social. The next steps in the national alcohol strategy in 2007,28 and The Government’s Alcohol Strategy in 2012.29

Alcohol has been identified as a causal factor in more than 60 medical conditions, including mouth, throat, stomach, liver and breast cancers; hypertensive disease (high blood pressure), cirrhosis and depression.30,31 The annual cost to the NHS of alcohol misuse has been estimated as £2.7 billion at 2007 prices.32 In England, hospital admissions related to alcohol consumption more than doubled in the last decade from 510,700 in 2002/3 to 1,059,210 in 2013/14; this includes 333,010 that were wholly attributable to alcohol as a primary or secondary cause in 2013/14.33 These trends have been ascribed to a long-term increase in the amount of alcohol drunk in this country. 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).34

There is evidence that the ways in which alcohol consumption affects health differ according to different patterns of drinking, for example relatively infrequent drinking of large amounts (often referred to as binge drinking), as opposed to drinking at lower levels but doing so habitually on most days.35

Over time, as households’ disposable incomes have increased, alcohol has become more affordable; in 2014, alcoholic drinks were estimated to be 53% more affordable than in 1980.33

The NHS advises that men should not regularly drink more than three to four units of alcohol per day, and women should not regularly drink more than two to three units of alcohol per day. ‘Regularly’ is defined as most days in the week. Pregnant women are advised to avoid alcohol altogether. 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’. Men who regularly drink more than eight units a day (or 50 units a week) and women who regularly drink more than six units a day (or 35 units a week) are considered to be at particular risk of harm, and are described as ‘higher risk’ drinkers.

Methods and definitions

Trends in alcohol consumption between 1998 and 2014 are shown in Table 9, based on the maximum amount drunk on any day in the last week. Up to 2002, and from 2011 to 2014, questions were also asked about usual weekly alcohol consumption, and Table 10 shows the most recent four years’ data. Trend tables from 1992-2002 based on weekly consumption were included in the 2005 trend tables.36 Since then there have been changes in the strength of beers and wines, and the conversion to alcohol units in the HSE had changed (see below), so no comparisons are drawn between the data up to 2002 and from 2011.
In 2011 the HSE questions on alcohol consumption were supplemented by a seven day drinking diary. While results are not shown in the trend tables, both interview and diary estimates of weekly drinking, and comparisons between the two, are presented in the 2011 report.\(^{37}\)

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.\(^{38}\) 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 now serve drinks in a broader range of measures.\(^{39}\) From 2006, changes have been made in the way the HSE and other surveys estimate alcohol consumption.\(^{40}\)

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 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.\(^{41}\) Table 9 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.\(^{42}\)

### Table 9 - Estimated maximum alcohol consumption on any day in the last week, by survey year, age and sex

- The proportion of men drinking more than 4 units on any day in the last week was significantly lower in 2014 (37%) than in 2006 (41%). There has been a gradual year-on-year decline from a peak of 43% in 2009. There was no change between 2012 and 2014.

- Similarly the proportion of men that drank more than 8 units dropped from 24% in 2006 to 19% in 2014, with the same gradual decline since 2009.

- There was a similar pattern of decrease among women: between 2006 and 2014 the proportion consuming more than 3 units on any day in the last week dropped from 33% to 25%.

- The proportion of women drinking more than 6 units dropped over the same period from 16% to 11%.

Estimates of the number of adults in the population for alcohol consumption (on the heaviest drinking day in the last week) from 2003-2013 are available in the number estimate tables.
Figure 4 Proportion of adults who drank more than the guideline amount on any day in the last week, 2006-2014

Table 10 - Estimated weekly alcohol consumption, by survey year, age and sex

- There has been little change in average weekly consumption of alcohol over the last four years for both men and women.
- In 2014, 15% of men and 22% of women reported that they did not drink any alcohol in the last year. Just under two thirds drank at levels indicating lower risk of harm: up to 21 units per week for men (63%) and up to 14 units per week for women (62%).
- 17% of men drank at an increased risk of harm (more than 21, up to 50 units per week), and 5% drank at higher risk levels (more than 50 units per week).
- 12% of women drank at increased risk levels (more than 14 units up to 35 units), and 4% drank at higher risk levels (more than 35 units per week).
References


39 The table below shows the original conversion factors used by the HSE until 2005 and the revised conversion factors used from 2006.
<table>
<thead>
<tr>
<th>Type of drink</th>
<th>Measure</th>
<th>Original equivalent units of alcohol</th>
<th>Revised equivalent units of alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal strength beer, lager, stout, cider, shandy (less than 6% ABV)</td>
<td>Pint</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Can or bottle</td>
<td>amount in pints multiplied by 2</td>
<td>amount in pints multiplied by 2³</td>
</tr>
<tr>
<td></td>
<td>Small cans (size unknown)</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Large cans or bottles (size unknown)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Strong beer, lager, stout, cider (6% ABV or more)</td>
<td>Pint</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Can or bottle</td>
<td>amount in pints multiplied by 3</td>
<td>amount in pints multiplied by 4³</td>
</tr>
<tr>
<td></td>
<td>Small cans (size unknown)</td>
<td>1.5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Large cans or bottles (size unknown)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Spirits and liqueurs</td>
<td>Glass (single measure)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sherry, martini and other fortified wines</td>
<td>Glass</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wine</td>
<td>Glass</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Alcopops</td>
<td>Small can or bottle</td>
<td>1</td>
<td>1.5</td>
</tr>
</tbody>
</table>

41 From 2007 the unit conversions for glasses of wine were as follows:

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

42 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 [www.hscic.gov.uk/catalogue/PUB00480](http://www.hscic.gov.uk/catalogue/PUB00480)
6 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.

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. Dietary goals to prevent chronic diseases emphasise eating more fresh vegetables, fruits, and pulses. 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. These guidelines state that everyone should eat at least five portions of a variety of fruit and vegetables every day. Fruit and vegetables may also play an important role in weight management when combined with reduced fat intake, and may reduce the risk of Type 2 diabetes and impaired cognitive function.

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). From 2011, the questions have been included in alternate years; the questions were therefore not included in 2012 or 2014.

Table 11 - Fruit and vegetable consumption, by survey year, age and sex

- For both men and women, the proportion consuming five or more portions per day increased from 22% among men and 25% among women in 2001 to a peak of 28% and 32% respectively in 2006. Since then, the proportion has dropped slightly, and in the last five years the proportions have been stable at around 24-25% of men and 27-29% of women meeting the recommendation.
Figure 5 Proportion of adults who ate five or more portions of fruit and vegetables per day, 2001-2013

Estimates of the number of adults in the population with different levels of fruit and vegetable consumption from 2003-2013 are available in the number estimate tables.
References

www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf


www.who.int/social_determinants/thecommission/finalreport/en/index.html

www.who.int/dietphysicalactivity/publications/trs916/en/

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

www.who.int/dietphysicalactivity/publications/f&v_weight_management.pdf


7 General health

Introduction

Self-assessed general health is an important indicator of the general health of the population. It is a valid measure for predicting future health outcomes and can be used to project use of health services and provide information useful for policy development. In older people, self-assessment of poor overall health has been associated with increased risk of mortality, and has also been reported to be predictive of functional decline.

Like self-reported general health, longstanding illness is a valuable indicator of the health of the population, and is also an important indicator of inequalities, with strong links between poverty, social class and self-assessed longstanding illness. As the population ages, the number of people with a longstanding illness or condition is expected to rise.

In 2012, the questions on longstanding illness were changed to be consistent with the harmonised disability questions designed for use in social surveys, as recommended by the Disability, Health and Carers Primary Standards in 2011. The new questions meet government requirements for the classification of disability for the core population with rights under the Equality Act. These questions explicitly ask about physical and mental health, separate the concept of disability from illnesses or health conditions, and refer to illnesses or conditions ‘lasting or expected to last 12 months or more’ rather than ‘over a period of time’.

Table 12 - General health, longstanding illness and acute sickness, by survey year and sex

- Between 1993 and 2014, the proportion reporting very good and good general health has fluctuated between 74% and 78% among men and between 73% and 76% among women (77% and 75% respectively in 2014), with no clear pattern of variation. The prevalence of very bad or bad general health has ranged from 4% to 8% across both sexes over the same period.

- The prevalence of longstanding illness among men increased overall from 40% in 1993 to around 44% between 1997 and 2003, but has decreased gradually over the last few years. It was 38% in 2011, with the original questions, and 37% in 2014 with the new questions.

- Among women, prevalence of longstanding illness increased from 40% in 1993 to 47% in 2004, but has since decreased and was 41% in 2011. It has remained at 41% between 2012 and 2014 using the new questions.

- Acute sickness is defined as any illness or injury (including any longstanding condition) that has caused the participant to cut down in the last two weeks on things they usually did. The prevalence of acute sickness ranged from 12% to 16% of men and from 14% to 19% of women over the period 1993 to 2014.
References


54 Further details about the change to the longstanding illness questions are provided in the 2012 report, Volume 2, Chapter 3, Section 3.4 and in Appendix D to Volume 2. www.hscic.gov.uk/pubs/hse2012
8 Cardiovascular disease

Introduction

Cardiovascular disease (CVD) is one of the leading contributors to the global disease burden. The single most common cardiovascular disease is ischaemic heart disease (IHD, also called coronary heart disease (CHD) or coronary artery disease (CAD)). IHD includes myocardial infarction (MI, heart attacks) and angina (chest pain on exertion due to inadequate blood flow to the heart muscle). The vast majority of CVD in England is caused by atherosclerosis (‘furring’ of the arteries). This is not only the case for IHD and for stroke, the two main diseases, but also for aortic aneurysm and peripheral vascular disease, with impaired blood flow to the limbs.

Over the second half of the 20th century, there was a fairly steady decrease in mortality due to CVD in England and Wales. In 1999, CHD was made a government priority, with the introduction of the National Service Framework for CHD following in 2000. The goal was to reduce death from CHD and related illnesses in the under 75s by 40% by the year 2010. This target was reached ahead of schedule. Between 2000 and 2010, age-standardised CVD mortality rates in England and Wales for males and females fell by 40% and 38% respectively.

Despite a reduction in deaths from CVD, these diseases remain the most common cause of death and still cause a large proportion of morbidity in this country. In England and Wales in 2011, CVD accounted for 29% of all deaths. This includes the 16% of male deaths and 11% of female deaths which were due to IHD, the leading cause of death in both sexes. Stroke was the second leading cause of death for both men and women in England and Wales in 2011, accounting for 6% of male and 9% of female deaths. 25,122 men and 11,456 women under 75 died from CVD, 26% and 18% of deaths respectively in men and women under 75 in 2011.

Table 13 - Prevalence of IHD, stroke, IHD or stroke (ever), by survey year, age and sex

- In both men and women there was an increase in prevalence of IHD between 1994 and 1998, when the highest prevalence of IHD was recorded (7.1% for men and 4.6% for women). Prevalence of IHD has generally fallen since then to 5.7% in men and 3.5% in women in 2011.

- Prevalence of stroke in women followed a similar pattern, with an increase between 1994 and 1998 (from 1.6% to 2.1%); however prevalence has been fairly constant since then, being 2.1% in 2011. In contrast the prevalence of stroke in men has increased over time, rising by nearly one percentage point from 1.8% in 1994 to 2.7% in 2011.

There are no figures available for cardiovascular disease since 2011.
References


9 Diabetes

Introduction

Diabetes is characterised by high blood glucose levels (hyperglycaemia). Untreated, hyperglycaemia is associated with damage and possible failure of many organs, especially the eyes, kidneys, nerves, heart, and blood vessels. Diabetes substantially increases the risk of cardiovascular disease (CVD), and tends to worsen the effect of other risk factors for CVD such as dyslipidaemia (abnormal levels of blood fats), hypertension, smoking and obesity. Being overweight or having a very high waist measurement are risk factors for Type 2 diabetes. 

Diabetes mellitus (including Types 1 and 2) is a leading cause of avoidable mortality; it is estimated that 11.6% of all deaths among those aged 20–79 in England in 2005 were as a result of diabetes.

The Department of Health’s National Service Framework for Diabetes, published in 2003, set out a ten-year programme of change to deliver world class care and support for people with diabetes. This recommended an agreed care plan, a personal diabetes record and named contact within the local service for all people diagnosed with diabetes, or with poor blood glucose control (glycated haemoglobin above 7.5%). In 2011, the National Institute for Health and Care Excellence (NICE) published quality standards for the care of people with diagnosed diabetes in addition to those set out in the National Service Framework.

The HSE interview makes no distinction between Type 1 and Type 2 diabetes because of changing patterns of the disease. In previous years it was assumed that participants who reported having doctor-diagnosed diabetes before the age of 35 and who were having insulin therapy at the time of the survey had Type 1 diabetes, and all other participants with doctor-diagnosed diabetes were classified as having Type 2 diabetes. However, small but increasing numbers of people are now being diagnosed with Type 2 diabetes below the age of 35, and some adults with Type 2 diabetes are now prescribed insulin therapy, so these distinctions are no longer reliable.


Table 14 - Prevalence of diabetes, by survey year, age and sex

- Prevalence has increased significantly between 1994 and 2014, with some year-on-year fluctuation, from 2.9% to 7.1% among men and from 1.9% to 5.3% among women.
- There was a different pattern among younger and older adults. While there was relatively little change in prevalence over the period in those aged 16-24 (among whom diabetes has remained below 1% throughout), a substantial increase in prevalence was seen among every other age group. Between 1994 and 2014, prevalence rose from 7.5% to 17.2% among men aged 75 and over, and from 5.2% to 13.8% among women in this age group.
The trend of increasing prevalence over time of doctor-diagnosed diabetes is mostly related to an increase in diagnosis, and a smaller true increase in prevalence of diabetes. The HSE provides an estimate of the prevalence of undiagnosed diabetes, identified from analyses of glycated haemoglobin (HbA$_{1c}$) in blood samples taken from survey participants. This was most recently reported in the 2011 report.

Increases both in doctor-diagnosed and undiagnosed diabetes are probably related to rising levels of obesity among the general population in England; obesity has increased substantially since the early 1990s (see Tables 4 and 5). This continuing increase in the prevalence of diabetes within HSE data is supported by findings taken from the Quality and Outcomes Framework (QOF) between 2006/7 and 2012/13.
References


10 Physical activity

Introduction

Lack of physical activity is the fourth most important risk factor worldwide for chronic, non-communicable diseases, after tobacco use, raised blood pressure, and hyperglycaemia (raised blood sugar). Worldwide, it accounts for 6% of the burden of disease from ischaemic heart disease, 7% of Type 2 diabetes, and 10% of breast and colon cancers. It is estimated to have caused more than 5.3 million premature deaths worldwide in 2008 (9% of all premature deaths). In the UK, inactivity has been estimated to cause 3% of disability-adjusted years of life lost in 2002 and a direct cost to the NHS of £1.1billion, with indirect costs to society bringing this cost to a total of £8.2billion.

As evidence accrues about the amount, type, and pattern of physical activity that is beneficial for health, the guidelines from expert groups and governments have been modified to take account of new knowledge. From 1994 the recommendation for adults was at least 30 minutes of activity that was of at least moderate intensity on at least five days each week. This was modified in 2004 to allow the 30 minutes within a day to be accrued in bouts of at least 10 minutes’ duration. In 2011, the Chief Medical Officers of the four UK countries introduced revised guidelines for physical activity that reflect current evidence on what is needed to benefit health and the incremental benefits from undertaking physical activity. Guidelines were revised to encourage adults to meet the recommendation through undertaking specified amounts of vigorous or moderate activity each week: at least 150 minutes of moderate activity, in bouts of 10 minutes or longer, or 75 minutes of vigorous activity, or a combination of the two. This should preferably be spread over the week, for example by being moderately active for 30 minutes on at least five days a week. This recognises that the overall volume of physical activity is more important than the specific type of activity or frequency of sessions. As well as the guidelines for aerobic activity there are also guidelines for muscle-strengthening activities; and activities to improve balance and co-ordination.

Methods and definitions

Table 15 shows the proportion achieving different levels of physical activity in 1997, 1998, 2003, 2004, 2006, 2008 and 2012. These levels are based on self-reported activities in the last four weeks. For 2008, the module of questions on physical activity was revised and an enhanced questionnaire was developed. Full details of the questionnaire revisions are provided in the 2008 report, the main changes for 2008 were:

- additional questions to provide more accurate data on occupational activity and sedentary time
- more detail about certain types of exercise
- allowing bouts of 10 minutes of activity to be accrued towards meeting government physical activity recommendations.

Minor further revisions were made in 2012, as described in the 2012 report. Results for 2008 and 2012 are calculated in two ways: using the 'original' method directly comparable with previous years and based on the previous government recommendations for physical activity; and in a 'revised' method using the enhanced questionnaire and the revised government recommendations.

In previous years the physical activity levels have been labelled high, medium and low; in 2008 the categories were renamed to describe more accurately what they represent. The category formerly labelled 'high' is in fact the group that meets government
recommendations for the minimum level of activity to achieve health benefits (e.g. reduction in the relative risk for cardiovascular morbidity). Definitions of the categories are as follows for the original and revised estimates:

<table>
<thead>
<tr>
<th>Meets recommendations</th>
<th>Original</th>
<th>Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30 minutes or more of moderate or vigorous activity on at least five days per week</td>
<td>At least 150 minutes moderate or 75 minutes vigorous activity per week or an equivalent combination of these</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Some activity</th>
<th>Original</th>
<th>Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30 minutes or more of moderate or vigorous activity on one to four days per week</td>
<td>60-149 minutes moderate or 30-74 minutes vigorous activity per week or an equivalent combination of these</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low activity</th>
<th>Original</th>
<th>Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower levels of activity</td>
<td></td>
</tr>
</tbody>
</table>

Table 15 - Levels of physical activity, by survey year, age and sex

- Using the original method to obtain directly comparable measures between 1997 and 2012, the proportion of adults meeting recommendations for levels of physical activity increased among both men and women. There has been a steady increase over the period, from 32% in 1997 to 43% in 2012 for men, and from 21% to 32% for women.
- For both sexes, the proportion meeting the recommendation was similar in 2008 and 2012.
- Among men the proportion reaching this level of activity decreased steadily as age increased. Among women, the proportion meeting recommendations was higher among those aged 25-44 than those aged 16-24; there was a steady decline in older age groups.
- The revised method for estimating adults' levels of physical activity, taking advantage of the 2008 questionnaire enhancements and using the new guidelines, provided higher estimates of the proportion of adults meeting government recommendations for physical activity. The revised method indicated that, in 2012, 66% of men and 54% of women aged 16 and over met these new guidelines, compared with 43% and 32% respectively using the original method and the previous guidelines.
- As with the original method, revised results for 2008 and 2012 were very similar.
- With the revised method there was a similar pattern of decreasing proportions meeting the new recommendations as age increased among men, and decreasing from middle age among women.

An objective measure of physical activity, using accelerometry, was also obtained in 2008. Details are provided in Chapter 3 of the 2008 report. The 2008 and 2012 reports also provide information about sedentary behaviour.

Estimates of the number of adults in the population for physical activity categories for 2008 and 2012 are provided in the number estimate tables, using both the original and the revised methods. Estimates based on the original methods are also available for 2003, 2004 and 2006.

There are no figures available for physical activity in 2013 or 2014.

References

Ischaemic Heart Disease, or IHD, is also called coronary heart disease (CHD) or coronary artery disease (CAD).


[www.hscic.gov.uk/catalogue/PUB00430](http://www.hscic.gov.uk/catalogue/PUB00430)


[www.hscic.gov.uk/catalogue/PUB00430](http://www.hscic.gov.uk/catalogue/PUB00430)
11 Well-being

Introduction

Well-being is an important element of people’s overall health. Mental well-being is not just the absence of mental ill health; it includes the way that people feel about themselves and their lives. While there is no one definition of mental well-being, it is generally thought to be made up of things like positive affect (experience of positive emotions), people’s perceptions that the things they do in their lives are meaningful and worthwhile, and life satisfaction.

Well-being is an area of focus for the government and in developed countries stands alongside more traditional measures such as gross domestic product (GDP) in telling the story of how well a nation is doing. The white paper *Healthy Lives, Healthy People: our strategy for public health in England* sets out the government’s strategy to improve the health and well-being of the nation in the coming years. Part of this strategy involves a ‘radical new approach’ to the challenge of inequalities in health and well-being, by shifting power and responsibility for public health to a local level. The emergence of statutory health and well-being boards will bring key leaders in health and social care together to discuss how to work together to improve health and well-being of the local population and reduce inequalities.

Positive mental well-being is predictive of quality of life, improved life expectancy and greater life satisfaction. It is also linked to people’s physical health and recovery from both physical and mental ill health.

The HSE has included the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) since 2010. The WEMWBS was developed to capture a broad concept of positive mental well-being. WEMWBS has 14 statements which cover different aspects of well-being, and a Well-being Index or score is calculated, which can range from 14 to 70. Chapter 5 in the 2012 HSE report provides details of the scoring, and examines the relationships found between subjective mental well-being and a range of health and health related lifestyle factors in the adult population of England.

Mean well-being scores and selected centiles are shown in Table 16. Centiles are values of a distribution that divide it into 100 equal parts. For example, the 10th centile is the value of a distribution where 10% of the cases have values at or below the 10th centile and 90% have values above it. The 50th centile is the median.

Table 16 - Well-being scores (WEMWBS), by survey year, age and sex

- Mean well-being scores have remained stable across the five years of measurement, between 51 and 53 for both men and women. The mean for all adults was 50.8 in 2014.

- In 2014, the 90th centile score for adults was 62, while the 10th centile score was 39 (with very similar scores for men and women).
References


88 The Warwick-Edinburgh Mental Well-being Scale was funded by the Scottish Government National Programme for Improving Mental Health and Well-being, commissioned by NHS Health Scotland, developed by the University of Warwick and the University of Edinburgh, and is jointly owned by NHS Health Scotland, the University of Warwick and the University of Edinburgh.


12 Children’s height and weight

Introduction

Infants (aged 0-1) were first included in the survey in 2001. Therefore, trends in height, weight and obesity are examined separately for the periods 1995 to 2014 (ages 2-15) and 2001 to 2008 (ages 0-15). Note that from 2009 onwards, while children aged 0-1 were included in the survey, infant length was not measured, and therefore there are no height or BMI data for this age group in these years, nor for children aged 0-15.

Table 1 – Children’s mean height, by survey year, age and sex

- Mean height for children aged 2-15 increased between 1995 and around 2003-2004. The increase was from 131.9cm in 1995 to 136.3cm in 2004 among boys, and from 130.6cm in 1995 to 135.4cm over the same period among girls. There has been no significant change in mean height for either sex since 2003, with mean height in 2014 at 134.8cm for boys and 131.3cm for girls.

- There was no clear pattern of trends within different age groups.

Table 2 – Children’s mean weight, by survey year, age and sex

- Between 1995 and 2003, mean weight of children aged 2-15 increased overall from 33.0kg to 36.2kg among boys, and from 32.8kg to 35.6kg among girls. There was an apparently anomalous result in 2004 showing a further increase, but based on a very small sample.

- From 2003-2014 there was little variation in mean weight for boys or girls (apart from 2004). In 2014 mean weight was 34.9kg among boys aged 2-15 and 33.6kg among girls. As with mean BMI and levels of obesity, shown in Tables 3 and 4, the trend appears to be flattening out after a period of increase.

- Patterns for children aged 0-15 were similar to those for children aged 2-15. The mean for boys changed little between 2003 and 2014 (apart from 2004), being 32.1kg in 2014. Among girls aged 0-15, mean weight in 2009-2014 was closer to the 2001 level than the 2003 level, being 31.3kg in 2013.
13 Children’s mean body mass index and obesity

Introduction

There is considerable evidence that children who are overweight or obese may face numerous long-term and immediate health risks. Childhood and adolescent obesity can persist into adulthood,\(^91\) where the direct health risks of obesity are severe and well established, and being overweight or obese as a child or adolescent has been linked directly to middle-age mortality and morbidity.\(^92,93,94\)

Over past years there have been many policies and strategies aimed at tackling obesity, such as the White Paper *Choosing Health: Making Healthier Choices Easier*, which aimed to prevent any further rises in obesity among children under 11.\(^25\) In November 2010 the government announced an ongoing strategy to improve public health in its white paper *Healthy Lives, Healthy People: Our Strategy for Public Health in England*.\(^85\) The paper set out key areas to focus on in its aim to improve the lives of people in the UK. These included the continued support for school-aged children through the *Healthy Child Programme*,\(^95\) and assistance with local services to tackle overweight and obesity levels through the *National Child Measurement Programme*.\(^96\) Following this 2010 white paper, *The Public Health Responsibility Deal*\(^97\) was announced in 2011, with a view to encouraging local businesses and the voluntary sector to support people to live healthier lives by informing their lifestyle choices in areas such as healthy eating and physical activity. Preventative measures were also outlined in the 2009 *Change4Life* campaign\(^16\) which focused on encouraging families to eat healthily and improve levels of physical activity.

In October 2011, these commitments were reinforced by a further pledge to tackle overweight and obesity levels in the context of the new structure of the NHS and Public Health England. *Healthy Lives, Healthy People: a call to action on obesity in England*\(^98\) set out rigorous plans to engage people in healthier lifestyles across all life stages, starting from pre-conception (via parents) through to old age. The degree to which obesity and overweight levels have become a problem was acknowledged in the paper and recommendations were centred around local and national level partnerships, with a view to reducing excess weight by 2020.

Table 3 – Children’s mean body mass index (BMI), by survey year, age and sex

Body mass index (BMI) is defined as weight in kilograms divided by the square of height in metres. The UK National BMI centiles have been used to define ‘overweight’ and ‘obese’ in children as at or above the 85\(^{th}\) and 95\(^{th}\) BMI centiles respectively of the 1990 reference population.\(^99\)

- Mean BMI increased between 1995 and 2014 by 0.5kg/m\(^2\) among boys aged 2-15 (from 17.7kg/m\(^2\) to 18.2kg/m\(^2\)), and by 0.3kg/m\(^2\) for girls (from 18.1kg/m\(^2\) to 18.4kg/m\(^2\)). With fluctuations from year to year, overall increases in mean BMI were evident for both boys and girls during this period. For the last few years mean BMI has been slightly lower than the peak around 2004/2005.
Table 4 – Children’s overweight and obesity prevalence, by survey year, age and sex

- Childhood obesity has increased significantly since 1995, when 11% of boys and 12% of girls aged 2-15 were obese. The prevalence of obesity increased steadily in most years up to around 2004 and 2005, where it peaked at 18% to 19% among both boys and girls. Levels have been slightly lower than this peak in most of the last few years.

- The proportion of children who were obese in 2014 was not statistically significantly different from the previous three years. The prevalence of obesity among girls aged 2-15 was 16% in 2014. However, obesity among boys in 2014 (19%) reached the same peak level as in 2004. Further years’ data will be needed to see if there is a renewed upward trend or whether the level in 2014 among boys is due to random variation.

- The proportion of children who were overweight varied less over the period than the proportion who were obese. In 1995, 13% of boys and girls were overweight, and in 2014, these proportions were 13% and 15% respectively.

Figure 7 Proportion of children aged 2-15 who were obese, 1995-2014

- The trend in obesity has been broadly similar from 1995 to 2014 for older children (aged 11-15) and younger children (aged 2-10). There was a pattern of increase up to the peak around 2004 and 2005.

- Since 2005 the proportion of boys aged 11-15 who were obese has fluctuated between 18-24% (22% in 2014). The pattern for girls in this age group has also fluctuated, but generally at a slightly lower level (18% in 2014).

- Among children aged 2-10, there was a slight dip in the proportion who were obese in 2011/2012, but this has not been sustained, with 17% of boys and 14% of girls aged 2-10 who were obese in 2014.

Estimates of the number of children in the population for BMI categories from 2003-2014 are available in the number estimate tables.
References


100 In 2008, the definitions for children who were overweight or obese were revised from those used in previous years to correct an error which meant that small numbers of children that should have been classified as either ‘overweight’ or ‘obese’ were omitted from these categories because of rounding of age and BMI thresholds. The revised percentages of those overweight or obese in each year differ by less than 0.1 – 1.1 percentage points from those originally published, and 0.3% - 1.2% of children in each year were misclassified. In no cases were results significantly different from those presented previously. Some percentages appeared to have increased because of rounding. Data for 1995-2007 have been corrected in the trend tables.
14 Children’s cigarette smoking

Introduction

Many children suffer ill-health from smoking, which includes respiratory illness and increased risk of cancer and cardiovascular disease. There is also evidence of an association between children smoking and other risky behaviours such as using alcohol or drugs. Those who start smoking during childhood are more likely to continue smoking as adults, and less likely to give up than those who start smoking in later life. They are also likely to consume more cigarettes and suffer from a greater addiction to tobacco.

In addition to targets to reduce overall smoking prevalence among adults that have been set out in Department of Health publications over the last decade, the 1998 White Paper Smoking Kills set a target to reduce smoking prevalence among 11-15 year olds to 9% by 2010. The Health Act 2006, as well as introducing smokefree legislation, introduced a further change in the law aimed at reducing the prevalence of smoking among young people. As a result, from October 2007 it became illegal to sell cigarettes to anyone under the age of 18. The 2009 Health Act included measures to prohibit the display of tobacco products at the point of sale and create powers to control the sale of tobacco from vending machines. The intention is to reduce further the impact of tobacco on the health of the public and future generations, by protecting children and young people from the harmful effects of smoking.

Children aged 8-15 are asked about cigarette smoking in the HSE interview. The questions are presented in a self-completion booklet, to allow the child to answer without revealing their answers to their parents. Trends are examined between 1997 and 2014, as the questions were changed in 1997.

Table 5 – Children’s self-reported cigarette smoking status, by survey year, age and sex

- The proportion of children aged 8-15 who had ever smoked has decreased overall, from 18% of boys and 20% of girls in 1997 to 6% of boys and 5% of girls in 2014.
- In all survey years, the proportion of boys and girls who had ever tried smoking generally increased with age, being much higher among those aged 13-15 than among younger children, as shown in Figure 8. The downward trend was apparent in all the age groups. In 2014, very few under the age of 13 had ever tried smoking: 1% of those aged 11-12, and less than 0.5% of those aged 8-10.
Figure 8 Proportion of children aged 8-15 who had ever smoked cigarettes, 1997-2014
References


104 Office of Public Sector Information. The Health Act 2006. www.opsi.gov.uk/ACTS/acts2006/ukpga_20060028_en_1


15 Children’s experience of alcohol

Introduction

The 2007 Home Office report Safe. Sensible. Social. The next steps in the Alcohol Harm Reduction Strategy reviewed progress since the Government’s Alcohol Harm Reduction Strategy was launched in 2004, and outlined renewed proposals to tackle the problems associated with alcohol misuse.28 The report identified underage drinkers as one of three problem groups to be specifically targeted. The objectives for young people focused on educating them about making responsible choices about alcohol and restricting the supply of alcohol to underage drinkers. Proposed measures included tougher law enforcement to prevent underage sales and clearer guidelines to young people and parents about the effects of youth alcohol use.

England has been identified as having one of the highest rates of regular drinking and drunkenness among young people in Europe.107,108 Although there has been no clear trend in the prevalence of drinking among under-16s in recent years, consumption levels appear to be on the rise among those who do drink. Particular concern has been raised about increasing levels of consumption within the 11-13 age group and among adolescent girls.28,109

The Department for Children, Schools and Families (DCSF) published the Youth Alcohol Action Plan110 in 2008, and in 2009, the Department of Health published guidance from the Chief Medical Officer of England on alcohol consumption by children and young people.111 This includes a recommendation that children under the age of 15 do not drink any alcohol at all and that alcohol consumption for 15-17 year olds should be under the supervision of a parent or carer.

Children aged 8-15 are asked about cigarette smoking in the HSE interview. The questions are presented in a self-completion booklet, to allow the child to answer without revealing their answers to their parents. Trends for children aged 8-15 are examined between 1999 and 2014, as the questions were changed in 1998 and questions on alcopops were added for children aged 8-12 in 1999.

Table 6 – Children’s self-reported experience of alcohol, by survey year, age and sex

- The prevalence of boys aged 8-15 ever having had a proper alcoholic drink (including alcopops) ranged from 42% to 47% between 1999 and 2003, dropping in the following years to 16% in 2014. While year-on-year changes have not been statistically significantly different, there has been a significant change since 2011.

- The proportion of girls aged 8-15 who had ever had a proper alcoholic drink varied between 39% and 43% from 1999 to 2004, and following the same pattern as for boys has dropped since then to 18% in 2013.

- As with smoking (see Section 14), the proportion who had ever had a proper alcoholic drink increased from younger to older children. Only small proportions of younger children have tried drinking: 2% aged 8-10 and 10% aged 11-12, compared with 34% aged 13-15 in 2014.

- Figure 9 shows that the downward trend in ever having had an alcoholic drink has been steepest in the last few years among children aged 13-15.
Figure 9 Proportion of children aged 8-15 who have ever had a proper alcoholic drink, 1999-2014
References


16 Children’s fruit and vegetable consumption

Introduction

The protective health benefits of a diet rich in fruit and vegetables have been long recognised for both adults and children. Diet plays a key role in shaping children’s health both now and later in life. A childhood diet abundant in fruit and vegetables can ensure an adequate intake of many essential nutrients and can help displace foods high in saturated fats, sugar and salt.46

Many government papers have raised concerns about children’s diet and a number of initiatives have been launched to educate children about healthier food options. For example, The National Healthy Schools Standard, part of the National Healthy Schools Programme, was implemented in 1998 and was designed to encourage schools to consider diet and nutrition in a variety of aspects of school life.112

Following the 1997 white paper Excellence in Schools,113 and 2003 Green Paper Every Child Matters,114 in which the government pledged to help all schools to become healthy, there has been a focus on implementing initiatives in schools which aim to educate and provide children with healthy food options, in particular wider access to fruit and vegetables. These include the School Fruit and Vegetable Scheme,115 breakfast clubs and fruit tuck shops. The School Fruit and Vegetable Scheme was introduced in 2004 as part of the 5 A DAY programme to reinforce messages about improving children’s diets and to minimise the health inequalities experienced by some groups of the population.

In an attempt to remove the inequalities that exist in accessing a healthy nutritious diet, the government’s 2005 Food and Health Action Plan116 set out a strategy to promote a healthy balanced diet. This framework focused on improving access to, and increasing the average consumption of a variety of fruit and vegetables to at least five portions per day. The 5 A DAY programme, introduced in 2000, is aimed at encouraging the population to increase their consumption of fruit and vegetables.

Fruit and vegetable consumption is measured among children aged 5-15 in the HSE interview, using the same questions as for adults (see Section 6).

Table 7 – Children’s fruit and vegetable consumption, by survey year, age and sex

- The proportion of children aged 5-15 eating 5 or more portions of fruit and vegetable consumption increased from 16% in 2013 to 23% in 2014. Results are very similar for boys and girls.

- The proportion of children eating five or more portions per day was 11% in 2003 and then increased to 21% in 2006. Between 2007 and 2011 the prevalence of meeting the 5 A DAY target fluctuated between 21% and 18% and then fell to 16% in 2013. This broadly mirrors the pattern for adults, where there was a peak around 2006 and lower levels since then (see Adults Table 11).

- Between 2001 and 2004, the mean number of portions of fruit and vegetables consumed among children aged 5-15 was stable with no statistically significant variation and was between 2.5 and 2.7 portions. There was an increase to 3.3 portions in 2006 and 2007 and then it stayed at around this level until it fell to 3.1 portions in 2011. In 2014 it increased somewhat to 3.5 portions.
Figure 10 Proportion of children aged 5-15 who ate five or more portions of fruit and vegetables per day, 2001-2014

Estimates of the number of children aged 5-15 in the population for fruit and vegetable consumption from 2003-2013 are available in the number estimate tables. There are no figures available for fruit and vegetable consumption in 2012 because it was not collected in the survey that year.
References

112 NHS and Department for Children, Schools and Families. *Introduction to the National Healthy Schools Programme.*


115 Department of Health. *School Fruit and Vegetable Scheme.*


17 Children’s general health

Introduction

Information was collected for children, as for adults, about self-reported general health, longstanding illness and acute sickness. See Section 7 for details about these measures.

There are no figures available for longstanding illness among children in 2010, and results for 2011 are based only on 3 months’ data, so bases are small. The questions on longstanding illness were changed in 2012, as described in the section on adult longstanding illness.

Acute sickness is defined as any illness or injury (including any longstanding condition) that has caused the participant to cut down in the last two weeks on things they usually did.

Parents answered on behalf of children aged 0-12, and children aged 13-15 answered their own questions, with a parent or guardian present.

Table 8 - Children’s general health, by survey year, age and sex

- Over the period from 1995 to 2014, at least 90% of boys and girls reported very good or good general health. The proportion of children reporting very good or good health increased overall between 1995 and 2014, from 90% to 94% among boys and from 92% to 95% among girls.

Table 9 - Children’s longstanding illness, by survey year, age and sex

- While year on year changes were generally small, the prevalence of both longstanding and limiting longstanding illnesses appears to have decreased since 1995.
- Longstanding illness declined between 1995 and 2003 from 23% to 20% among boys, and from 20% to 16% among girls. Levels remained generally similar between 2003 and 2009. Since 2012 when the questions were changed, the proportion with longstanding illness has been slightly lower than in the previous few years (17% for boys, 15% for girls in 2014).
- Limiting longstanding illness among boys was at a similar level in 1996 and 2014 (10% and 9% respectively), while the proportion among girls declined slightly over the period from 9% to 6%.

Table 10 - Children’s acute sickness, by survey year, age and sex

- Prevalence of acute sickness generally varied between 8% and 14% for boys and girls up to 2014. However, levels for both boys and girls have been at the lower end of the range in the last three to four years, and this may indicate a slight downward trend.
Questions on longstanding illness were not asked of children in the survey in 2010 due to a routing error in the questionnaire. The error was corrected from October 2011. Results for 2011 are therefore based on small numbers, and margins of error are relatively wide, so the data should be interpreted with caution. No age breakdown is available for 2011.
18 Children’s physical activity

Introduction

Physical activity is important for children. Obesity is a major adverse health consequence of physical inactivity, although not the only one. It is not always appreciated that physical inactivity in childhood also has direct health consequences, both in the short- and mid-term. In pre-school children, physical activity is critical for reduced body fat, improved bone and muscle strength, motor development, and psychosocial health, as well as being important for cardio-metabolic health (blood pressure, blood lipids (fats) and insulin sensitivity).\textsuperscript{118,119}

In school-aged children, periodic physical activity can increase academic achievement, increase attention, and improve behaviour and attitudes, as well as increasing physical health.\textsuperscript{120} This may be through improving cognitive control, enhancing choice instead of impulse.\textsuperscript{121} Greater physical fitness is also related to better brain function and reduced reaction times.\textsuperscript{121}

Physical activity sufficient to improve aerobic fitness can reduce blood pressure in children with hypertension, reduce blood lipids (fats), and reduce adverse metabolic profiles. Muscle-strengthening exercise has similar but lesser effects.\textsuperscript{122} Physical activity alone can improve insulin resistance risk, even without weight loss.\textsuperscript{123}

The 2011 report from all four Chief Medical Officers across the UK Start Active, Stay Active\textsuperscript{80} included a call for a concerted effort ‘to create environments and conditions that make it easier for people to be more active and less sedentary’. Such actions included prioritising cycling as a mode of travel; involving town and transport planners to facilitate safe walking and cycling to school; community-level programmes, including parks and playgrounds; programmes aimed at reducing sedentary behaviour, including leisure-time screen use; promoting movement in children in the early years, through interventions with nursery professionals; and programmes to stimulate play in young people, including low-cost play schemes open to all.

The evidence on the benefits of physical activity and the amount of activity recommended for health was reviewed in 2010\textsuperscript{81} for the Chief Medical Officers of the four UK countries, who published new recommendations in 2011.\textsuperscript{80} For the first time, guidelines were published for children under five. Those able to walk unaided are recommended to be active for at least 180 minutes (3 hours) per day, spread throughout the day.\textsuperscript{124} The 2011 recommendations for children aged 5 to 18 are twofold. As previously, it is recommended that children should be at least moderately active for at least 60 minutes every day, though it is stated specifically that this is a minimum. It is also recommended that vigorous intensity activity, including muscle- and bone-strengthening activities, should be undertaken at least three days each week.\textsuperscript{125}

Methods and definitions

Table 11 shows the proportion of children aged 5-15 in different physical activity categories for 2008 and 2012, based on reported physical activity in the last week (with parents answering on behalf of children aged 5-12). Results are based on a new questionnaire introduced in 2008, which is the preferred method. There was concern about the accuracy of the data collected from the previous physical activity questions, given the high proportions of children that were found to be meeting government recommendations according to the assumptions on which the analysis was based.\textsuperscript{126}
For the 2008 survey, the children’s physical activity questions were extensively revised to allow more accurate estimation of children’s activity. The key changes were:

- A new division of sports and activities into formal and informal; and in addition to the activities on the show cards, participants were asked about any other similar activities they had done, and these were recorded individually.
- For each activity undertaken, participants were asked on which specific day(s) in the last week they had done them, rather than on how many weekdays and weekend days.
- For each day that the participant had done an activity, they were asked how long they had done it (in hours and minutes), rather than giving an average for all the days using half hour bands.

The 2012 questionnaire was identical to that used in 2008.

Summary activity levels are used in the analysis, based on the Chief Medical Officer’s (CMO’s) recommendations for physical activity of at least moderate intensity for children and young people, and are defined as follows:

- Meets recommendations: active for at least 60 minutes on seven days
- Some activity: active for 30-59 minutes on seven days
- Low activity: lower level of activity than that described above

**Table 11 – Children’s physical activity levels (new questionnaire), by survey year, age group and sex**

- Among boys, there was a significant decrease in the proportion meeting physical activity recommendations between 2008 and 2012, falling from 28% in 2008 to 21% in 2012. The corresponding change among girls was not significant, with 19% in 2008 and 16% in 2012 meeting recommendations.

- Among both boys and girls, the decrease in the proportion meeting recommendations was particularly marked in the oldest age group. 28% of boys and 14% of girls aged 13-15 met the current guidelines in 2008, compared with 14% and 8% respectively in 2012. It should be noted that (in both years) these estimates exclude both activities during school hours and active travel to and from school, and thus potentially underestimate the proportion of children meeting current recommendations.

An objective measure of physical activity, using accelerometry, was also obtained in 2008. Details are available in the 2008 report.

Estimates of the number of children aged 5-15 in the population for physical activity categories for 2008 and 2012 are available in the number estimate tables.

There are no figures available for physical activity in 2013 or 2014.
References


126 The 2011 trend tables presented physical activity results for 2002, 2006 and 2007, using the old questionnaire; these tables can be found at www.hscic.gov.uk/catalogue/PUB09302.


128 Accelerometry is widely used in research into physical activity as it provides an objective measure of activity levels. Measurements are recorded by accelerometers, small devices which can be worn by individuals as they go about their daily lives, which measure movement in one or more planes. The advantage of accelerometry is that it provides accurate information on the frequency, intensity, and duration of both physical activity and sedentary behaviour which is difficult to capture with retrospective self-report questions.
