



Health Survey for England 2016

Children's health

Published 13 December 2017

This report presents key statistics about children's health and health-related behaviours, showing 2016 prevalence and trends. It includes additional analysis relating to overweight and obesity among children in 2016.

Key findings

- The prevalence of childhood obesity increased between 1995 and 2005. Since 2005 the rate of childhood obesity has levelled out, and in 2016 was 16% among children aged 2 to 15.
- In 2016, the prevalence of obesity among children aged 2 to 15 varied with household income, being lowest in the fifth of households with the highest incomes, and highest in the fifth of households with lowest incomes.
- Most mothers and fathers thought that their children were about the right weight (82% of mothers, 85% of fathers). Their perceptions were not always accurate; 39% of mothers and 52% of fathers of obese children aged 4 to 15 thought that their child was about the right weight.
- The proportion of children aged 8 to 15 who had ever smoked has decreased overall, from 18% of boys and 20% of girls in 1997 to 6% of boys and 3% of girls in 2016.
- The proportion of children aged 8 to 15 reporting ever having had a proper alcoholic drink (a whole drink, not just a sip) fell from 45% in 2003 to 15% in 2016.

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This report may be of interest to members of the public, policy officials, people working in public health and to commissioners of health and care services to see key statistics about children's health and health related behaviours in England.

Introduction

Contents

This child focused report presents key statistics about children's health and health-related behaviours showing 2016 prevalence and trends. It covers content previously published in the child section of the trends commentary for HSE2015 and earlier years.

It also includes additional analysis of overweight and obesity among children such as perceptions of child weight in 2016.

The Health Survey for England series

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 currently commissioned by NHS Digital (formerly 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 (University College London).

Each annual survey has covered the adult population aged 16 and over living in private households in England. Since 1995, the surveys have also covered children aged 2 to 15, and since 2001, infants aged under 2 have been included. In some years a boost sample is used to increase the proportion of participants from certain population groups. There was no sample boost in 2016.

In 2016, interviews were completed with 8,011 adults and 2,056 children.

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. For children, these topics are currently included every year:

- General health
- Experience of smoking
- Experience of drinking alcohol
- Height measurements
- Weight measurements
- Child saliva samples

Other topics are covered regularly, including well-being, fruit and vegetable consumption and physical activity.

Trend tables

The trend tables focus on core topics and measurements. Trend tables present the results within the general population sample, although in some years boost sample data have been included. For example, some trends for 2002, 2005 to 2010 and 2015 are based on data from children in both boost and general population samples to increase the precision of the results.

Because the current sample size for children (unless there is a child boost) is relatively small compared with previous years, the child trend tables were 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 <http://content.digital.nhs.uk/catalogue/PUB13219>.

About the survey estimates

The commentary in this report focuses on key trends in the health of children aged between 0 and 15 since 1995, or the earliest year for which comparable data are available.

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, also known 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 the Methods 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.

To limit the burden on households, the number of children selected to take part in the survey has been limited. Between 1995 and 2014, no more than two children in each household were selected. From 2015, this was revised so that up to four children could be selected to take part, but no more than two from each age group, 0 to 12 and 13 to 15.

Since 1995, children's data have been weighted to account for the probabilities of selection. In 2003, non-response weighting was introduced for the first time in the HSE series.²

Since 2013, standard errors (shown in some tables) have been calculated for all survey years using a complex samples module of the statistical package. 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. This complex samples module

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

² 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.

takes account of the complex survey design and weighting used in the HSE rather than assuming a simple random sample.³ 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 the tables, '-' represents zero, and '0' represents a percentage less than 0.5 but not zero. Where estimates are based on fewer than 50 cases these are not shown.

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 children for body mass index (BMI) categories, fruit and vegetable consumption and physical activity. The tables are accompanied by a user guide which includes a technical note explaining how they are produced.⁴

³ Full details of the HSE sample can be found in the 2016 Methods report at <https://digital.nhs.uk/pubs/hse2016>.

⁴ Health Survey for England - 2016 Trend Tables: Population number estimates tables at <https://digital.nhs.uk/pubs/hse2016>.

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Main findings

- Mean BMI in 2016 among boys and girls aged 2 to 15 was close to its 1995 level. In 2016 it was 17.8kg/m² among boys and 18.4kg/m² among girls. Although there have been fluctuations from year to year, in 2016 mean BMI for both boys and girls was lower than the peak around 2004/2005.
- The prevalence of childhood obesity increased between 1995 and 2005. Since 2005 the rate of childhood obesity has levelled out, and in 2016 was 16% among children aged 2 to 15.
- In 2016, the prevalence of obesity among children aged 2 to 15 varied with household income, being lowest in the fifth of households with the highest incomes, and highest in the fifth of households with lowest incomes.
- Most mothers and fathers thought that their children were about the right weight (82% of mothers, 85% of fathers). Their perceptions were not always accurate; 39% of mothers and 52% of fathers of obese children aged 4 to 15 thought that their child was about the right weight.
- The proportion of children aged 8 to 15 who had ever smoked has decreased overall, from 18% of boys and 20% of girls in 1997 to 6% of boys and 3% of girls in 2016.
- The proportion of children aged 8 to 15 reporting ever having had a proper alcoholic drink (a whole drink, not just a sip) fell from 45% in 2003 to 15% in 2016.
- In 2016, 16% of children aged between 5 and 15 ate the recommended five or more portions of fruit and vegetables a day. Since 2007, the prevalence of eating five or more portions has varied between 16% and 23% with no clear trend.
- In 2016, 94% of both boys and girls aged 0 to 15 had very good or good health.
- Among children aged 0 to 15, boys were more likely than girls to have a longstanding illness (in 2016, 18% and 12% respectively). The proportions have been similar since 2012.

Children's height and weight

Introduction

Infants (aged 0 to 1) were first included in the survey in 2001. The weight of infants over six weeks has been measured every year since 2001. Trends in children's weight are shown for the periods 1995 to 2016, based on children aged 2 to 15, and from 2001 to 2016, based on children aged 0 to 15.

Infant length was measured between 2001 and 2008, although for some years during this period the samples of infants were too small for analysis.⁵ Trends in height, body mass index (BMI), overweight and obesity are shown for children aged 2 to 15 between 1995 and 2016.

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

- Tables showing trends in mean height for children aged 2 to 15 are provided for information.

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

- Between 1995 and 2003, mean weight of children aged 2 to 15 increased overall from 33.0kg to 36.2kg among boys, and from 32.8kg to 35.6kg among girls.⁶ From 2003 to 2016 there was little variation in mean weight for boys or girls (apart from 2004). In 2016 mean weight was 33.9kg among both boys and girls aged 2 to 15. Among boys this represents a decrease from the 2003 level.

⁵ Estimates of infant length based on the measurements of children aged under 2 between 2001 and 2008 can be found in the trend tables published in 2015, as can data on BMI for this age group. <http://www.content.digital.nhs.uk/catalogue/PUB22616>.

⁶ In 2004 the mean weight of girls and boys was slightly higher than in 2003, but the difference was not statistically significant. The sample of children in 2004 was smaller than usual and the 2004 estimates are out of line with trends since.

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,⁷ 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.^{8,9,10}

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 11.¹¹ 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*.¹² 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*,¹³ and assistance with local services to tackle overweight and obesity levels through the *National Child Measurement Programme*.¹⁴ Following this 2010 white paper, *The Public Health Responsibility Deal*¹⁵ 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* campaign¹⁶ 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*

⁷ Steinbeck K. *The importance of physical activity in the prevention of overweight and obesity in childhood: a review and an opinion*. *Obesity Reviews* 2001;**2**:117-130.

⁸ Rhoads GG, Kagan A. *The relation of coronary-disease, stroke, and mortality to weight in youth and in middle-age*. *Lancet* 1983;**1**:492-495.

⁹ Gunnell D, Frankel S, Nanchahal K, Peters TJ, Smith GD. *Childhood obesity and adult cardiovascular mortality: a 57-y follow-up study based on the Boyd Orr cohort*. *American Journal of Clinical Nutrition* 1998;**67**:1111-1118.

¹⁰ Must A, Jacques PF, Dallal GE, Bajema CJ, Dietz WH. *Long-term morbidity and mortality of overweight adolescents – a follow-up of the Harvard growth study of 1922 to 1935*. *New England Journal of Medicine* 1992;**327**:1350-1355.

¹¹ Department of Health. *Choosing Health: Making healthy choices easier*. DH, London, 2004. http://webarchive.nationalarchives.gov.uk/+/dh.gov.uk/en/publicationsandstatistics/publications/publicationspolicyandguidance/dh_4094550.

¹² Department of Health. *Healthy Lives, Healthy People: our strategy for public health in England*. DH, London, 2010. www.gov.uk/government/publications/healthy-lives-healthy-people-our-strategy-for-public-health-in-england.

¹³ Department of Health. *Healthy Child Programme from 5 to 19 years old*. DH, London, 2009. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_107566.

¹⁴ NHS Digital. *National Child Measurement Programme*. <http://content.digital.nhs.uk/ncmp>

¹⁵ Public Health Responsibility Deal. Department of Health, 2011. <https://responsibilitydeal.dh.gov.uk/>

¹⁶ NHS Change4Life campaign. www.nhs.uk/Change4Life/Pages/why-change-for-life.aspx.

England¹⁷ 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 2016 Budget¹⁸ announced that soft drinks companies will pay a levy on drinks with added sugar from April 2018.¹⁹ Following this announcement, the 2016 childhood obesity strategy outlined an action plan that aimed to 'significantly reduce England's rate of childhood obesity within the next ten years'.²⁰

The National Child Measurement Programme (NCMP) collects height and weight measurements of children in reception (aged 4 to 5 years) and year 6 (aged 10 to 11 years) in state-maintained schools in England.²¹ The programme now annually measures over one million children. The prevalence of obesity for year 6 increased from 18.7% in 2009/10 to 20.0% in 2016/17.²² For reception children the prevalence of obesity has varied between 9.1% and 9.9% since 2006/07 and in 2016/17 it was 9.6%.²³ The Health Survey for England covers a much wider age range of children than NCMP but measures fewer children and consequently its estimates are less precise.

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 85th and 95th BMI centiles respectively of the 1990 reference population.²⁴

- Mean BMI in 2016 among boys aged 2 to 15 was close to its 1995 level; 17.8kg/m² in 2016, compared with 17.7kg/m² in 1995. Mean BMI for girls in this age group was also similar in 2016 and 1995 (18.4kg/m² and 18.1kg/m² respectively).²⁵

¹⁷ Department of Health. *Healthy Lives, Healthy People: A call to action on obesity in England*. HMSO, London, October 2011. <https://www.gov.uk/government/publications/healthy-lives-healthy-people-a-call-to-action-on-obesity-in-england>

¹⁸ HM Treasury. *Budget 2016*. London, 2016. <https://www.gov.uk/government/publications/budget-2016-documents>

¹⁹ The 'sugar tax' will apply to drinks with total sugar content above 5 grams per 100 millilitres, with a higher rate for more than 8 grams per 100 millilitres. This will not need to be paid on milk-based drinks or fruit juices.

²⁰ HM Government. *Childhood Obesity: A Plan for Action*. London, 2016.

<https://www.gov.uk/government/publications/childhood-obesity-a-plan-for-action>

²¹ Local authorities are mandated to collect data from mainstream state-maintained schools. Collection of data from special schools (schools for pupils with special educational needs and pupil referral units) and independent schools is encouraged but data collected these schools is excluded from the national report.

²² Between 2006/07 and 2008/09, estimates for this age group were unreliable due to low response rates.

²³ NHS Digital. *National Child Measurement Programme – England, 2016-17*. <https://digital.nhs.uk/catalogue/PUB30113>

²⁴ Cole TJ, Freeman JV, Preece MA. *Body mass index reference curves for the UK, 1990*. Archives of Disease in Childhood 1995;73:25-29.

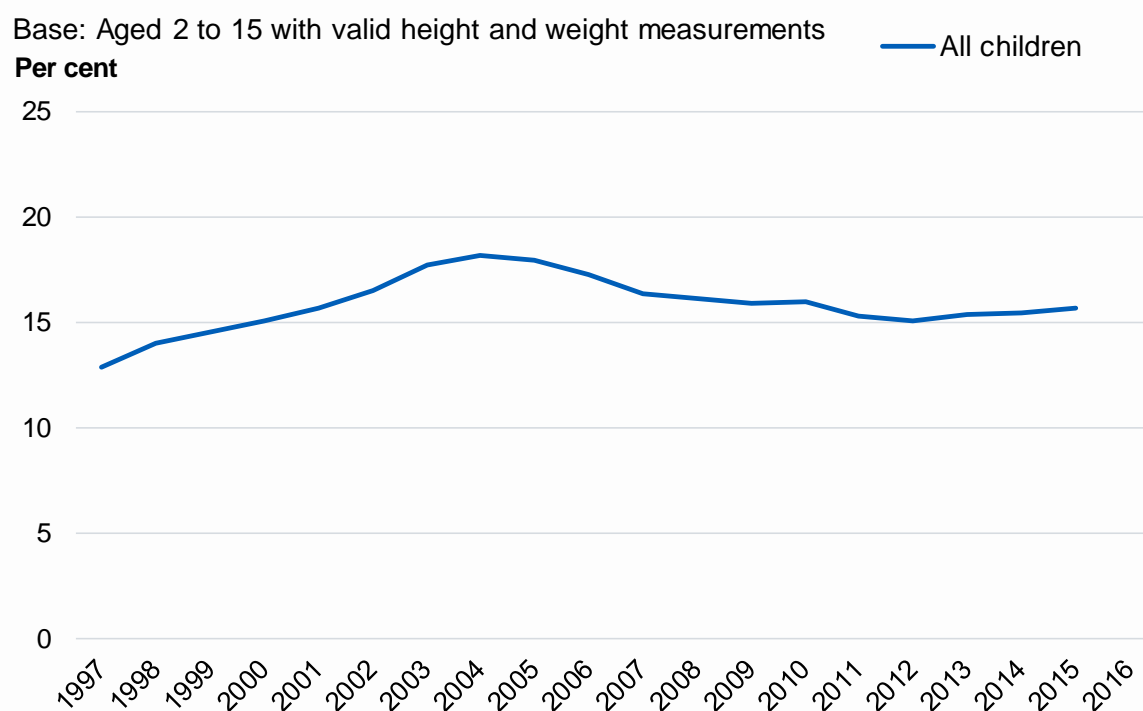
²⁵ As explained in the Introduction to this report, survey estimates are subject to a margin of error. It is likely that the mean BMI of boys in the population was between 17.5kg/m² and 18.1kg/m², and the mean BMI of girls was between 18.1kg/m² and 18.8kg/m².

- Although there have been fluctuations from year to year, in 2016 mean BMI for both boys and girls was lower than the peak around 2004 and 2005 (among boys it was 18.6 kg/m² in both those years; among girls, 19.3 kg/m² in 2004 and 18.9 kg/m² in 2005).

Table 4 – Children's overweight and obesity prevalence, by survey year, age and sex

- Figure 1 shows the prevalence of obesity among children aged 2 to 15 between 1995 and 2016, presented as 3-year moving averages in order to reduce the impact of random variation. The prevalence of childhood obesity increased between 1995 (when 12% of children aged 2 to 15 were obese) and 2004 to 2005 (when 19% of children were obese).
- Since 2004 to 2005 the rate of childhood obesity has levelled out, and in 2016 was 16%.²⁶ The percentage of children who were obese has fluctuated between 14% and 17% from 2006 to 2016. The estimates for individual years in this period vary slightly but differences are within survey sampling error.

Figure 1: Proportion of children aged 2 to 15 who were obese, 1995-2016 (three-year moving average)



Source: NHS Digital

- The prevalence of obesity among children aged 2 to 15 in 2016 was the same for boys and girls (both 16%).

²⁶ As explained in the Introduction to this report, survey estimates are subject to a margin of error. It is likely that the proportion of children in the population who were obese was between 14% and 18%.

- The proportion of children who were overweight varied less over the period than the proportion who were obese. In 2016, 12% of children aged 2 to 15 were overweight but not obese, compared with 13% in 1995.²⁷
- The trend in obesity has been broadly similar from 1995 to 2016 for older children (aged 11 to 15) and younger children (aged 2 to 10). There was a pattern of increase between 1995 and around 2004 and 2005; since 2005 rates of obesity have levelled off.
- Among younger children, aged 2 to 10, the estimated prevalence of obesity has varied between 11% and 15% between 2008 and 2016 (12% in 2016).
- Among older children, aged 11 to 15, the estimated prevalence of obesity was between 16% and 20% between 2006 and 2015. In 2016, it was 23% (95% confidence interval 19% to 27%), which was within the limits of survey sampling error compared with 2015.

Estimates of the number of children in the population for BMI categories from 2003 to 2016 are available in the population number estimates tables.

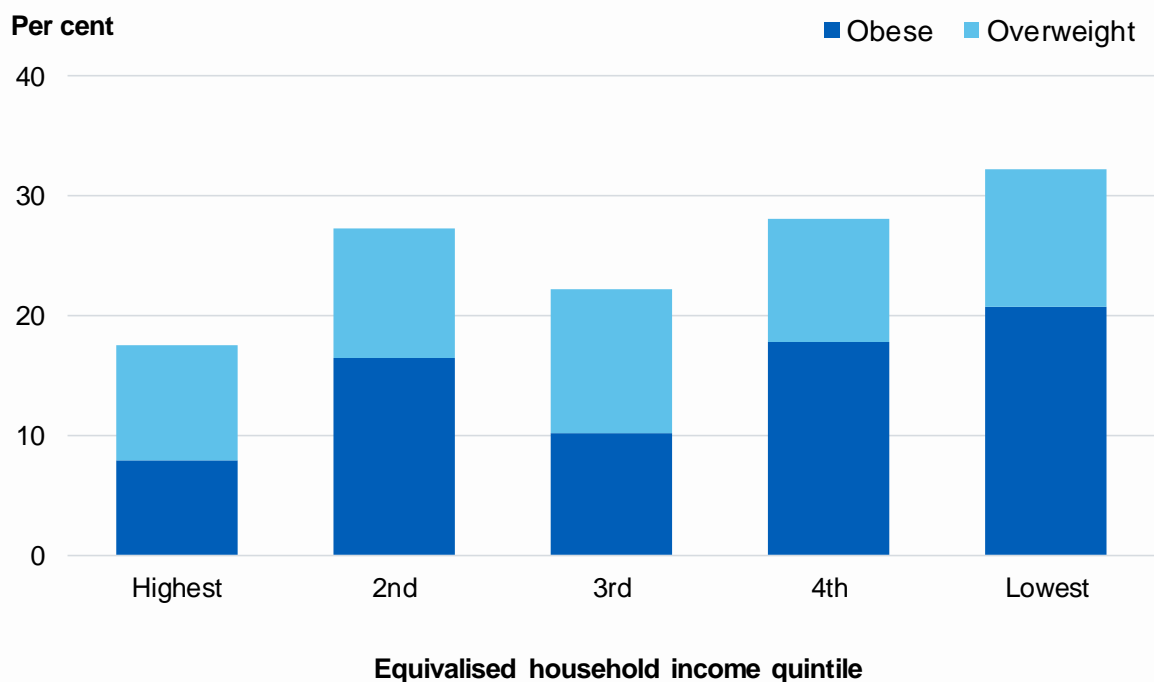
²⁷ Taking account of the margin of error, it is likely that the proportion of children in the population who were overweight, but not obese, was between 10% and 14%.

Table 5 – Children's overweight and obesity prevalence, by equivalised household income and sex

- As Figure 2 shows, in 2016, the prevalence of overweight and obesity among children varied with household income. The proportion of children who were overweight or obese was lowest in the fifth of households with the highest incomes (18% of children) and highest in the fifth of households with lowest incomes (32% of children). There was no clear pattern in the households in the intermediate income categories.
- This difference was largely accounted for by differences in the prevalence of obesity. 8% of children were obese in the fifth of households with the highest incomes, compared with 21% of children in households with the lowest incomes.²⁸

Figure 2: Overweight and obesity prevalence, by equivalised household income and sex

Base: Children aged 2 to 15 with valid height and weight measurements



Source: NHS Digital

Table 6 – Children's perception of own weight, by body mass index (BMI) status

Children aged between 8 and 15 were asked what they thought of their weight in the self-completion booklet.

²⁸ This pattern was also found in earlier years of HSE, for example 2015, see Conolly A. *Health Survey for England 2015: Children's body mass index, overweight and obesity.* <http://digital.nhs.uk/catalogue/PUB22610>

- Approximately a quarter of children were not sure whether they were the right weight, and this was the same for all weight categories.
- Overweight children were more likely than obese children to think that they were the right weight (55% and 23% respectively). Half (51%) of obese children thought they were too heavy, compared with 17% of overweight children.

Table 7 – Parents' perception of their child's weight, by child's body mass index (BMI) status

Parents of children aged between 4 and 15 were asked what they thought of their child's weight in the self-completion booklet.

- Most mothers and fathers thought their children were about the right weight (82% of mothers, 85% of fathers). This was particularly true if their children were not overweight or obese (89% of mothers, 90% of fathers of these children).
- Parents' perceptions were not always accurate:
 - 85% of mothers and 91% of fathers of overweight children thought their child was about the right weight.
 - 39% of mothers and 52% of fathers of children who were obese thought their child was about the right weight.
- Findings on parents' perception of their child's weight were similar in HSE 2015.²⁹

²⁹ See Conolly A. *Health Survey for England 2015: Children's body mass index, overweight and obesity*. <http://digital.nhs.uk/catalogue/PUB22610>

Children's cigarette smoking

Introduction

People who start smoking at a young age have higher prevalence rates for all types of tobacco-related cancers than others in their age group, linked primarily to their earlier exposure to the harmful toxins from cigarettes. Young smokers also experience more short and long-term respiratory symptoms than their non-smoking peers.³⁰ 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.³¹

The 1998 White Paper *Smoking Kills*³² set out the government's tobacco policy, and included a target to reduce smoking prevalence among 11 to 15 year olds to 9% by 2010. The Health Act 2006,³³ 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 18.³⁴ The 2009 Health Act³⁵ 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. In 2011, the government's Tobacco Control Plan³⁶ set out further measures to reduce smoking, including ending tobacco displays in all shops. A revised Tobacco Control Plan, published in 2017, *Towards a smokefree generation*³⁷ aims, by the end of 2022, 'to reduce the prevalence of 15 year olds who regularly smoke from 8% to 3% or less'.

Children aged 8 to 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. They are asked 'Have you ever tried smoking a cigarette, even if it was only a puff or two?'³⁸ This is followed by a question that confirms their smoking status; regardless of the answer to the first question, children are counted as smokers only if they answer 'yes' to the first question and something other than 'I have never smoked' to the second question.

³⁰ Action on Smoking and Health. *Asthma and Smoking*. ASH, London, 2015

<http://ash.org.uk/information-and-resources/reports-submissions/reports/ash-research-report-asthma-and-smoking/>

³¹ Chen J, Millar WJ. *Age of smoking initiation: implications for quitting*. Health Reports 1998; **9**: 39-46.

³² Department of Health. *Smoking kills: a White Paper on tobacco*. DH, London, 1998.

http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/PublicationsandStatistics/Publications/PublicationsPolicyAndGuidance/DH_4006684

³³ Office of Public Sector Information. *The Health Act 2006*.

www.opsi.gov.uk/ACTS/acts2006/ukpga_20060028_en_1

³⁴ Office of Public Sector Information. *The Children and Young Persons (Sale of Tobacco etc.) Order 2007*. Statutory Instruments 2007 No. 767. www.opsi.gov.uk/si/si2007/uksi_20070767_en_1

³⁵ Department of Health. *Health Act 2009*. Gateway Reference 11194, 12676.

www.legislation.gov.uk/ukpga/2009/21/contents

³⁶ Department of Health, *Healthy Lives, Healthy People: A Tobacco Control Plan for England*, 2011 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213757/dh_124960.pdf

³⁷ Department of Health, *Towards a Smokefree Generation: a tobacco control plan for England*, 2017. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/630217/Towards_a_Smoke_free_Generation_-_A_Tobacco_Control_Plan_for_England_2017-2022_2_.pdf

³⁸ In 2016, the questionnaire made clear that this excludes electronic cigarettes.

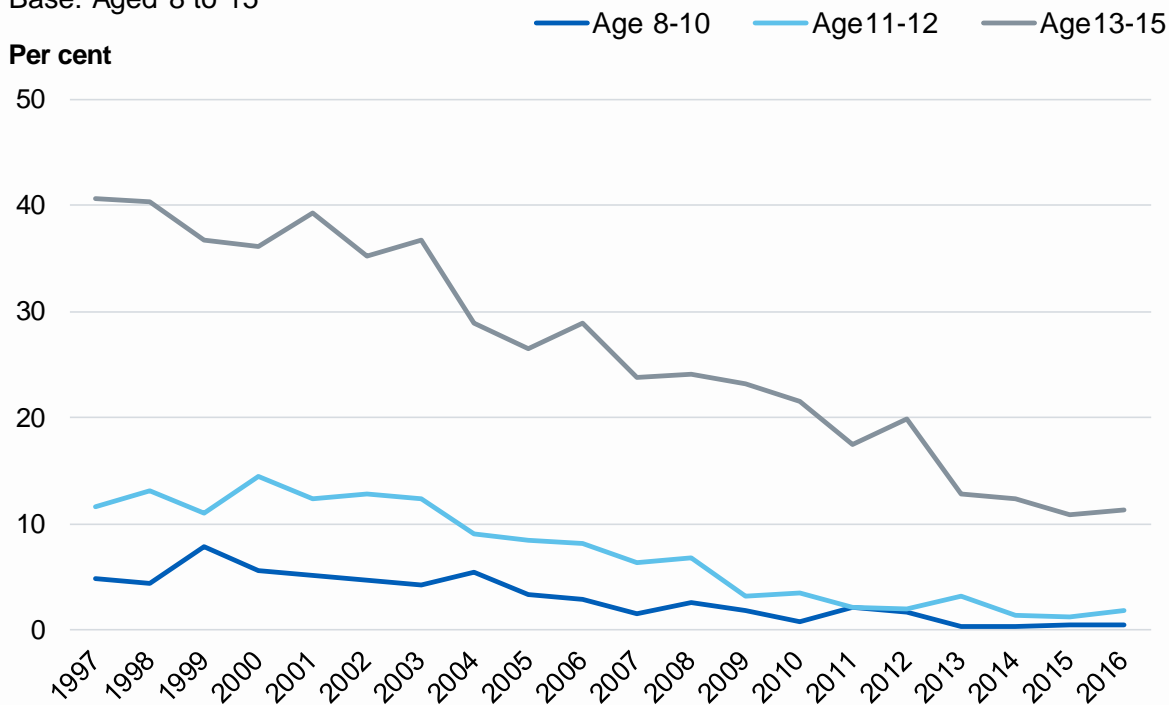
Trends are examined between 1997 and 2016; data from previous years are not comparable.

Table 8 – Children's self-reported cigarette smoking status, by survey year, age and sex

- The proportion of children aged 8 to 15 who had ever smoked has decreased overall, from 18% of boys and 20% of girls in 1997 to 6% of boys and 3% of girls in 2016.³⁹ The downward trend was apparent in all the age groups. Levels have been similar since 2013.
- In all survey years, the proportion of children who had ever tried smoking generally increased with age, being much higher among those aged 13 to 15 than among younger children, as shown in Figure 3.
- In 2016, 11% of children aged 13 to 15 had ever tried smoking, compared to 2% of those aged 11 to 12 and 1% of those aged 8 to 10.

Figure 3: Proportion of children aged 8 to 15 who had ever smoked cigarettes, 1997-2016

Base: Aged 8 to 15



Source: NHS Digital

³⁹ As explained in the Introduction to this report, survey estimates are subject to a margin of error. It is likely that the proportion of boys aged 8 to 15 in the population who had ever smoked was between 4% and 9% in 2016, and the proportion of girls aged 8 to 15 was between 2% and 6%.

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.⁴⁰ 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.^{41,42} Concern has been raised about increasing levels of consumption within the 11 to 13 age group and among adolescent girls.^{40,43}

The government published the *Youth Alcohol Action Plan*⁴⁴ 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.⁴⁵ This included a recommendation that children under the age of 15 do not drink any alcohol at all and that alcohol consumption for 15 to 17 year olds should be under the supervision of a parent or carer. In 2012, the government published its alcohol strategy. One of the key outcomes identified was 'a sustained reduction in both the numbers of 11 to 15 year olds drinking alcohol and the amounts consumed'.⁴⁶

Children aged 8 to 15 are asked about experience of alcohol 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. They are asked 'Have you ever had a proper alcoholic drink – a whole drink, not just a sip?' This is followed by a second question, added in 1999: 'Have you ever drunk alcopops (such as Bacardi Breezer,

⁴⁰ 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/Alcoholmisuse/DH_085386

⁴¹ Hibell B et al. *The ESPAD Report 2003: alcohol and other drug use among students in 35 European countries*. Swedish Council for Information on Alcohol and Other Drugs, Stockholm, 2004.

www.drugsandalcohol.ie/5923/7/ESPAD_2003_report_part_one.pdf

⁴² Currie C et al (eds.). *Young People's Health in Context: international report from the HBSC 2001/02 survey*. WHO Policy Series: Health policy for children and adolescents, Issue 4. WHO Regional Office for Europe, Copenhagen, 2004. www.euro.who.int/_data/assets/pdf_file/0008/110231/e82923.pdf

⁴³ Alcohol Concern. *Young People's Drinking*. Acquire: Alcohol Concern's Quarterly Information and Research Bulletin. Alcohol Concern, London, 2006.

⁴⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/238735/7387.pdf

⁴⁵ Department of Health. *Guidance on the consumption of alcohol by children and young people. A report by the Chief Medical Office*. DH, London, 2009.

http://webarchive.nationalarchives.gov.uk/201301071105354/http://www.dh.gov.uk/prod_consum_dh/gro ups/dh_digitalassets/documents/digitalasset/dh_110256.pdf

⁴⁶ HM Government. *The Government's alcohol strategy*. London, 2012.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224075/alcohol-strategy.pdf

Smirnoff Ice, WKD etc)?' Children are counted as having drunk alcohol if they answer 'yes' to either question.

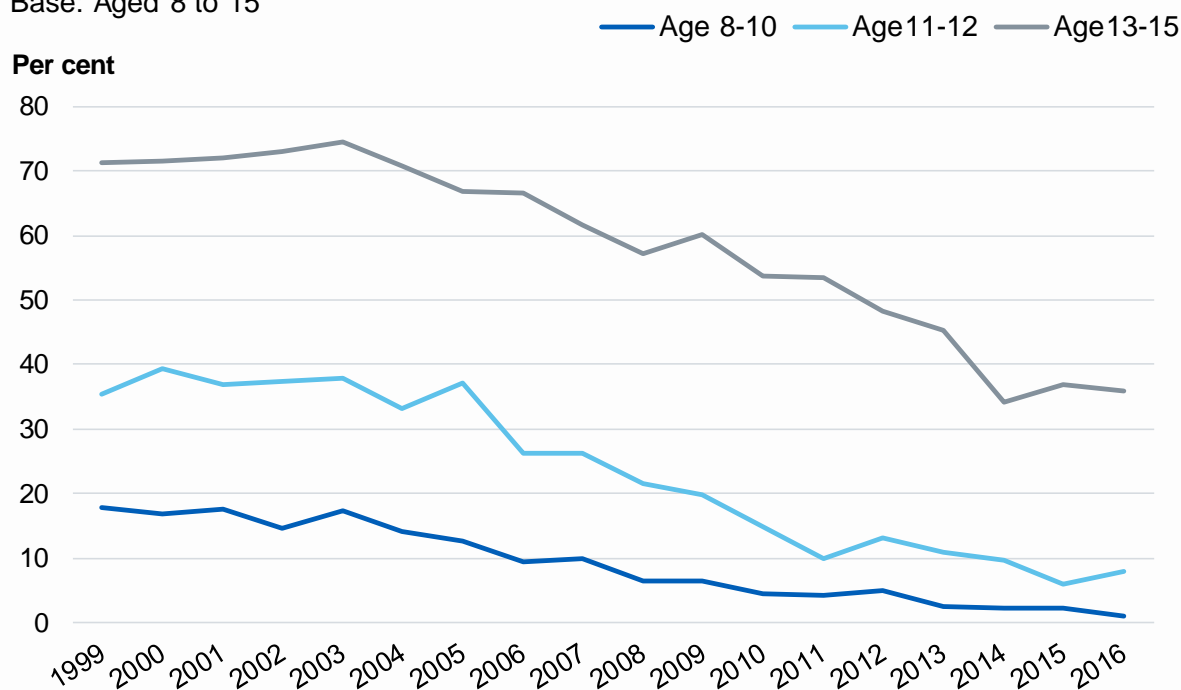
Trends are examined between 1999 and 2016; data from previous years are not comparable.

Table 9 – Children's self-reported experience of alcohol, by survey year, age and sex

- The proportion of children aged 8 to 15 reporting ever having had a proper alcoholic drink – a whole drink, not just a sip - fell from 45% in 2003 to 15% in 2016.⁴⁷
- The prevalence of boys aged 8 to 15 ever having had a proper alcoholic drink varied between 42% and 47% between 1999 and 2003, but has fallen since then. From 2014 to 2016, the proportion remained steady, at 16%.
- The proportion of girls aged 8 to 15 who had ever had a proper alcoholic drink varied between 39% and 43% from 1999 to 2004, and has dropped since then. The decline has been particularly marked since 2013, declining 10 percentage points from 23% to 13% in 2016.

Figure 4: Proportion of children aged 8 to 15 who have ever had a proper alcoholic drink, 1999-2016

Base: Aged 8 to 15



Source: NHS Digital

- As with smoking, the proportion ever having had a proper alcoholic drink increased from younger to older children. Only small proportions of younger children had tried drinking: 1% aged 8 to 10 and 8% aged 11 to 12, compared with 36% aged 13 to 15 in 2016.

⁴⁷ As explained in the Introduction to this report, survey estimates are subject to a margin of error. It is likely that proportion of children aged 8 to 15 in the population who had ever had a proper alcoholic drink was between 12% and 18%.

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.⁴⁸

Many government papers raised concerns about children's diet and a number of initiatives were 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.⁴⁹

Following the 1997 white paper *Excellence in Schools*,⁵⁰ and 2003 Green Paper *Every Child Matters*,⁵¹ in which the government pledged to help all schools to become healthy, there was 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 included the School Fruit and Vegetable Scheme,⁵² 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 Plan*⁵³ 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 to 15 in the HSE interview, using the same questions as for adults. There are no figures available for fruit and vegetable consumption in 2012 because it was not collected in the survey that year.

⁴⁸ *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/

⁴⁹ NHS and Department for Children, Schools and Families. *Introduction to the National Healthy Schools Programme*.

⁵⁰ Department for Education and Skills White Paper. *Excellence in Schools*. Cm 3681. The Stationery Office, London, 1997. www.educationengland.org.uk/documents/wp1997/excellence-in-schools.html

⁵¹ Department for Education and Skills Green Paper. *Every Child Matters*. Cm 5860. The Stationery Office, London, 2003. <https://www.gov.uk/government/publications/every-child-matters>

⁵² Department of Health. *School Fruit and Vegetable Scheme*. http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/PublicHealth/Healthimprovement/FiveADay/FiveADaygeneralinformation/DH_4002149

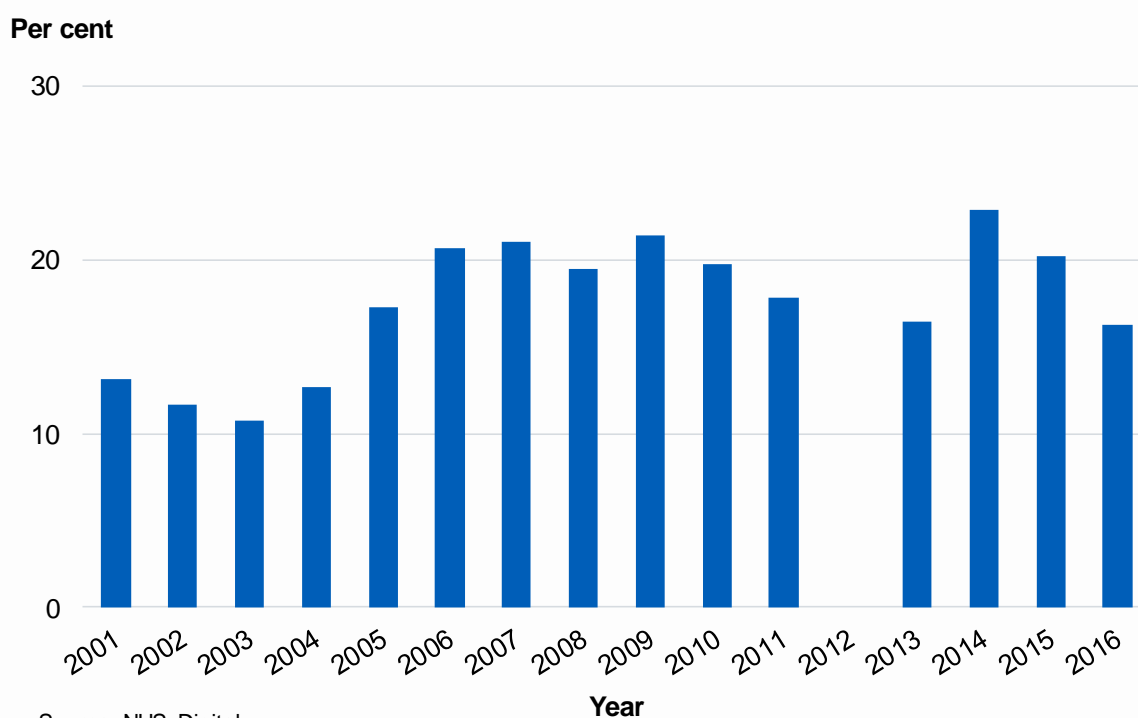
⁵³ Department of Health. *Choosing a Better Diet: a food and health action plan*. DH, London, 2005. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4105709.pdf

Table 10 – Children's fruit and vegetable consumption, by survey year, age and sex

- In 2016, 16% of children aged between 5 and 15 ate the recommended⁵⁴ five or more portions of fruit and vegetables a day. Results were similar for boys (15%) and girls (18%).⁵⁵
- The proportion of children eating five or more portions per day was 11% in 2003 and then increased to 21% in 2006. Since 2007, the prevalence of eating five or more portions has varied between 16% and 23% with no clear trend.
- Between 2001 and 2004, the mean number of portions of fruit and vegetables consumed among children aged 5 to 15 was stable 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 2010. Since 2010 there has been some fluctuation in the mean number of portions, between 3.0 and 3.5. In 2016 it was 3.1.

Figure 5: Proportion of children aged 5 to 15 who ate five or more portions of fruit and vegetables per day, 2001-2016

Base: Aged 5 to 15



Population estimates for fruit and vegetable consumption by children aged 5 to 15 between 2003 and 2016 are available in the population number estimate tables.

⁵⁴ The 5 A DAY programme advice is that children should eat at least five portions of a variety of fruit and vegetables a day, but that the child portion size varies with age, body size and levels of physical activity. See <https://www.nhs.uk/Livewell/5ADAY/Pages/Portionsizes.aspx>. HSE questions are based on an 80g portion size for all age groups.

⁵⁵ As explained in the Introduction to this report, survey estimates are subject to a margin of error. It is likely that the proportion of boys aged 5 to 15 in the population who ate five or more portions of fruit and vegetables a day was between 12% and 17%, and proportion of girls aged 5 to 15 was between 15% and 21%.

Children's general health

Introduction

Information was collected for children about self-reported general health, longstanding illness and acute sickness.

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. Like self-reported general health, longstanding illness is a valuable indicator of the health of the population, and is also an indicator of inequalities, with links between poverty, social class and self-assessed longstanding illness.

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 2011.⁵⁶ 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'.⁵⁷

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 to 12, and children aged 13 to 15 answered their own questions, with a parent or guardian present.

Table 11 – Children's general health, by survey year, age and sex

- Over the period from 1995 to 2016, at least 90% of boys and girls reported very good or good general health. The proportion of children reporting very good or good health has varied across the period, between 90% and 96% among boys and girls. In 2016, 94% of both boys and girls reported very good or good health.⁵⁸

⁵⁶ Office for National Statistics. *Harmonised Concepts and Questions for Social Data Sources: Primary Standards. Long-lasting Health Conditions and Illnesses; Impairments and Disability*. ONS, Newport, 2011. <http://webarchive.nationalarchives.gov.uk/20160106185646/http://www.ons.gov.uk/ons/guide-method/harmonisation/primary-set-of-harmonised-concepts-and-questions/index.html>

⁵⁷ Until 2011 the question was 'Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time, or that is likely to affect you over a period of time?' Since 2012 the question has been 'Do you have any physical or mental health conditions or illnesses lasting or expected to last 12 months or more?' 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. <http://content.digital.nhs.uk/catalogue/PUB13218/HSE2012-Methods-and-docs.pdf>

⁵⁸ As explained in the Introduction to this report, survey estimates are subject to a margin of error. It is likely that the proportion of boys in the population with very good or good health was between 92% and 95%, and the proportion of girls in the population with very good or good health was between 92% and 96%.

Table 12 – Children's longstanding illness, by survey year, age and sex

- Boys were more likely than girls to report having a longstanding illness (in 2016, 18% and 12% respectively).⁵⁹
- 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, and stood at 21% among boys and 16% among girls in 2009.⁶⁰ Since 2012 when the questions were changed as explained on page 22, the proportions with longstanding illness have been similar (18% for boys, 12% for girls in 2016, compared to 17% and 10% respectively in 2012), slightly below the 2009 level.⁶¹
- Limiting longstanding illness among boys was at a similar level in 1996 and 2016 (10% and 11% respectively), while the proportion among girls declined slightly over the period from 9% to 6%.

Table 13 – Children's acute sickness, by survey year, age and sex

- Prevalence of acute sickness generally varied between 8% and 14% for children between 1995 and 2016, and was 9% in 2016.⁶²

⁵⁹ Taking account of the margin of error, it is likely that the proportion of boys in the population with a longstanding illness was between 16% and 21%, and the proportion of girls in the population with a longstanding illness was between 10% and 14%.

⁶⁰ 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. Consequently, there are no figures available for longstanding illness among children in 2010. Results for 2011 are based only on three months' data, so bases are small, margins of error are relatively wide, and the data should be interpreted with caution. No age breakdown is available for 2011.

⁶¹ The apparent difference between 2009 and 2012 may be because of the change in the questions, rather than a genuine change in prevalence.

⁶² Taking account of the margin of error, it is likely that the prevalence of acute sickness among children in the population was between 7% and 10%.

Children's physical activity

Introduction

Detailed data on children's physical activity cannot be collected by the HSE in every year for reasons of space. This section is based on data collected in 2015 and earlier years.

Engaging in physical activity is important for children in the short-, mid- and long-term. Obesity is a major adverse health consequence of physical inactivity, although not the only one. Habits track from childhood to adulthood,⁶³ so active children are less likely to suffer the adverse health consequences of physical inactivity in adulthood. Physical activity for children is critical for motor development, cognitive improvement, psychosocial health, and cardio-metabolic health; reduces body fat and can increase academic achievement.⁶⁴

The evidence on the benefits of physical activity and the amount of activity recommended for health was reviewed in 2010⁶⁵ for the four Chief Medical Officers. They published recommendations in the 2011 report *Start Active, Stay Active*,⁶⁶ including for the first time guidelines for children under five.

The guidance is tailored to specific age groups. Children under 5 who are able to walk unaided are recommended to be active for at least 180 minutes (three hours) per day, spread throughout the day.⁶⁷ Examples of suitable activities include: walking or skipping to local destinations (school, a friend's home, park or shops); energetic play, such as using a climbing frame or riding a bicycle; bouts of more energetic activity, such as running and chasing games; and activities that involve all the muscle groups. The recommendations for children aged 5 to 18 are twofold.⁶⁸ 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 and that children and young people should engage in moderate to vigorous physical activity for up to several hours each day. It is also recommended that vigorous intensity activity, including muscle- and bone-strengthening activities, should be undertaken at least three days each week.

Moderate intensity activities are described as those that make the participant warmer, breathe harder, or their heart beat faster, while still being able to converse, such as

⁶³ Telema R. *Tracking of physical activity from childhood to adulthood: a review*. *Obes Facts* 2009;**2**:187-195.

⁶⁴ Donnelly JE, Hillman CH, Castelli D et al. *Physical activity, fitness, cognitive function, and academic achievement in children: a systematic review*. *Med Sci Sports Exerc*. 2016;**48**(6):1197-1222.

⁶⁵ Bull FC, Expert Working Groups. *Physical Activity Guidelines in the UK: Review and Recommendations*. Loughborough University, Loughborough, 2010. www.gov.uk/government/uploads/system/uploads/attachment_data/file/213743/dh_128255.pdf

⁶⁶ Department of Health. *Start Active, Stay Active. A report on physical activity for health from the four home countries' Chief Medical Officers*. DH, London, 2011. <https://www.gov.uk/government/publications/start-active-stay-active-a-report-on-physical-activity-from-the-four-home-countries-chief-medical-officers>

⁶⁷ Chief Medical Officers of the UK. *Factsheet 2. Physical activity guidelines for early years (under 5s) – for children who are capable of walking*. <https://www.nhs.uk/Livewell/fitness/Documents/children-under-5-walking.pdf>

⁶⁸ Chief Medical Officers of the UK. *Factsheet 3. Physical activity guidelines for children and young people (5-18 years)*. <https://www.nhs.uk/Livewell/fitness/Documents/children-and-young-people-5-18-years.pdf>

cycling or playground activities. Vigorous activities would have similar but greater effects, while making conversation much harder, such as running fast, swimming, or football. Muscle- and bone-strengthening activities include hopping, skipping, gymnastics, racquet sports, and swinging on playground equipment, i.e. activities that involve using body weight or working against resistance.

The estimates shown here are based on a questionnaire which was introduced in 2008 and was also included in the HSE in 2012 and 2015. This covers reported physical activity undertaken within the last week for children aged 5 to 15.⁶⁹ For the 2008 survey, the children's physical activity questions were extensively revised to allow more accurate estimation of children's activity.⁷⁰ The questionnaire changes meant that HSE findings on children's physical activity from earlier years were not comparable with those from 2008 onwards, and so earlier results are not included in this report.⁷¹

The questionnaire covers the seven day period before the interview. Children (or their parents on their behalf) were asked to recall the days in the last week they did any physical activity apart from during school hours (curriculum time). Key features of the questionnaire are:

- When asked for details about the types of physical activity they did, participants were presented with two lists of activities. It was explained to them that one list included examples of informal activities and the other included examples of formal sports. Participants were also asked about any other similar activities they had done, and these were recorded individually.
- For each activity that a participant had engaged in, they were asked to recall on which days they had done it; and on each of the days recalled, how long they spent engaged in it (hours and minutes).
- Participants were able to report more than one type of activity for each day.

The activity levels used in the analysis are based on the Chief Medical Officer's recommendations for physical activity for children and young people, and are defined as follows:

- Meets recommendations: at least 60 minutes (1 hour) of moderate to vigorous intensity physical activity on all seven days in the last week.
- Some activity: 30 to 59 minutes of moderate to vigorous intensity physical activity on all seven days in the last week, or at least 60 minutes of moderate to vigorous intensity physical activity on three to six days in the last week.
- Low activity: lower levels of physical activity.

⁶⁹ Parents answered on behalf of children aged 5 to 12.

⁷⁰ Pickup D, Gunning N. *Self-reported physical activity in children. Chapter 5 in Craig R, Mindell J, Hirani V (eds). Health Survey for England 2008.* Health and Social Care Information Centre, Leeds, 2009. www.hscic.gov.uk/catalogue/PUB00430

⁷¹ 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.

Table 14 – Children's physical activity levels, by survey year, age and sex

- Among boys, there was a decrease in the proportion meeting physical activity recommendations between 2008 and 2012, falling from 28% in 2008 to 21% in 2012. It remained at a similar level in 2015 (23%).
- Among girls there has been no statistically significant change in the proportion meeting physical activity recommendations over the period, with 19% in 2008 and 20% in 2015.
- Among boys, the decrease in the proportion meeting recommendations was particularly marked in the oldest age group. 28% of boys aged 13 to 15 met the current guidelines in 2008, compared with 14% in 2012 and 15% in 2015. The proportion of girls aged 13 to 15 meeting recommendations also fell over the period, from 14% in 2008 to 8% in 2012 and 9% in 2015. It should be noted that 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,⁷² was also obtained in 2008. Details are available in the 2008 report.⁷³

Estimates of the number of children aged 5 to 15 in the population by physical activity category for 2008, 2012 and 2015 are available in the population number estimates tables.

⁷² 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.

⁷³ Hall J, Esliger D. *Accelerometry in children. Chapter 6 in Craig R, Mindell J, Hirani V (eds). Health Survey for England 2008. Volume 1: Physical activity and fitness.* Health and Social Care Information Centre, Leeds, 2009. www.hscic.gov.uk/catalogue/PUB00430

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