

Statistics on Obesity, Physical Activity and Diet: England, 2006

Summary

This is a new statistical bulletin which presents for the first time a range of information on obesity, physical activity and diet, drawn together from a variety of sources. The topics covered include

- Overweight and obesity prevalence among adults and children;
- Physical activity levels among adults and children;
- Trends in purchases and consumption of food and drink, and energy intake;
- Health outcomes of being obese;
- Hospital admissions and prescriptions dispensed related to obesity.

The bulletin also summarises Government plans and targets in this area, as well as providing sources of further information and links to relevant documents.

The bulletin combines data from different sources and presents it in a user-friendly format. Most of the data contained in the bulletin have been published previously; either by The Information Centre, The Department of Health, Eurostat, The Department for Culture, Media and Sport, The Department for Education and Skills, The Department for Transport, The Department for Environment Food and Rural Affairs, The Food Standards Agency, The Office for National Statistics and The National Audit Office.

Main findings:

Obesity

- In England, the proportion of men classed as obese increased from 13.2% in 1993 to 23.1% in 2005 and from 16.4% to 24.8% for women during the same period. There was no significant change in the proportion of adults who were overweight;
- In 2003, ex-regular cigarette smokers were more likely to be obese than current smokers and those that have never smoked;
- In 2004, among ethnic minority groups, Black Caribbean and Irish men had the highest prevalence of obesity (25% each). For women, obesity prevalence was higher for Black African (38%), Black Caribbean (32%) and Pakistani ethnic groups (28%) and lower for Chinese women (8%), than for women in the general population;
- In 2002, the direct cost of treating obesity was estimated at between £45.8 and £49.0 million and between £945 million and £1,075 million for treating the consequences of obesity;
- Obese women are almost 13 times more likely to develop Type 2 Diabetes than non-obese women, whilst obese men are nearly 5 times more likely to develop the illness;
- In England in 2005/06 there were 2,749 Finished Consultant Episodes (FCEs) with a primary diagnosis of obesity, compared to 787 FCEs in 1996/97. Where there was a secondary diagnosis of obesity, in 2005/06 there were 62,708 FCEs compared with 21,257 in 1996/97;
- In 2005, almost 871,000 prescriptions items were dispensed for the treatment of obesity compared with just over 127,000 prescriptions in 1999 (an increase of 585%);
- Among boys and girls aged 2 to 15, the proportion who were obese increased from 10.9% in 1995 to 18.0% in 2005 among boys, and from 12.0% to 18.1% among girls. For those aged 2

to 10, the increase over the same period was from 9.6% to 16.6% for boys and 10.3% to 16.7% for girls.

Physical activity

- In England in 2004, 35% of men and 24% of women reported achieving the physical activity recommendations for adults (at least 30 minutes of at least moderate intensity activity at least 5 times a week);
- In 2005, the main reasons for adults not participating in active sports during the last year, is that their health isn't good enough (50%) followed by difficulty in finding the time (18%) and not being interested (15%);
- In 2002, 70% of boys and 61% of girls met current physical activity guidelines for children (achieving 60 minutes or more on 7 days a week);
- During 2005/06, 80% of pupils took part in at least two hours of high quality PE and sport a week.

Diet

- In the United Kingdom, total energy intake fell by approximately 20% between 1974 and 2004;
- For both men and women in England the proportion who consumed 5 or more portions of fruit and vegetables a day increased between 2001 and 2005, rising from 22% to 26% for men and 25% to 30% for women. This includes an increase from 27% in 2004 to 30% in 2005 for women.
- In 2005, 17% of both boys and girls aged 5 to 15 consumed at least 5 portions a day, compared with between 10% and 13% in 2001 to 2004.

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1 Introduction

This statistical bulletin presents a range of information on obesity, physical activity and diet, which has been drawn together from a variety of sources. The bulletin is primarily concerned with body mass index (BMI) as a measurement of obesity unless otherwise specified. The data relate to England where possible. Where figures for England are not available, figures for Great Britain or the United Kingdom have been provided.

Chapter 2 reports on trends in obesity among adults. The relationship between obesity and various factors such as gender and socio-economic classification are also presented.

Chapter 3 focuses upon trends in obesity among children and again, explores the relationship between obesity and other factors.

Chapter 4 presents figures on physical activity for adults. It looks at levels of physical activity according to physical activity guidelines and relationships between participation in physical activity and factors such as ethnicity and body mass index. Similarly, Chapter 5 presents information on physical activity levels amongst children.

Chapter 6 reports information on diet, in particular purchases and consumption of food and drink and related intake of energy and nutrients.

Chapter 7 focuses on health outcomes related to being obese. The risks of diseases and death linked to obesity are discussed in this chapter, as well as

information on hospital admissions and prescriptions dispensed related to obesity.

Throughout the bulletin, references are given to sources for further information. The bulletin contains five appendices, the first describing the key sources used. The second appendix is a technical note giving further details on measurements and classifications from the various surveys used. The third appendix covers Government targets and NHS plans related to obesity whilst the fourth provides editorial notes regarding the tables used. The final appendix gives a list of sources of further information and useful contacts.

Some Health Survey for England tables in this bulletin have been updated to include the most recent available information and some tables present analyses which have not previously been published. Figures in these tables represent observed values which are weighted for non-response. These tables have not been age-standardised – a method which enables groups to be compared after adjusting for the effects of any differences in their age distributions. Due to timescales involved in this publication and the complexity of the analysis it has not been possible to include corresponding age-standardised figures in the tables. The effect of age standardisation did not change the overall message for the variables where age standardised data was available. However, we recognise the possible need for producing age-standardised figures and will consider including these in future publications.

2 Obesity among adults

Background

This chapter focuses on obesity and overweight among adults, presented mainly by body mass index (BMI). Trends in the prevalence of overweight and obesity and prevalence by different demographic, economic and lifestyle variables are described.

The calculation of BMI is a widely accepted method used to define overweight or obesity among adults. For example, recent guidance published by the National Institute for Health and Clinical Excellence (NICE)¹ postulates that within the management of overweight and obesity in adults, BMI should be used to classify the degree of obesity. Although other ways of classifying obesity and health risks associated with being overweight exist, the primary focus of this chapter and subsequent chapters is on using BMI to define overweight and obesity.

Measurement of BMI

BMI is defined as weight (kg)/ height (m²). The desirable weight range for BMI is taken as over 18.5 to 25kg/m². BMI greater than 25.0 kg/m² but no greater than 30.0 kg/m² is defined as overweight and BMI exceeding 30.0 kg/m² is defined as obesity. A sub-set of the obese category is defined as those morbidly obese (BMI greater than 40.0 kg/m²). In this chapter and subsequent chapters where the term obese (BMI over 30) is used, this includes those who are morbidly obese (BMI over 40).

Data on the prevalence of obesity and overweight is available from the Health Survey for England (HSE). The HSE is an annual survey designed to monitor the health of the population of England. Each survey consists of core questions and measurements, plus modules of questions on specific issues that change periodically. The HSE 2003² is used to perform most of

the analysis in this chapter as it is the most recent data available that contains a large enough sample size to carry out detailed analyses. Data for 2005 is included only when looking at overall time trends³.

Data on obesity and overweight among ethnic minority groups are taken from the HSE 2004⁴. The 2004 survey focused on the health of ethnic minorities and therefore a large sample size among ethnic minority groups was achieved.

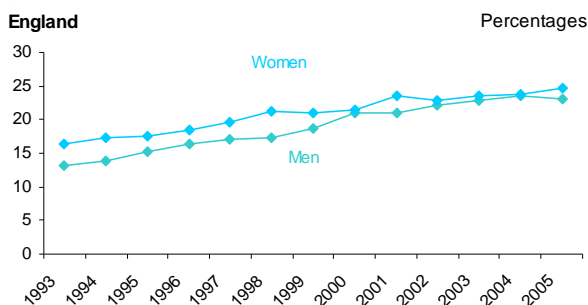
This chapter also reports on the prevalence of overweight and obesity for countries in the European Union. This data is collected by Health Interview Surveys over a number of years and is presented by Eurostat⁵.

Finally, the chapter focuses on a report published by The Department of Health (DH)⁶ in August 2006 that forecasted what levels of obesity in England may be in 2010 if current trends in obesity prevalence continue.

Trends in BMI

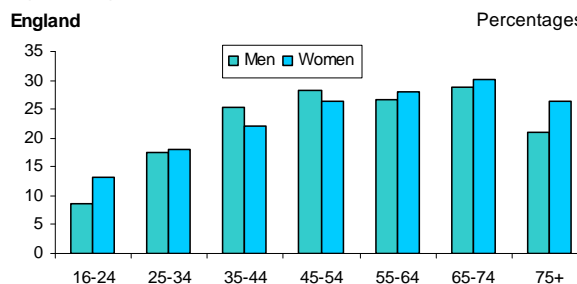
Results from the HSE show that in England the proportion of adults with a desirable BMI (BMI over 18.5 to 25) decreased between 1993 and 2005, from 41.0% to 32.2% among men and from 49.5% to 40.7% among women. There was no significant change in the proportion of adults who were overweight (BMI over 25 to 30), though there was a marked increase in the proportion who were obese. The proportion who were categorised as obese (BMI over 30) increased from 13.2% of men in 1993 to 23.1% in 2005 and from 16.4% to 24.8% of women (Table 2.1 and Figure 2.1).

Figure 2.1 Prevalence of obesity among adults, by gender, 1993-2005



Source: Health Survey for England 2005 - updating of trend tables to include 2005 data. The Information Centre

Figure 2.2 Proportion of adults who are obese, by age and gender, 2003



Source: Health Survey for England 2003, The Department of Health
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Mean BMI did not differ significantly between men and women in 2003 (26.9 kg/m² among men and 26.7 kg/m² among women). Among men, mean BMI increased with age, from 23.7 kg/m² in those aged 16 to 24 to 28.1 kg/m² in those aged 65 to 74, and then declined to 27.1 kg/m² in those aged 75 and over. A similar pattern emerged in women, as mean BMI increased with age from 24.2 kg/m² in the youngest age group to 28.1 kg/m² in those aged 65 to 74 and then declined in the oldest age group to 27.3 kg/m².

A greater proportion of men than women were overweight (43.2% compared with 32.6%), and this was true for all age groups. There was little difference between the sexes in the proportion obese (22.2% of men and 23.0% of women). Overall, when combining the categories of overweight and obese (BMI over 25), 65.4% of men and 55.5% of women were either overweight or obese in 2003.

Approximately three times the proportion of women (2.9%) as of men (1.0%) were morbidly obese (BMI over 40). The proportion morbidly obese was highest in those aged 45 to 54, among both men (1.5%) and women (3.9%) As with mean BMI, for both men and women, obesity increased with age up until 65 to 74 year olds (Table 2.2).

BMI and socio-economic classifications

We now look at several socio-economic factors which may be linked to BMI. Similar relationships are seen for women between BMI and NS-SEC, income and IMD. For men income and deprivation appear to be related to BMI in the same way, however patterns look to be different for men and women.

NS-SEC

HSE respondents are assigned to a National Statistics Socio-Economic Classification (NS-SEC) category based on the current or former occupation of the household reference person. Here NS-SEC categories are divided into three main groups: managerial and professional; intermediate; and routine and manual occupations.

In 2003, prevalence of obesity among women was lower in managerial and professional households (18.7%) and in intermediate households (19.6%) than in routine and manual households (29.0%) (Table 2.3). The prevalence of morbid obesity was 1.6% among women in managerial and professional households but 4.0% among women in routine and manual households. For men, the difference between NS- SEC groups was less marked.

Income

In 2003, there was no relationship between the proportion of men who were obese and

equivalised household income (a measure of household income that takes account of the number of people in the household). The proportion of men overweight including obese (BMI over 25) was lower in the lowest income quintile (59.4%) than in other income quintiles (all over 65%).

A different pattern emerged among women as the proportion who were obese increased as household income decreased. Among women in the highest income quintile, 15.4% were obese whereas in the lowest income quintile this rose to 28.1%. The proportion of women who were either overweight or obese was also lower in the highest income quintile (47.0%) than the other four income quintiles (ranging from 54.4% to 61.0%) (Table 2.4).

IMD

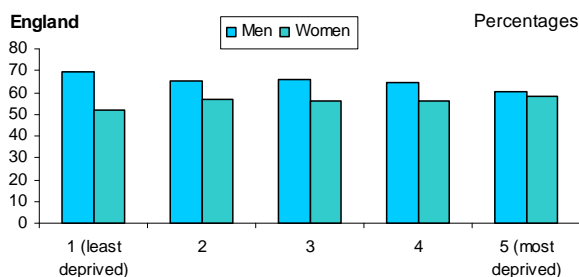
Obesity and overweight prevalence by Index of Multiple Deprivation (IMD), broken down into five quintiles, is also examined. The first quintile indicates the lowest level of deprivation, whilst the fifth quintile shows the highest levels of deprivation. The model of multiple deprivation which underpins the IMD 2004 is based on distinct domains of deprivation which can be recognised and measured separately. The seven domains of deprivation are income, employment, health and disability, education, skills and training, barriers to housing and services, living environment and crime⁷.

In 2003, men in the least deprived quintile had the highest prevalence of overweight including obese (69.8%), while men in the most deprived quintile had the lowest prevalence (60.2%). There was no apparent relationship between IMD and prevalence of obesity among men.

Conversely, among women those in the most deprived quintile had the highest prevalence of overweight including obese (58.1%) while those in the least deprived quintile had the lowest prevalence (51.9%). Similarly, women from the most deprived

areas had the highest prevalence of obesity (Table 2.5 and Figure 2.3).

Figure 2.3 Body mass index (BMI) by Index of Multiple Deprivation (IMD) by gender, 2003



Source: Health Survey for England 2003, The Department of Health
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Urbanisation

In 2003, a relationship between overweight including obese and the degree of urbanisation was apparent. Men from urban areas had the lowest prevalence of overweight including obese (58.5%), rising to 65.9% of men in suburban areas and 70.1% for men in rural areas (Table 2.6). Prevalence of obesity follows a similar pattern.

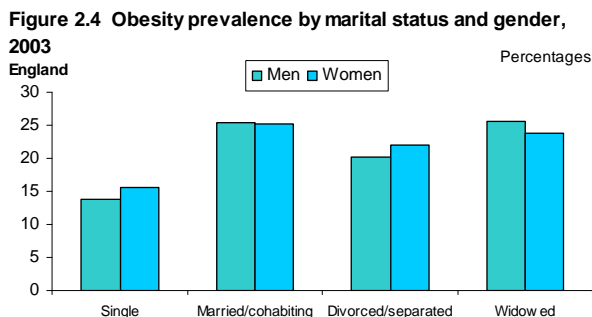
As with men, women from urban areas had the lowest prevalence of overweight including obese (51.2%). The prevalence was similar among women from suburban (56.8%) and rural areas (55.6%). For obesity, there was a slightly different pattern. Women from suburban areas had the highest prevalence of obesity (24.3%) but there was no difference between women from urban and rural areas (20.3% and 21.5%, respectively).

BMI and demographic characteristics

Marital status

Table 2.7 shows overweight and obesity prevalence for men and women by marital status. In 2003, single men were the least likely to be both overweight including obese (42.2%) and just obese (13.8%). The prevalence of overweight including obese was highest among married and cohabiting

men (73.8%). Prevalence of obesity was higher among married and cohabiting men (25.4%) and widowed men (25.6%). (Figure 2.4)



Source: Health Survey for England 2003, The Department of Health
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Similar to men, single women were the least likely to be overweight including obese (37.7%), whilst widows (66.4%) were the most likely. Prevalence of obesity was also lowest among single women (15.6%).

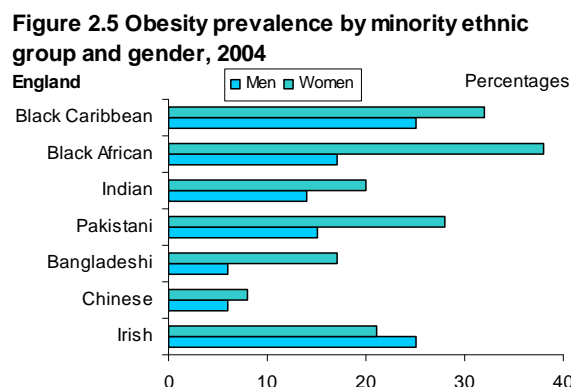
Ethnicity

The use of standard BMI cut off points in measuring obesity and overweight among certain ethnic groups is under debate. This is because the relationship between BMI and body fat varies between ethnic groups, but currently there are no agreed ethnicity specific BMI cut off points. The HSE therefore uses the definition of overweight and obesity as used for the general population.

The HSE 2004 report, showed that among minority ethnic groups Bangladeshi and Chinese men had the lowest prevalence of overweight including obese (44% and 37% respectively) and of obesity (both 6%). Black Caribbean and Irish men had the highest prevalence of obesity: a quarter of men in these age groups (25%) were classified as obese (Figure 2.5).

Among women, the prevalence of overweight including obese was higher among Black African (70%), Black Caribbean (65%), and Pakistani (62%) groups than in the general population (57%).

Bangladeshi women (51%) and particularly Chinese women (25%) had lower prevalence of overweight including obese than the general population. Obesity prevalence was higher for Black African women (38%), Black Caribbean women (32%) and Pakistani women (28%) and lower for Chinese women (8%) than for women in the general population (23%) (Table 2.8).



Source: Health Survey for England 2004. The Information Centre

The mean BMI of Chinese (24.1kg/m²), Bangladeshi (24.7kg/m²), Indian (25.8kg/m²) and Pakistani (25.9 kg/m²) men was significantly lower than the general population (27.1kg/m²). Among women, those of Chinese origin had a markedly lower mean BMI (23.2kg/m²) than those in the general population (26.8kg/m²). Indian (26.2kg/m²) and Irish women (26.7 kg/m²) had a similar mean BMI to those in the general population. In contrast, mean BMI was higher among Black Caribbean (28.0kg/m²) and Black African (28.8 kg/m²) women.

Regional patterns

Differences in obesity and overweight prevalence is also seen between different Government Office Regions (GORs) and Strategic Health Authorities (SHAs) in England. Among men, the prevalence of overweight including obese was greatest among those living in the East Midlands GOR (68.7%), while the prevalence of obesity was greatest among those living in Yorkshire and the Humber GOR (25.2%) in

2003. Men living in London GOR had the lowest prevalence of obesity (17.6%).

Women living in the West Midlands GOR were most likely to be obese (28.7%) while women living in the South East region had the lowest prevalence of obesity (19.3%) (Table 2.9).

The most recent years of the HSE survey data (2002, 2003 and 2004) have been combined to perform analyses by Strategic Health Authority.

Variations between SHAs was also apparent in the overall prevalence of overweight and obesity from the HSE 2002-2004 (Table 2.10). South Yorkshire and North West London SHAs showed the lowest levels of overweight (33.3% and 33.4% respectively), whilst Dorset and Somerset, and Essex showed the highest levels of overweight (42.4% and 42.0% respectively). North Central London and Avon, Gloucestershire and Wiltshire showed the lowest obesity prevalence (16.7% and 18.7% respectively). Trent and Birmingham and Black Country showed the highest levels of obesity prevalence (27.2% and 26.7% respectively).

The HSE does not allow for analysis below Strategic Health Authority level. However, Neighbourhood Statistics have developed synthetic estimates for Primary Care Organisations⁸. This research is currently being reviewed and updated estimates will be available in 2007.

BMI and lifestyle habits

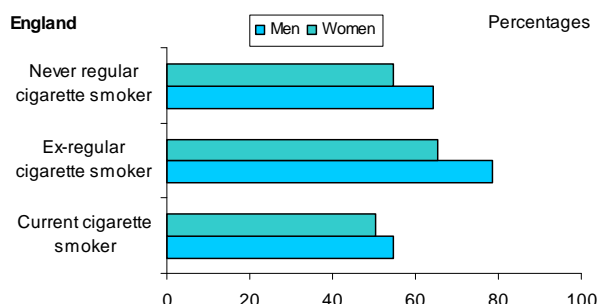
Results from the HSE enable us to consider the prevalence of obesity and overweight by various lifestyle factors such as smoking and physical activity.

Smoking

In 2003, men who were current smokers were less likely to be overweight including obese (54.7%) and obese (15.1%), when compared to both those who have never

regularly smoked (64.2% and 21.2% respectively) and ex-regular smokers (78.6% and 31.0% respectively), (Figure 2.6 and Table 2.11).

Figure 2.6 Prevalence of overweight including obese, by smoking status and gender, 2003



Source: Health Survey for England 2003, The Department of Health
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Among women, those who were current smokers had the lowest prevalence of overweight including obese (50.4%), increasing to 54.6% among those who had never regularly smoked and 65.2% among ex-regular smokers. The proportion of women who were obese was similar for those who were current smokers and never regular smokers (19.9% and 22.2% respectively) but was higher among ex-regular smokers (29.1%).

Alcohol consumption

When looking at alcohol consumption and BMI, there was no association between the amount of alcohol consumed on the heaviest drinking day in the week prior to interview and BMI status among men.

Among women, those who had consumed less than the maximum daily recommended amount of alcohol (less than 3 units) had a higher prevalence of overweight including obese (58.4%) and obesity (25.2%) than those women who had drunk more than twice the recommended daily maximum (6 units or more), where the equivalent figures were 49.8% and 19.8%, respectively (Table 2.12).

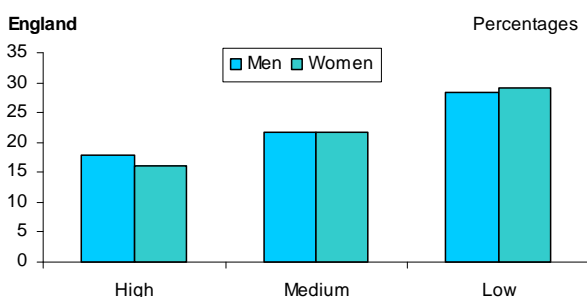
Physical activity

The HSE provides summary measures of physical activity levels relating to current physical activity guidelines. This measure is divided between high, medium and low activity. High activity levels are the equivalent to current physical activity guidelines for adults: at least 30 minutes of at least moderate intensity activity, at least five days a week.

A relationship between summary activity levels and prevalence of both overweight and obesity for both men and women can be seen. Among men, prevalence of overweight including obese was 71.7% among men with low levels of activity, falling to 59.7% among men with high activity levels. The same pattern was seen for obesity, with 28.3% of men reporting low activity levels being obese compared to 17.8% of men with high activity levels.

A similar pattern was seen among women; 63.0% of women with low activity levels were overweight including obese and 29.2% were obese. This fell to 47.9% and 16.0% respectively, among women who reported high levels of activity (Table 2.13 and Figure 2.7).

Figure 2.7 Prevalence of obesity by summary physical activity levels and gender, 2003



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European comparison of BMI

Health Interview Surveys report the prevalence of obesity and overweight among European Union (EU) countries, as shown in Table 2.14. Of the EU countries, Malta

reported the highest prevalence of obesity (23.0%), whilst Italy reported the lowest (8.1%). Focusing on those with a BMI over 25 to 30, Greece had the highest proportion of overweight people (43.3%) and France had the lowest (27.8%).

Overall, when combining the categories of overweight and obese, the United Kingdom reported the highest proportion of overweight and obese people (61.0%) and France again reported the lowest (37.1%).

Waist circumference

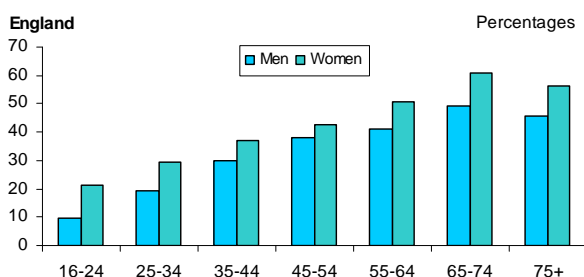
As mentioned in the background to the chapter, measurements other than BMI exist that can help identify the health risks of being overweight and obese as well as defining obesity. Although BMI allows for differences in height, it does not distinguish between mass due to body fat and mass due to muscular physique, or the distribution of fat. Waist circumference is a widely recognised measure to identify those with a health risk from being overweight. NICE have recently suggested that waist circumference is a useful measure to assess health risks in people who are overweight but have a BMI less than 35kg/m². A raised waist circumference is defined as 102cm and over in men and 88cm and over in women.

HSE 2003 reports that mean waist circumference was 96.5 cm in men and 86.4 cm in women. In men it increased from 85.1 cm in those aged 16 to 24 to 102.2 cm in men aged 65 to 74 and then declined to 100.5 cm in the oldest age group. Among women a similar pattern was seen: waist circumference increased from 78.7 cm in the youngest age group to 92.6 cm in women aged 65 to 74, with a decline in the oldest age group. The proportion with a raised waist circumference was higher in women than in men in all age groups (41.1% and 31.1% respectively) (Table 2.15 and Figure 2.8).

As with BMI status, raised waist circumference was associated with reported

levels of physical activity. For both men and women, proportions with a raised waist circumference were higher for those with lower levels of physical activity. For example, the proportion of men reporting low levels of activity with a raised waist circumference was 42.4%, compared to 23.4% of men who reported high levels of physical activity. A similar pattern was seen among women; 52.5% of women with low activity levels had a raised waist circumference. This fell to 30.4% among women who reported high levels of activity (Table 2.16).

Figure 2.8 Percentage with a raised waist circumference, by age and gender, 2003



Source: Health Survey for England 2003. The Department of Health
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Waist-hip ratio (WHR) is sometimes used as a measurement to define central obesity, as it provides an indication of the distribution of fat on the body, particularly the deposition of abdominal fat. WHR is defined as mean waist circumference divided by mean hip circumference. A raised waist-hip ratio is defined as a waist-hip ratio of 0.95 and above for men and of 0.85 and above in women. Information relating to WHR can be found in Tables 2.15 and 2.16.

Forecasting obesity to 2010

Information from the DH report, Forecasting Obesity to 2010 estimates that 33% of men will be obese and 42% will be overweight in 2010. This compares with 22% and 43% respectively in 2003. It is interesting to note that the percentage of men who are forecasted to be obese in 2010 is greater than the percentage of women (28%), (Table 2.17). This is because a greater rate of

increase in obesity was seen in men than women between 1993 and 2003.

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Table 2.1 Body mass index (BMI) by gender, 1993-2005

England											Percentages					
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003 (unweighted) ¹	2004 (unweighted) ¹	2005 (unweighted) ¹	2003 (weighted) ¹	2004 (weighted) ¹	2005 (weighted) ¹
Men																
18.5 or under	1.4	1.2	1.3	1.2	1.0	1.2	1.5	1.1	1.2	1.4	1.2	1.1	1.3	1.4	1.4	1.5
Over 18.5-25	41.0	40.7	39.5	37.7	36.9	36.0	36.0	33.4	31.1	33.1	31.4	29.8	32.2	33.2	32.1	33.8
Over 25-30	44.4	44.3	44.0	44.6	45.2	45.5	43.9	44.5	46.6	43.4	44.4	45.5	43.4	43.2	43.9	42.6
Over 30 ²	13.2	13.8	15.3	16.4	17.0	17.3	18.7	21.0	21.0	22.1	22.9	23.6	23.1	22.2	22.7	22.1
Over 40	0.2	0.4	0.3	0.4	0.8	0.6	0.8	0.6	0.6	0.8	1.0	0.9	1.0	1.0	0.9	0.9
Women																
18.5 or under	1.9	2.2	2.2	2.0	1.9	2.1	1.8	1.8	1.6	1.9	1.9	1.7	1.6	2.1	1.7	1.7
Over 18.5-25	49.5	49.1	47.4	46.0	45.6	44.6	44.3	43.1	41.9	41.6	41.3	39.8	40.7	42.3	41.2	41.9
Over 25-30	32.2	31.4	32.9	33.6	32.8	32.1	32.8	33.8	32.9	33.7	33.4	34.7	32.9	32.6	33.9	32.1
Over 30 ²	16.4	17.3	17.5	18.4	19.7	21.2	21.1	21.4	23.5	22.8	23.4	23.8	24.8	23.0	23.2	24.3
Over 40	1.4	1.6	1.4	1.4	2.3	1.9	1.9	2.3	2.5	2.6	2.9	2.6	2.9	2.9	2.4	2.7
Bases																
Men	7,247	6,795	6,707	6,997	3,685	6,600	3,204	3,260	6,267	2,969	5,966	2,444	2,930	6,519	2,772	3,144
Women	8,037	7,884	7,729	8,064	4,254	7,730	3,699	3,703	7,414	3,509	7,090	3,135	3,409	6,570	2,812	3,184

1. Data from 2003 onwards has been weighted for non-response. Unweighted data for 2003 onwards are provided for consistency with previous years which are also unweighted
2. Includes over 40

Source:

Health Survey for England 2005 - updating of trend tables to include 2005 data. The Information Centre

Table 2.2 Body mass index (BMI) by age and gender, 2003

England	Percentages							
	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75+
Men								
18.5 or under	1.4	6.4	0.7	0.5	0.4	0.6	0.4	0.5
Over 18.5-25	33.2	62.4	40.6	27.3	23.7	22.4	22.3	29.0
Over 25-30	43.2	22.5	41.2	46.9	47.7	50.3	48.6	49.6
Over 30-40	21.2	8.2	16.7	24.0	26.8	25.6	27.7	20.6
Over 40	1.0	0.4	0.8	1.3	1.5	1.1	1.0	0.2
Over 25 (overweight including obese)	65.4	31.1	58.7	72.2	75.9	77.0	77.3	70.5
Over 30 (obese)	22.2	8.6	17.5	25.3	28.2	26.7	28.7	20.9
Mean BMI	26.9	23.7	26.3	27.6	28.0	28.0	28.1	27.1
Women								
18.5 or under	2.1	7.4	1.9	1.0	1.0	0.7	0.9	2.5
Over 18.5-25	42.3	61.2	51.8	43.5	39.8	32.3	27.6	31.0
Over 25-30	32.6	18.3	28.3	33.3	32.8	39.0	41.5	40.2
Over 30-40	20.1	11.1	15.1	18.6	22.4	25.5	27.5	24.9
Over 40	2.9	2.0	3.0	3.5	3.9	2.5	2.6	1.4
Over 25 (overweight including obese)	55.5	31.3	46.3	55.5	59.2	67.0	71.5	66.5
Over 30 (obese)	23.0	13.1	18.1	22.2	26.4	27.9	30.1	26.3
Mean BMI	26.7	24.2	26.0	26.7	27.4	27.8	28.1	27.3
<i>Bases (unweighted)</i>								
<i>Men</i>	5,966	686	962	1,178	1,001	997	736	406
<i>Women</i>	7,090	788	1,088	1,452	1,142	1,194	810	616
<i>Bases (weighted)</i>								
<i>Men</i>	6,519	960	1,194	1,316	1,073	943	664	369
<i>Women</i>	6,570	912	1,085	1,289	1,073	982	694	536

Source:

Health Survey for England 2003. The Department of Health

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Table 2.3 Body mass index (BMI) by socio-economic classification¹ and gender, 2003

England	Percentages			
	All adults ²	Managerial and Professional	Intermediate	Routine and Manual
Men				
18.5 or under	1.4	1.3	0.6	1.9
Over 18.5-25	33.2	32.1	33.0	34.6
Over 25-30	43.2	45.8	42.3	40.8
Over 30-40	21.2	20.2	22.9	21.6
Over 40	1.0	0.7	1.2	1.1
Over 25 (overweight including obese)	65.4	66.6	66.4	63.5
Over 30 (obese)	22.2	20.9	24.1	22.7
Women				
18.5 or under	2.1	2.1	1.3	2.3
Over 18.5-25	42.3	48.1	43.0	36.2
Over 25-30	32.6	31.1	36.1	32.5
Over 30-40	20.1	17.0	17.0	25.0
Over 40	2.9	1.6	2.6	4.0
Over 25 (overweight including obese)	56.0	49.8	55.7	61.5
Over 30 (obese)	22.9	18.7	19.6	29.0
<i>Bases (unweighted)</i>				
<i>Men</i>	<i>5,954</i>	<i>2,476</i>	<i>1,119</i>	<i>2,290</i>
<i>Women</i>	<i>7,080</i>	<i>2,708</i>	<i>1,394</i>	<i>2,807</i>
<i>Bases (weighted)</i>				
<i>Men</i>	<i>6,503</i>	<i>2,706</i>	<i>1,213</i>	<i>2,495</i>
<i>Women</i>	<i>6,560</i>	<i>2,540</i>	<i>1,283</i>	<i>2,573</i>

1. Based on the current or last job of the household reference person

2. Where the household reference person was a full-time student, had an inadequately described occupation, had never worked or was long-term unemployed they are not shown as separate categories but are included in the all adults column

Source:

Health Survey for England 2003. The Department of Health

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Table 2.4 Body mass index (BMI) by equivalised household income quintiles and gender, 2003

England	Percentages					
	Total	Highest	2nd	3rd	4th	Lowest
Men						
18.5 or under	1.3	0.7	0.7	1.9	1.7	2.0
Over 18.5-25	32.5	28.4	33.7	30.9	32.3	38.6
Over 25-30	44.0	48.9	43.4	44.0	43.4	38.3
Over 30-40	21.2	21.2	21.2	22.0	21.8	19.9
Over 40	1.0	0.9	1.0	1.3	0.8	1.3
Over 25 (overweight including obese)	66.2	70.9	65.5	67.2	66.0	59.4
Over 30 (obese)	22.3	22.0	22.2	23.3	22.6	21.1
Women						
18.5 or under	2.0	2.2	1.4	1.7	1.7	3.4
Over 18.5-25	42.1	50.8	44.2	40.3	37.3	37.6
Over 25-30	32.6	31.6	32.0	34.1	34.4	30.9
Over 30-40	20.4	13.7	19.5	21.4	23.6	23.8
Over 40	2.9	1.7	2.9	2.6	3.0	4.2
Over 25 (overweight including obese)	55.9	47.0	54.4	58.0	61.0	59.0
Over 30 (obese)	23.3	15.4	22.5	23.9	26.7	28.1
<i>Bases (unweighted)</i>						
<i>Men</i>	5,166	1,197	1,214	1,089	821	845
<i>Women</i>	6,077	1,114	1,278	1,342	1,116	1,227
<i>Bases (weighted)</i>						
<i>Men</i>	5,606	1,304	1,340	1,178	877	907
<i>Women</i>	5,603	1,046	1,221	1,234	993	1,109

Source:

Health Survey for England 2003. The Department of Health

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Table 2.5 Body mass index (BMI) by Index of Multiple Deprivation (IMD) and gender, 2003

England	Total	1 (least deprived)	2	3	4	5 (most deprived)	Percentages
Men							
18.5 or under	1.4	0.9	1.4	1.1	1.8	2.2	
Over 18.5-25	33.2	29.3	33.2	33.0	33.7	37.6	
Over 25-30	43.2	48.8	43.8	43.5	39.0	40.0	
Over 30-40	21.2	20.4	20.7	21.2	24.7	18.6	
Over 40	1.0	0.6	0.9	1.1	0.9	1.6	
Over 25 (overweight including obese)	65.4	69.8	65.5	65.9	64.5	60.2	
Over 30 (obese)	22.2	21.0	21.6	22.3	25.6	20.2	
Women							
18.5 or under	2.1	2.2	1.5	1.5	1.9	3.8	
Over 18.5-25	42.3	45.9	41.5	42.8	42.3	38.1	
Over 25-30	32.6	32.7	34.6	32.9	32.7	29.7	
Over 30-40	20.1	17.6	19.9	20.4	20.2	23.0	
Over 40	2.9	1.6	2.5	2.5	2.9	5.4	
Over 25 (overweight including obese)	55.6	51.9	57.0	55.8	55.8	58.1	
Over 30 (obese)	23.0	19.2	22.4	22.9	23.1	28.4	
<i>Bases (unweighted)</i>							
<i>Men</i>	5,956	1,368	1,231	1,195	1,182	980	
<i>Women</i>	7,078	1,612	1,413	1,368	1,476	1,209	
<i>Bases (weighted)</i>							
<i>Men</i>	6,508	1,443	1,320	1,314	1,316	1,115	
<i>Women</i>	6,558	1,469	1,303	1,277	1,385	1,125	

Source:

Health Survey for England 2003. The Department of Health

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Table 2.6 Body mass index (BMI) by degree of urbanisation and gender, 2003

England	Percentages			
	Total	Urban	Suburban	Rural
Men				
18.5 or under	1.4	2.1	1.4	0.9
Over 18.5-25	33.2	39.4	32.7	29.0
Over 25-30	43.2	41.4	42.9	45.4
Over 30-40	21.2	16.4	21.8	23.8
Over 40	1.0	0.7	1.2	0.8
Over 25 (overweight including obese)	65.4	58.5	65.9	70.1
Over 30 (obese)	22.2	17.1	22.9	24.7
Women				
18.5 or under	2.1	2.8	2.2	1.4
Over 18.5-25	42.4	46.1	41.0	42.9
Over 25-30	32.6	30.8	32.5	34.1
Over 30-40	20.1	17.2	21.2	19.5
Over 40	2.9	3.2	3.1	2.0
Over 25 (overweight including obese)	55.5	51.2	56.8	55.6
Over 30 (obese)	23.0	20.3	24.3	21.5
<i>Bases (unweighted)</i>				
<i>Men</i>	5,966	1,068	3,445	1,453
<i>Women</i>	7,088	1,173	4,205	1,710
<i>Bases (weighted)</i>				
<i>Men</i>	6,519	1,271	3,739	1,509
<i>Women</i>	6,569	1,146	3,887	1,536

Source:

Health Survey for England 2003. The Department of Health

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Table 2.7 Body mass index (BMI) by marital status and gender, 2003

England						Percentages
	Total	Single	Married/cohabiting	Divorced/separated	Widowed	
Men						
18.5 or under	1.4	3.9	0.6	0.9	0.5	
Over 18.5-25	33.2	53.9	25.6	31.3	30.2	
Over 25-30	43.2	28.4	48.4	47.5	43.7	
Over 30-40	21.2	12.7	24.4	19.4	24.7	
Over 40	1.0	1.1	1.0	0.9	1.0	
Over 25 (overweight including obese)	65.4	42.2	73.8	67.8	69.3	
Over 30 (obese)	22.2	13.8	25.4	20.3	25.6	
Women						
18.5 or under	2.1	5.4	1.3	1.5	1.4	
Over 18.5-25	42.4	56.9	39.2	43.6	32.2	
Over 25-30	32.6	22.1	34.3	32.8	42.6	
Over 30-40	20.1	12.7	22.3	19.4	21.5	
Over 40	2.9	2.9	3.0	2.7	2.3	
Over 25 (overweight including obese)	55.5	37.7	59.6	54.9	66.4	
Over 30 (obese)	23.0	15.6	25.3	22.1	23.8	
<i>Bases (unweighted)</i>						
<i>Men</i>	5,966	1,273	4,111	386	196	
<i>Women</i>	7,089	1,272	4,351	729	737	
<i>Bases (weighted)</i>						
<i>Men</i>	6,519	1,635	4,297	399	188	
<i>Women</i>	6,569	1,272	4,087	601	609	

Source:

Health Survey for England 2003. The Department of Health

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Table 2.8 Body mass index (BMI) by minority ethnic group and gender, 2004

England								Percentages	
	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish	General population	
Men									
18.5 or under	0	1	3	3	4	3	2	1	
Over 18.5-25	32	37	44	41	51	60	31	32	
Over 25-30	42	45	39	40	39	31	42	44	
Over 30-40	25	17	13	14	6	6	24	22	
Over 40	0	0	0	1	0	0	2	1	
All over 25 (overweight, including obese)	67	62	53	55	44	37	67	67	
All over 30 (obese)	25	17	14	15	6	6	25	23	
Mean BMI	27.1	26.4	25.8	25.9	24.7	24.1	27.2	27.1	
Women									
18.5 or under	3	2	3	2	5	5	2	2	
Over 18.5-25	33	29	42	35	44	70	40	41	
Over 25-30	32	31	35	34	34	17	37	34	
Over 30-40	28	34	19	26	17	7	19	21	
Over 40	4	5	1	2	1	0	2	2	
All over 25 (overweight, including obese)	65	70	55	62	51	25	58	57	
All over 30 (obese)	32	38	20	28	17	8	21	23	
Mean BMI	28.0	28.8	26.2	27.1	25.7	23.2	26.7	26.8	
<i>Bases (unweighted)</i>									
Men	317	297	482	346	330	307	420	2,444	
Women	459	332	546	391	353	308	555	3,135	
<i>Bases (weighted)</i>									
Men	380	291	798	336	143	135	1,574	39,244	
Women	500	344	921	387	153	136	2,008	39,803	

Source:

Health Survey for England 2004. The Information Centre

Table 2.9 Body mass index (BMI) by Government Office Region (GOR) and gender, 2003

England	Percentages									
	England	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East England	London	South East	South West
Men										
18.5 or under	1.4	0.7	2.0	2.6	1.6	1.7	0.6	1.5	1.3	0.4
Over 18.5-25	33.2	34.2	32.4	31.0	29.7	31.8	31.8	40.3	33.6	31.3
Over 25-30	43.2	42.1	41.7	41.2	45.2	43.5	43.6	40.6	45.3	45.6
Over 30-40	21.2	21.7	23.2	24.4	22.6	21.4	23.0	16.7	19.2	21.4
Over 40	1.0	1.3	0.8	0.8	0.9	1.6	0.9	0.9	0.7	1.4
Over 25 (overweight including obese)	65.4	65.1	65.6	66.4	68.7	66.5	67.6	58.2	65.2	68.4
Over 30 (obese)	22.2	23.0	23.9	25.2	23.5	23.0	24.0	17.6	19.9	22.8
Women										
18.5 or under	2.1	1.1	2.2	2.3	1.5	1.8	1.8	3.4	2.0	2.1
Over 18.5-25	42.3	39.7	38.0	42.3	41.1	37.0	41.7	49.1	46.2	42.1
Over 25-30	32.6	34.9	35.6	31.5	33.4	32.5	32.5	27.4	32.4	34.7
Over 30-40	20.1	22.7	21.8	19.2	19.9	26.0	20.6	17.9	16.9	18.8
Over 40	2.9	1.6	2.4	4.7	4.1	2.7	3.4	2.2	2.5	2.3
Over 25 (overweight including obese)	55.5	59.2	59.8	55.4	57.4	61.2	56.6	47.5	51.8	55.8
Over 30 (obese)	23.0	24.3	24.2	23.9	24.0	28.7	24.0	20.1	19.3	21.1
<i>Bases (unweighted)</i>										
<i>Men</i>	5,966	368	849	560	574	629	728	727	930	601
<i>Women</i>	7,090	468	1,006	667	678	778	825	837	1,119	712
<i>Bases (weighted)</i>										
<i>Men</i>	6,519	339	878	634	591	676	755	930	1,052	663
<i>Women</i>	6,570	376	901	650	582	696	735	876	1,071	683

Source:

Health Survey for England 2003. The Department of Health

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Table 2.10 Prevalence of overweight and obesity by Strategic Health Authority (SHA), 2002-2004¹

England	Percentages			
	Overweight ² (BMI 25 to 30)	Obese ² (BMI over 30)	Unweighted bases	Adjusted bases ²
County Durham and Tees Valley	40.9	25.6	671	975
Northumberland, Tyne & Wear	40.7	22.9	893	1,384
Cheshire & Merseyside	36.7	22.3	1,173	1,794
Cumbria and Lancashire	39.8	24.1	1,011	1,520
Greater Manchester	38.0	24.9	1,276	1,879
North and East Yorkshire and Northern Lincolnshire	36.4	26.2	877	1,385
South Yorkshire	33.3	25.5	650	1,039
West Yorkshire	38.7	24.0	1,048	1,625
Leicestershire, Northamptonshire and Rutland	37.2	24.0	851	1,332
Trent	38.2	27.2	1,592	2,413
Birmingham and the Black Country	39.4	26.7	982	1,502
West Midlands South	41.0	24.2	855	1,261
Shropshire and Staffordshire	40.9	25.6	816	1,262
Bedfordshire and Hertfordshire	41.6	22.6	864	1,291
Essex	42.0	20.9	901	1,380
Norfolk, Suffolk and Cambridgeshire	41.5	25.7	1,171	1,777
North Central London	38.1	16.7	437	689
North East London	39.0	19.9	740	1,119
North West London	33.4	20.0	741	1,083
South East London	35.8	20.1	473	729
South West London	33.7	22.6	550	824
Hampshire and Isle of Wight	40.8	21.3	845	1,307
Kent and Medway	37.4	23.6	716	1,110
Surrey and Sussex	37.3	19.7	1,368	2,114
Thames Valley	37.1	21.5	1,144	1,765
Avon, Gloucestershire and Wiltshire	39.5	18.7	1,022	1,544
Dorset and Somerset	42.4	20.7	609	906
South West Peninsula	38.8	23.0	837	1,277

1. Samples have not been weighted for non-response or selection
2. Figures are adjusted so that each year is given an equal weight

Source:

Health Survey for England 2002. The Department of Health
 Health Survey for England 2003. The Department of Health
 Health Survey for England 2004. The Information Centre
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Table 2.11 Body mass index (BMI) by smoking status and gender, 2003

England	Total	Current cigarette smoker	Ex-regular cigarette smoker	Percentages Never smoked regularly
Men				
18.5 or under	1.4	1.8	0.2	1.8
Over 18.5-25	33.1	43.5	21.3	34.0
Over 25-30	43.3	39.5	47.5	43.0
Over 30-40	21.3	14.6	29.5	20.2
Over 40	1.0	0.6	1.5	1.0
Over 25 (overweight including obese)	65.6	54.7	78.6	64.2
Over 30 (obese)	22.3	15.1	31.0	21.2
Women				
18.5 or under	2.1	3.4	0.9	2.0
Over 18.5-25	42.2	46.3	33.9	43.4
Over 25-30	32.7	30.5	36.0	32.4
Over 30-40	20.1	17.3	25.9	19.4
Over 40	2.9	2.6	3.3	2.9
Over 25 (overweight including obese)	55.7	50.4	65.2	54.6
Over 30 (obese)	23.0	19.9	29.1	22.2
<i>Bases (unweighted)</i>				
<i>Men</i>	<i>5,949</i>	<i>1,529</i>	<i>1,793</i>	<i>2,627</i>
<i>Women</i>	<i>7,077</i>	<i>1,777</i>	<i>1,463</i>	<i>3,837</i>
<i>Bases (weighted)</i>				
<i>Men</i>	<i>6,495</i>	<i>1,751</i>	<i>1,785</i>	<i>2,959</i>
<i>Women</i>	<i>6,556</i>	<i>1,651</i>	<i>1,308</i>	<i>3,597</i>

Source:

Health Survey for England 2003. The Department of Health

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Table 2.12 Body mass index (BMI) by units of alcohol drunk on heaviest drinking day in the week prior to interview and gender, 2003

England	Total	Less than 4/3 units ¹	4/3 units or more, less than 8/6 units ¹	8/6 units or more ¹
Men				
18.5 or under	1.4	1.8	0.6	1.1
Over 18.5-25	32.9	33.0	31.4	33.9
Over 25-30	43.4	42.9	46.4	42.2
Over 30-40	21.3	21.2	20.7	21.9
Over 40	1.0	1.1	0.8	0.9
Over 25 (overweight including obese)	65.7	65.2	67.9	64.9
Over 30 (obese)	22.3	22.3	21.5	22.7
Women				
18.5 or under	2.0	2.1	2.3	1.5
Over 18.5-25	42.2	39.5	46.7	48.7
Over 25-30	32.8	33.3	33.3	30.0
Over 30-40	20.2	21.9	15.8	17.5
Over 40	2.8	3.2	1.8	2.3
Over 25 (overweight including obese)	55.8	58.4	50.9	49.8
Over 30 (obese)	23.0	25.2	17.6	19.8
<i>Bases (unweighted)</i>				
<i>Men</i>	5,907	3,133	1,162	1,612
<i>Women</i>	6,995	4,760	1,246	989
<i>Bases (weighted)</i>				
<i>Men</i>	6,443	3,340	1,249	1,855
<i>Women</i>	6,475	4,363	1,154	958

1. It is recommended that men drink no more than 4 units a day, and women 3 units a day. Binge drinking is classed as 8 or more units for men and 6 or more units for women

Source:

Health Survey for England 2003. The Department of Health

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Table 2.13 Body mass index (BMI) by summary physical activity levels¹ and gender, 2003

England	Percentages			
	Total	High	Medium	Low
Men				
18.5 or under	1.4	1.7	1.0	1.5
Over 18.5-25	33.2	38.6	32.6	26.9
Over 25-30	43.2	41.8	44.7	43.4
Over 30-40	21.2	17.4	20.1	27.0
Over 40	1.0	0.4	1.4	1.2
Over 25 (overweight including obese)	65.4	59.7	66.3	71.7
Over 30 (obese)	22.2	17.8	21.6	28.3
Women				
18.5 or under	2.1	2.5	1.8	2.2
Over 18.5-25	42.3	49.6	44.7	34.8
Over 25-30	32.6	31.9	31.9	33.8
Over 30-40	20.1	14.0	18.9	25.6
Over 40	2.9	2.0	2.8	3.6
Over 25 (overweight including obese)	55.6	47.9	53.6	63.0
Over 30 (obese)	23.0	16.0	21.7	29.2
<i>Bases (unweighted)</i>				
<i>Men</i>	5,956	2,157	1,913	1,886
<i>Women</i>	7,078	1,797	2,658	2,623
<i>Bases (weighted)</i>				
<i>Men</i>	6,508	2,458	2,093	1,957
<i>Women</i>	6,558	1,689	2,472	2,397

1. High = 60 minutes or more on all 7 days; medium = 30 to 59 minutes on all 7 days; low = lower level of activity

Source:

Health Survey for England 2003. The Department of Health

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Table 2.14 Prevalence of overweight and obesity among European Countries^{1,2}

Europe	Percentages		
	Overweight and obese	Overweight	Obese
Austria	43.5	34.9	8.6
Belguim	41.8	30.8	11.0
Bulgaria	46.0	33.6	12.4
Cyprus	46.1	33.7	12.3
Czech Republic	50.8	36.4	14.4
Denmark	41.7	32.2	9.5
Estonia	44.2	30.9	13.3
Finland	51.3	36.7	14.5
France	37.1	27.8	9.3
Germany	59.7	39.4	20.3
Greece	54.0	43.3	10.7
Hungary	52.7	33.8	18.8
Iceland	50.3	38.7	11.6
Ireland	46.2	33.1	13.2
Italy	39.8	31.7	8.1
Latvia	45.3	29.8	15.5
Lithuania	49.0	32.9	16.0
Malta	57.5	34.5	23.0
Netherlands	42.3	33.3	8.9
Poland	43.2	31.8	11.4
Portugal	51.5	36.8	14.7
Romania	41.8	33.1	8.6
Slovakia	46.7	32.4	14.3
Slovenia	48.5	36.2	12.3
Spain	49.0	35.7	13.3
Sweden	43.8	33.8	10.1
UK	61.0	38.3	22.7

1. Aged 15 and over

2. There is no fixed periodicity in these kinds of health surveys. Very few countries have a yearly survey on these topics. The Health Interview Survey (HIS) data are collected in different years depending on the country, going from 1996 to 2003. For more details please see Appendix A

Source:

Health status: indicators from the National Health Interview Surveys. European Commission: Eurostat

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Table 2.15 Waist circumference and waist-hip ratio (WHR), by age and gender, 2003

England	Numbers/Percentages							
	Total	16-24	25-34	35-44	45-54	55-64	65-74	75+
Men								
Mean waist circumference	96.5	85.1	93.1	97.4	99.3	101.2	102.2	100.5
Mean WHR	0.92	0.84	0.89	0.92	0.94	0.96	0.96	0.95
% with waist circumference 102cm and over	31.1	9.4	19.5	29.9	38.0	41.2	49.2	45.5
% with WHR 0.95 and over	33.1	3.9	13.6	31.5	41.3	53.9	57.4	50.6
Women								
Mean waist circumference	86.4	78.7	83.0	85.5	87.3	89.7	92.6	90.6
Mean WHR	0.82	0.78	0.79	0.81	0.82	0.84	0.85	0.86
% with waist circumference 88cm and over	41.1	21.2	29.6	36.8	42.4	50.8	60.9	56.2
% with WHR 0.85 and over	30.3	11.2	18.0	26.1	28.3	41.6	45.4	53.6
<i>Bases (unweighted)¹</i>								
<i>Men</i>	4,962	475	736	978	865	867	644	397
<i>Women</i>	5,995	605	877	1,192	1,014	1,045	698	564
<i>Bases (weighted)¹</i>								
<i>Men</i>	5,397	771	969	1,074	891	779	551	363
<i>Women</i>	5,554	752	891	1,044	895	809	606	556

1. Bases vary: those shown are for those aged 16 and over with a valid waist and hip measurement

Source:

Health Survey for England 2003. The Department of Health

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Table 2.16 Waist circumference and waist-hip ratio (WHR) by summary levels of physical activity and gender, 2003

England				
	Total	High	Medium	Low
Men				
Mean waist circumference	96.5	93.3	96.4	100.2
Mean WHR	0.92	0.90	0.92	0.94
% with waist circumference 102cm and over	31.1	23.4	28.9	42.4
% with WHR 0.95 and over	33.2	24.3	29.4	47.4
Women				
Mean waist circumference	86.4	83.1	85.2	89.6
Mean WHR	0.82	0.80	0.81	0.84
% with waist circumference 88cm and over	41.1	30.4	36.2	52.5
% with WHR 0.85 and over	30.2	22.1	26.1	39.3
<i>Bases (unweighted)²</i>				
<i>Men</i>	4,955	1,722	1,591	1,642
<i>Women</i>	5,985	1,477	2,213	2,295
<i>Bases (weighted)²</i>				
<i>Men</i>	5,390	1,987	1,701	1,702
<i>Women</i>	5,545	1,367	2,045	2,133

1. High = 60 minutes or more on all 7 days; medium = 30 to 59 minutes on all 7 days; low = lower level of activity

2. Bases vary: those shown are for those aged 16 and over with a valid waist and hip measurement

Source:

Health Survey for England 2003. The Department of Health

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Table 2.17 Prevalence and number¹ of adults overweight and obese by age and gender, 2003 and 2010

England	Numbers/Percentages									
	Total ²		16 to 34		35 to 54		55 to 74		75 and over	
Men										
Obesity										
2003 ³	22	4,302,588	14	851,769	27	1,848,110	28	1,305,710	22	4,302,588
2010	33	6,658,953	16	1,000,442	38	2,739,197	35	1,800,426	33	6,658,953
Overweight										
2003 ³	43	8,403,365	33	2,066,211	47	3,281,310	50	2,349,520	43	8,403,365
2010	42	8,556,189	32	2,066,758	46	3,311,964	47	2,410,355	42	8,556,189
Women										
Obesity										
2003 ³	23	4,754,080	16	980,440	24	1,695,650	29	1,455,904	26	622,087
2010	28	5,984,653	22	1,340,247	29	2,120,025	28	1,552,815	23	559,090
Overweight										
2003 ³	33	6,772,757	24	1,470,007	33	2,329,645	40	2,021,398	40	951,706
2010	30	6,478,212	22	1,388,170	32	2,312,614	36	1,951,753	33	794,704
<i>Bases (unweighted)⁴</i>										
<i>Men</i>										
2003	5,966	19,391.4	1,648	6,285.1	2,179	6,944.1	1,733	4,739.1	406	1,423.1
2010	-	20,455.9	-	6,382.0	-	7,529.1	-	5,174.9	-	1,639.9
<i>Women</i>										
2003	7,090	20,660.9	1,876	6,205.7	2,594	7,040.1	2,004	5,049.9	616	2,365.2
2010	-	21,472.6	-	6,225.6	-	7,336.2	-	5,476.8	-	2,434.0
<i>Bases (weighted)</i>										
<i>Men</i>										
2003	6,519	-	2,154	-	2,389	-	1,607	-	369	-
<i>Women</i>										
2003	6,570	-	1,996	-	2,362	-	1,675	-	536	-

1. Numbers represent the estimated number of people within each age group who are either overweight or obese
2. For 2010 data, the total number of people either overweight or obese may differ from the cumulative total of the age groups presented. This is due to imprecision within the forecast modelling
3. 2003 prevalence estimates presented are based on data weighted for non-response. The weighted bases for these estimates are also presented
4. Population bases (numbers) are presented in thousands. For 2003, data from the 2003 mid population estimates have been used. For 2010, forecasted mid-year population estimates for 2010 have been applied

Source: Forecasting Obesity to 2010. National Centre for Social Research and Department of Epidemiology and Public Health at the Royal Free and University College Medical School

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3 Obesity among children

Background

This chapter presents key information about obesity and overweight among children aged 2 to 15 living in England, using data from the Health Survey for England (HSE). Since 1995, information about the health of children has been collected as part of the HSE. To improve the robustness of the analyses, the most recent years of HSE survey data (2002¹, 2003² and 2004³) are combined to perform the more detailed analysis in this chapter. Data for 2005 is included only when looking at overall time trends⁴. Earlier analyses using 2001 and 2002 data, and focusing on 2 to 10 year olds, was published in 2003⁵.

As with adults, the HSE collects height and weight measurements to calculate body mass index (BMI) for each child. BMI (adjusted for age and gender) is recommended as a practical estimate of overweight in children. The measurement of obesity and overweight among children needs to take account of the different growth patterns among boys and girls at each age, therefore a universal categorisation cannot be used to define childhood obesity as is the case with adults. Each sex and age group therefore needs its own level of classification for overweight and obesity. The data presented in this chapter uses the UK National BMI percentile classification to describe childhood overweight and obesity. This uses a BMI threshold for each age above which a child is considered overweight (defined as a BMI between the 85th and 95th percentiles) or obese (defined as a BMI above the 95th percentile).

The Government has developed a Public Service Agreement (PSA) target to 'halt the year on year rise in obesity among children aged under 11 by 2010'. Nationally, progress on meeting the target is being monitored through the Health Survey for

England using the UK National BMI percentile classification.

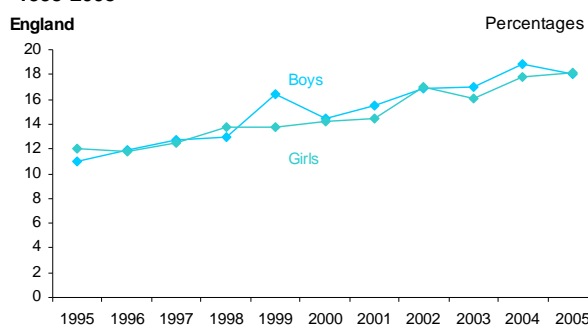
Similar to Chapter 2, the final part of this chapter focuses upon the report published by The Department of Health⁶ in August 2006 that forecasted what levels of obesity in England may be in 2010 if current trends in obesity prevalence continue, using trend data up to 2003 from the HSE.

Trends in obesity and overweight

Between 1995 and 2005, the prevalence of obesity and overweight among both boys and girls increased. Among boys aged 2 to 15, the proportion who were obese increased from 10.9% in 1995 to 18.0% in 2005, and among girls from 12.0% in 1995 to 18.1%, over the same period.

A similar trend emerged among both younger children aged 2 to 10 and older children aged 11 to 15. For those aged 2 to 10, the prevalence of obesity increased from 9.6% to 16.6% among boys and from 10.3% to 16.7% among girls between 1995 and 2005. In the 11 to 15 age group, the prevalence of obesity increased from 13.5% to 20.5% among boys and from 15.4% to 20.6% among girls over the same period (Table 3.1 and Figure 3.1). As the rate of increase for boys and girls is very similar, the rest of the analyses presented in this chapter focuses on all children.

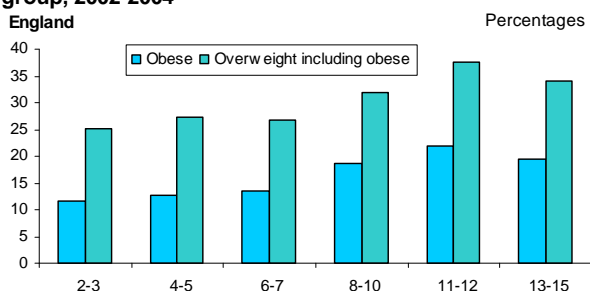
Figure 3.1 Obesity prevalence among children aged 2-15, 1995-2005



Source: Health Survey for England 2005 - updating of trend tables to include 2005 data. The Information Centre

In 2002-2004 the proportion of children who were obese generally increased with age. For example, 11.6% of children aged 2 to 3 were obese compared to 22.0% of children aged 11 to 12, and 19.5% of children aged 13 to 15. The proportions of children who were overweight including obese again rose generally with age (Table 3.2 and Figure 3.2).

Figure 3.2 Obesity prevalence among children by age group, 2002-2004



Source: Health Survey for England 2002, 2003 and 2004. The Department of Health and The Information Centre Copyright © 2006, Re-used with the permission of the Department of Health

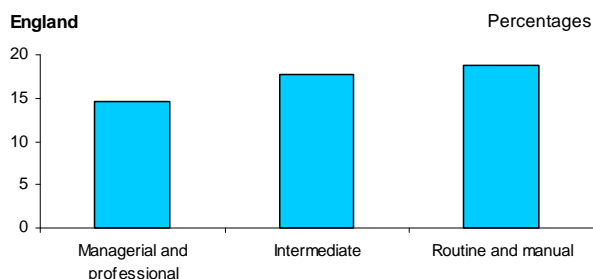
Socio-economic variables

The relationship between the prevalence of obesity among children and area deprivation was analysed using the Index of Multiple Deprivation (IMD). The IMD takes into account the level of deprivation of local areas by focusing on different characteristics such as income, education and housing (see Appendix B for more detail).

There was a clear relationship between the prevalence of obesity among children and IMD. Children aged 2 to 15 from the most deprived quintile (5) had a higher prevalence of obesity than those in the least deprived quintile (19.3% and 13.8% respectively). The same relationship was reported for both the younger and older age groups (Table 3.3).

Table 3.4 shows the relationship between obesity and National Statistics Socio-Economic Classification (NS-SEC). Levels of childhood obesity are highest among those in routine and manual (18.7%) and intermediate households (17.8%), and lowest among managerial or professional households (14.6%) (Figure 3.3).

Figure 3.3 Prevalence of obesity by NS-SEC of household reference person and age, 2002-2004



Source: Health Survey for England 2002, 2003 and 2004. The Department of Health and The Information Centre Copyright © 2006, Re-used with the permission of the Department of Health

The prevalence of obesity among children is also related to household income. In 2001-2002, prevalence of obesity was 13.3% and 12.5% in the two highest income quintiles and 16.3% and 15.8% in the two lowest (no table).

Obesity by Government Office Region

Obesity prevalence varied between the different Government Office Regions (GORs). In 2002-2004, the South West region reported the lowest proportion of obese children aged 2 to 15 (14.8%), whilst London and the West Midlands reported the highest (20.1% and 19.9% respectively). (Table 3.5)

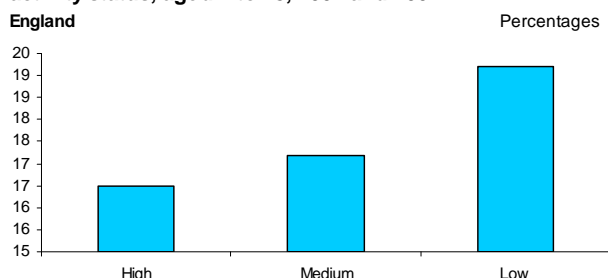
Obesity and physical activity

As part of the HSE in 2002 and 2004, children's parents or guardians were asked questions about a range of children's activities such as sports and exercise activities, walking and active play. Children were usually present and it is expected that they contributed to the answers. The levels of physical activity reported were then presented into three groups: high, medium, and low (see Appendix B for more detail).

Obesity levels among children tended to rise as levels of physical activity fell. In 2002 and 2004, 16.5% of children aged 2 to 15 in the high level of physical activity group were obese compared to 19.2% of those classified as achieving low levels of physical activity.

These results were just statistically significant and should be treated with some caution (Table 3.6 and Figure 3.4).

Figure 3.4 Obesity prevalence among children by physical activity status, aged 2 to 15, 2002 and 2004

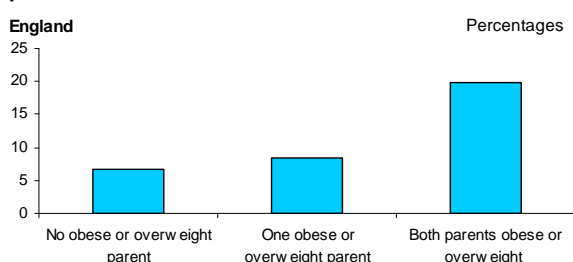


Source: Health Survey for England 2002, 2003 and 2004. The Department of Health and The Information Centre Copyright © 2006, Re-used with the permission of the Department of Health

Obesity prevalence by parental BMI

Table 3.7 reports that there is a relationship between children being obese or overweight and their parents BMI status. In 2001-2002, children with both parents obese or overweight were more than twice as likely than other children to be obese or overweight themselves (19.8%), compared with children with one parent obese or overweight (8.4%), and children with no parents obese or overweight (6.7%). It is interesting to note that there was no significant difference between children's obesity prevalence in households where one parent was obese and households where neither parent was obese (Figure 3.5).

Figure 3.5 Obesity prevalence among children, by parental BMI status 2001-2002



Source: Obesity among children under 11. The Information Centre and The Department of Health Copyright © 2006, Re-used with the permission of the Department of Health

The future

Information from the DH report, Forecasting Obesity to 2010 estimates that 19% of boys and 22% of girls aged 2 to 15 will be obese by 2010, compared with 17% and 16% respectively in 2003. The proportion of children likely to be overweight in 2010 is similar to the estimate in 2003. (Table 3.8)

In order to assist with monitoring progress against the Government's PSA target at regional and local level, annual measurement of height and weight among primary school children in Reception Year and Year 6 was introduced in 2005-06. This will complement tracking at national level through the Health Survey for England and aims to provide reliable and comprehensive data at local level on obesity in children, which will also be useful in informing planning and the targeting of resources to tackle obesity. The first report is due to be published in December 2006.

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Table 3.1 Overweight and obesity prevalence among children, by year and gender, 1995 to 2005

England													Percentages		
	1995	1996	1997	1998	1999	2000	2001	2002	2003 (unweighted) ¹	2004 (unweighted) ¹	2005 (unweighted)	2003 (weighted)	2004 (weighted)	2005 (weighted)	
Boys															
2-10															
Overweight	12.9	13.8	13.1	14.6	14.1	13.6	15.6	13.3	14.7	14.2	16.5	14.6	14.6	16.1	
Obese	9.6	11.0	11.1	11.4	16.1	12.2	13.5	15.2	14.9	16.2	16.6	15.1	15.9	16.9	
Overweight including obese	22.5	24.8	24.3	26.0	30.2	25.8	29.1	28.5	29.6	30.4	33.1	29.7	30.5	33.0	
11-15															
Overweight	13.4	14.9	12.7	14.7	14.9	10.0	14.1	14.4	14.4	12.8	14.8	14.5	12.8	15.0	
Obese	13.5	13.8	15.6	16.3	16.9	18.8	18.8	19.8	20.4	23.7	20.5	20.0	24.2	20.4	
Overweight including obese	26.9	28.6	28.3	30.9	31.8	28.9	32.9	34.2	34.8	36.4	35.4	34.5	37.0	35.3	
2-15															
Overweight	13.1	14.1	13.0	14.6	14.4	12.4	15.0	13.7	14.6	13.7	15.9	14.6	13.9	15.7	
Obese	10.9	11.9	12.7	13.0	16.4	14.5	15.5	16.9	17.0	18.9	18.0	17.0	19.2	18.3	
Overweight including obese	24.0	26.1	25.7	27.6	30.8	26.8	30.5	30.6	31.6	32.5	33.9	31.6	33.0	33.9	
Girls															
2-10															
Overweight	12.6	11.0	12.0	12.5	13.5	11.6	14.0	13.1	13.4	14.2	12.2	13.4	14.8	12.2	
Obese	10.3	10.2	10.7	11.8	13.0	11.8	12.7	15.8	12.5	11.9	16.7	12.4	12.8	16.8	
Overweight including obese	22.9	21.2	22.6	24.3	26.5	23.3	26.7	28.9	25.9	26.1	28.9	25.8	27.7	29.0	
11-15															
Overweight	13.9	13.5	15.4	15.7	13.7	14.4	17.5	15.1	16.0	19.4	14.0	16.4	19.3	14.1	
Obese	15.4	15.0	16.2	17.5	15.2	18.1	17.7	19.2	21.9	26.2	20.6	22.1	26.7	20.8	
Overweight including obese	29.3	28.5	31.6	33.2	28.9	32.6	35.2	34.3	37.9	45.6	34.6	38.5	46.0	34.9	
2-15															
Overweight	13.1	11.8	13.1	13.6	13.5	12.7	15.2	13.9	14.4	16.3	12.8	14.6	16.6	12.9	
Obese	12.0	11.8	12.4	13.8	13.7	14.2	14.5	17.1	16.1	17.8	18.1	16.1	18.5	18.3	
Overweight including obese	25.0	23.6	25.5	27.4	27.3	26.8	29.7	30.9	30.5	34.1	31.0	30.7	35.1	31.2	
Bases (weighted)															
Boys															
2-10	1,261	1,418	2,007	1,336	633	570	1,035	2,364	876	416	695	878	5,368	664	
11-15	658	714	1,056	645	343	306	618	1,381	533	230	382	574	3,466	438	
2-15	1,918	2,132	3,063	1,981	977	877	1,653	3,745	1,410	645	1,077	1,452	8,833	1,102	
Girls															
2-10	1,266	1,365	2,082	1,216	628	523	1,094	2,290	897	343	724	858	4,901	674	
11-15	635	649	987	656	322	318	605	1,346	547	236	411	535	3,328	417	
2-15	1,900,996	2,014	3,069,004	1,872	950	841	1,699	3,636	1,444	579	1,135	1,393	8,228	1,091	

1. From 2003 data were also weighted for non response. Data weighted for child selection only are provided for consistency with previous years.

Source:

Health Survey for England 2005 - updating of trend tables to include 2005 data. The Information Centre

Table 3.2 Overweight and obesity prevalence among children, by age, 2002-2004¹

England	Percentages
	2002-2004
Aged 2-3	
Obese	11.6
Overweight including obese	25.2
Aged 4-5	
Obese	12.8
Overweight including obese	27.2
Aged 6-7	
Obese	13.5
Overweight including obese	26.7
Aged 8-10	
Obese	18.7
Overweight including obese	31.8
Aged 11-12	
Obese	22.0
Overweight including obese	37.6
Aged 13-15	
Obese	19.5
Overweight including obese	34.1
<i>Bases (unweighted)</i>	
<i>Aged 2-3</i>	<i>1,130</i>
<i>Aged 4-5</i>	<i>1,410</i>
<i>Aged 6-7</i>	<i>1,559</i>
<i>Aged 8-10</i>	<i>2,360</i>
<i>Aged 11-12</i>	<i>1,616</i>
<i>Aged 13-15</i>	<i>2,361</i>
<i>Bases (weighted)</i>	
<i>Aged 2-3</i>	<i>1,232</i>
<i>Aged 4-5</i>	<i>1,552</i>
<i>Aged 6-7</i>	<i>1,757</i>
<i>Aged 8-10</i>	<i>2,645</i>
<i>Aged 11-12</i>	<i>1,767</i>
<i>Aged 13-15</i>	<i>2,505</i>

1. Data are aggregated over the three years, 2002, 2003 and 2004 to achieve a sufficiently large sample for analyse at this level

Source:

Health Survey for England 2002. The Department of Health
Health Survey for England 2003. The Department of Health
Health Survey for England 2004. The Information Centre
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Table 3.3 Prevalence of obesity among children by Index of Multiple Deprivation (IMD) and age, 2002-2004¹

England	Percentages				
	1 (least deprived)	2	3	4	5 (most deprived)
Aged 2-10	12.4	15.7	14.3	14.2	17.0
Aged 11-15	16.2	19.6	21.7	20.6	23.4
All aged 2-15	13.8	17.2	17.0	16.7	19.3
<i>Bases (unweighted)</i>					
Aged 2-10	1,148	1,106	1,187	1,317	1,701
Aged 11-15	750	725	673	863	966
All aged 2-15	1,898	1,831	1,860	2,180	2,667
<i>Bases (weighted)</i>					
Aged 2-10	1,236	1,205	1,289	1,483	1,973
Aged 11-15	781	757	713	933	1,088
All aged 2-15	2,018	1,962	2,002	2,416	3,061

1. Data are aggregated over the three years, 2002, 2003 and 2004 to achieve a sufficiently large sample for analyse at this level

Source:

Health Survey for England 2002. The Department of Health
 Health Survey for England 2003. The Department of Health
 Health Survey for England 2004. The Information Centre

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Table 3.4 Prevalence of obesity among children by NS-SEC of household reference person and age, 2002-2004¹

England	Percentages		
	Managerial and professional	Intermediate	Routine and manual
Aged 2-10	13.1	15.6	16.5
Aged 11-15	17.3	21.5	22.3
All aged 2-15	14.6	17.8	18.7
<i>Bases (unweighted)</i>			
Aged 2-10	2,618	1,215	2,398
Aged 11-15	1,531	790	1,542
All aged 2-15	4,149	2,005	3,940
<i>Bases (weighted)</i>			
Aged 2-10	2,844	1,354	2,710
Aged 11-15	1,602	845	1,679
All aged 2-15	4,446	2,199	4,390

1. Data are aggregated over the three years, 2002, 2003 and 2004 to achieve a sufficiently large sample for analyse at this level

Source:

Health Survey for England 2002. The Department of Health

Health Survey for England 2003. The Department of Health

Health Survey for England 2004. The Information Centre

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Table 3.5 Prevalence of obesity among children by Government Office Region (GOR) and age, 2002-2004¹

England										Percentages
	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East England	London	South East	South West	
Aged 2-10	16.4	14.4	13.6	14.8	17.4	13.4	18.8	13.9	12.7	
Aged 11-15	24.0	20.8	20.0	20.2	24.3	18.7	22.5	18.1	18.3	
All aged 2-15	19.5	16.8	15.8	16.9	19.9	15.3	20.1	15.4	14.8	
<i>Bases (unweighted)</i>										
Aged 2-10	372	891	700	588	682	743	791	1,041	651	
Aged 11-15	250	584	406	366	417	436	470	636	412	
All aged 2-15	622	1,475	1,106	954	1,099	1,179	1,261	1,677	1,063	
<i>Bases (weighted)</i>										
Aged 2-10	399	1,021	780	641	768	808	881	1,162	725	
Aged 11-15	273	634	424	395	447	462	517	682	438	
All aged 2-15	673	1,655	1,204	1,036	1,216	1,271	1,398	1,844	1,163	

1. Data are aggregated over the three years, 2002, 2003 and 2004 to achieve a sufficiently large sample for analyse at this level

Source:

Health Survey for England 2002. The Department of Health
 Health Survey for England 2003. The Department of Health
 Health Survey for England 2004. The Information Centre

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Table 3.6 Obesity prevalence among children by physical activity status¹ and age, 2002 and 2004²

England	Percentages		
	High activity	Medium activity	Low activity
Aged 2-10	14.8	15.9	17.0
Aged 11-15	19.7	19.3	22.2
All aged 2-15	16.5	17.2	19.2
<i>Bases (unweighted)</i>			
Aged 2-10	3,198	684	806
Aged 11-15	1,719	458	661
All aged 2-15	4,917	1,142	1,467
<i>Bases (weighted)</i>			
Aged 2-10	3,654	790	926
Aged 11-15	1,919	514	719
All aged 2-15	5,573	1,304	1,645

1. High = 60 minutes or more on all 7 days a week; medium = 30 to 59 minutes on all 7 days; low = lower level of activity

2. Data are combined 2002 and 2004 to achieve a sufficiently large sample for analyse at this level. Questions on physical activity among children were not asked in 2003

Source:

Health Survey for England 2002. The Department of Health

Health Survey for England 2004. The Information Centre

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Table 3.7 Obesity prevalence among children, by parental BMI status¹ 2001-2002²

England	Percentages		
	With no obese or overweight parent	With one obese or overweight parent	Both parents obese or overweight
Obese	6.7	8.4	19.8
<i>Bases (weighted)</i>			
<i>Aged 2-10</i>	292	778	710
<i>Bases (unweighted)</i>			
<i>Aged 2-10</i>	252	685	612

1. Lone parent households were excluded from this analysis. Therefore these categories are mutually exclusive

2. Data are aggregated for 2001 and 2002 to achieve a sufficiently large sample for analysis at this level

Source:

Obesity among children under 11. The Information Centre and The Department of Health

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Table 3.8 Prevalence and number¹ of children overweight and obese by age and gender, 2003 and 2010

England	Numbers/Percentages							
	Total ²		2 to 5		6 to 10		11 to 15	
Boys								
Obesity								
2003 ³	17	746,662	12	144,195	17	266,690	20	335,777
2010	19	792,321	13	159,497	19	277,657	31	479,519
Overweight								
2003 ³	15	643,513	13	156,669	15	244,021	14	242,822
2010	14	610,799	15	173,127	14	215,147	14	221,859
Girls								
Obesity								
2003 ³	16	675,983	10	116,261	14	208,041	22	351,682
2010	22	910,630	10	118,172	24	342,449	27	396,325
Overweight								
2003 ³	15	613,048	12	140,880	14	211,311	16	260,856
2010	14	586,338	13	146,924	14	197,401	16	241,566
<i>Bases (unweighted)⁴</i>								
<i>Boys</i>								
2003	1,417	4,442.2	332	1,183.6	532	1,581.8	553	1,676.8
2010	-	4,231.5	-	1,186.8	-	1,490.4	-	1,554.3
<i>Girls</i>								
2003	1,416	4,228.0	336	1,129.3	533	1,506.8	547	1,591.9
2010	-	4,048.7	-	1,132.3	-	1,427.4	-	1,489.0
<i>Bases (weighted)</i>								
<i>Boys</i>								
2003	1,452	-	330	-	549	-	574	-
<i>Girls</i>								
2003	1,393	-	341	-	516	-	535	-

1. Numbers represent the estimated number of people within each age group who are either overweight or obese

2. For 2010 data, the total number of people either overweight or obese may differ from the cumulative total of the age groups presented. This is due to imprecision within the forecast modelling

3. 2003 prevalence estimates presented are based on data weighted for non-response. The weighted bases for these estimates are also presented

4. Population bases (numbers) are presented in thousands. For 2003, data from the 2003 mid population estimates have been used. For 2010, forecasted mid-year population estimates for 2010

Source:

Forecasting Obesity to 2010. National Centre for Social Research and Department of Epidemiology and Public Health at the Royal Free and University College Medical School

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4 Physical activity among adults

Background

The health benefits of a physically active lifestyle are well documented and there is a large amount of evidence to suggest that regular activity is related to reduced incidence of many chronic conditions, to be discussed in Chapter 7 (Health outcomes). Physical activity contributes to a wide range of health benefits and any regular physical activity can improve health outcomes irrespective of whether individuals achieve weight loss. Current physical activity recommendations for adults are, that they should achieve a total of at least 30 minutes of at least moderate physical activity, on five or more days a week. Further research suggests that the 30 minutes of physical activity necessary for health benefit can be built up in bouts of 10 minutes or more¹. Moderate activity can be achieved through walking, cycling, gardening and housework, as well as various sports and exercise (see Appendix B).

Supporting information on the monitoring of progress towards the physical activity guidelines are available from a number of sources.

The Health Survey for England (HSE) reports on adults' physical activity in the four weeks prior to interview by examining overall participation and frequency of participation in activities that lasted at least 30 minutes and the type of activity. The HSE is used as the primary source to measure progress towards achieving physical activity guidelines. Overall trend data in this chapter uses HSE 2004². For further breakdowns, HSE 2003³ is used due to the bigger sample size in that year. Data relating to ethnic minority groups uses data from HSE 2004⁴ due to the ethnic minority group sample boost in that year.

The National Travel Survey (NTS) 2005⁵ provides information on personal travel in Great Britain. The NTS, published by the

Department for Transport (DFT), is a continuous household survey that began in July 1988. During 2005, over 8,400 households provided details of their travel by completing travel diaries over a period of a week.

The Time Use Survey 2005⁶, part of the National Statistics Omnibus Survey, describes how people spend their time in the UK. The make up of activities during an average day can be broken down by various key demographic variables.

The Taking Part Survey (TPS)⁷ is a continuous national survey of those living in a representative cross-section of private households in England. The survey, commissioned by the Department for Culture, Media and Sport (DCMS) and its partner Non-Departmental Public Bodies, expects to achieve an annual sample size of around 28,000 adults aged 16 and over. The survey began in mid-July 2005, and provisional figures from the first three, six and nine months of the survey are available. Results from the survey include provisional estimates on the prevalence of participation in sport and also reasons given for engagement, future engagement and non-engagement in sporting activities. The final Public Service Agreement target 3 (PSA3) baselines, generated using data collected from interviews issued during the first full survey year (mid-July 2005 to mid-July 2006), were published on 14th December 2006.

Meeting physical activity guidelines

Information on whether current physical activity guidelines for adults are being met are obtained from the HSE. The HSE reports on trends in physical activity from 1997, 1998, 2003 and 2004. The questionnaires used in the 2003 and 2004 survey were shorter than the surveys in 1997 and 1998, therefore results from these two years have

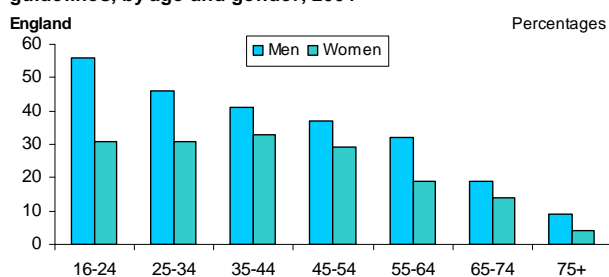
been recalculated to allow for comparisons to be made. For both men and women, the proportion achieving physical activity recommendations has increased overall, from 32% in 1997 to 35% in 2004 for men, and from 21% to 24% for women (Table 4.1).

In 2004, 35% of men and 24% of women in England were achieving the recommended physical activity guidelines (undertaking a minimum of 30 minutes of at least moderate intensity activity at least five times a week). Moderate intensity activities have an energy cost of at least 5 kcal/min but less than 7.5 kcal/min and include heavy housework or gardening and sports which make the individual breathe heavily or become sweaty.

For both men and women in 2004, the proportion meeting the guidelines decreased steady with age, from 56% of those aged 16 to 24, to 9% for those aged 75 and over among men. The proportion of women meeting the guidelines remained stable for women aged 16 to 54 (29-33%) and decreased thereafter to 4% among women 75 and over. Men aged 16-24 are the group most likely to meet physical activity targets and are also the least likely group to be obese, as reported in Chapter 2.

(Figure 4.1).

Figure 4.1 Adults achieving the recommended physical activity guidelines, by age and gender, 2004



Source: Health Survey for England - updating of trend tables to include 2005 data. The Information Centre

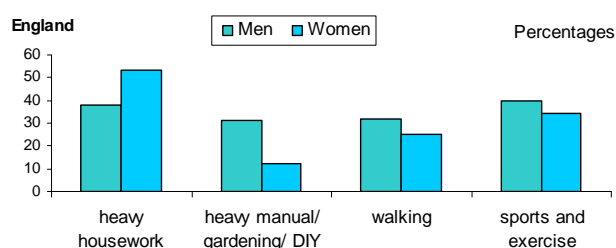
Participation in different activities

The HSE 2003 reports on participation and frequency of participation in various activities such as heavy housework, heavy manual/gardening/ DIY, walking, and sports and

exercise that lasted at least 30 minutes (15 minutes for sports and exercise).

Table 4.2 shows the participation in the last four weeks in various activities. The activity men were most likely to report engaging in was sports and exercise (40%), and heavy housework (38%). For women, the most common activity was heavy housework (53%) and sports and exercise (34%), (Figure 4.2). Male participation in walking and sports and exercise, and female participation in sports and exercise declined with age. Among women, the pattern of walking was more stable amongst most age groups, although it dropped for those aged 65 and over. The proportion who had not engaged in any moderate physical activity in the four weeks prior to interview was 21% for men and 26% for women.

Figure 4.2 Participation in different activities, by gender, 2003



Source: Health Survey for England 2003. The Department of Health
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Socio-economic factors

Some relationships exist between participation in physical activity and household income as shown in Table 4.3. Equivalised household income is a measure of household income that takes account of the number of persons in the household. Respondents who were in higher income quintiles were more likely to have participated in at least one occasion of physical activity of at least moderate intensity in the four weeks prior to interview. Between 87% and 88% of men, and 83% and 84% of women in the two highest income quintiles had participated in such activity. For those in the lowest two income quintiles the participation figures were

between 66% and 71% for men and between 67% and 69% for women.

When focusing on specific activities, further patterns emerged. Among both men and women, participation in sports and exercise decreased with decreasing household income. For example, over half of men (55%) in the highest income quintile took part in sports and exercise compared with 28% in the lowest income quintile. The equivalent figures for women were 50% and 22% respectively (Table 4.3). Similar patterns also emerge when looking at physical activity by NS-SEC category.

As well as providing information on different activities (as described above), the HSE also provides summary measures of physical activity levels relating to current physical activity guidelines. This measure is divided between high, medium and low activity. High activity levels are defined as 20 or more occasions of moderate or vigorous activity of at least 30 minutes duration in the last four weeks (at least five days a week). Medium activity is defined as 4 to 19 occasions of moderate or vigorous of at least 30 minutes' duration in the last four weeks (one to five days a week). Low activity is defined as up to three occasions of moderate or vigorous activity of at least 30 minutes' duration in the last four weeks (less than once a week).

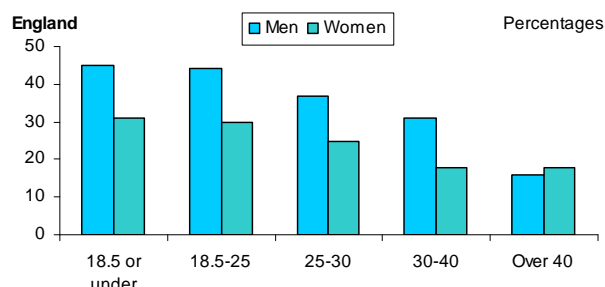
When focusing on summary activity levels by various socio- economic factors (as opposed to participation in different activities as described above) no apparent pattern is visible between the various groups (no table).

Physical activity and body mass index

Physical activity levels were strongly related to body mass index (BMI) status. The proportion of men with high physical activity levels fell from 44% among those who had a desirable BMI, to 31% among those who were obese (BMI over 30 to 40) and 16% among those who were morbidly obese (BMI over 40). The proportion of women with high

activity levels fell from 30% among those who had a desirable BMI, to 18% among those who were obese and morbidly obese (Figure 4.3 and Table 4.4).

Figure 4.3 Adults achieving the recommended physical activity guidelines, by BMI status and gender, 2003



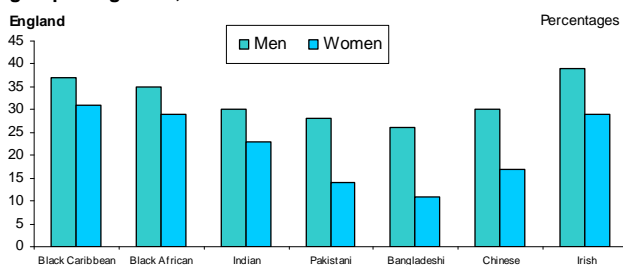
Source: Health Survey for England 2003. The Department of Health Copyright © 2006. Re-used with the permission of the Department of Health

Physical activity among ethnic groups

Within minority ethnic groups, Irish (39%) and Black Caribbean (37%) men reported the highest proportion meeting the current physical activity recommendations, similar to the proportion of men in the general population (37%). Women among Black Caribbean, Black African and Irish groups reported the highest rates meeting current physical activity guidelines (31%, 29% and 29% respectively), compared with 25% of women in the general population. Only 11% of Bangladeshi and 14% of Pakistani women did the recommended amounts of physical activity in the four weeks prior to interview.

Although Black Caribbean and Irish men report higher levels of activity compared to other groups, they are also the two groups most likely to be obese. Among women, Bangladeshi women reported low levels of physical activity but are among the groups least likely to be obese (Table 4.5 and Figure 4.4).

Figure 4.4 Adults achieving the physical activity guidelines, by ethnic group and gender, 2004



Source: Health Survey for England 2004. The Information Centre

When focusing on particular activities, the proportion of men participating in any heavy housework ranged from 19% among Bangladeshi and 20% among Pakistani men, to 42% in Black Caribbean men. For women, the rates ranged from 32% of Bangladeshi women, to 50% of Black Caribbean women to 63% of Irish women. Participation in sports and exercise among women was lower for Bangladeshi (12%), Pakistani (16%), Indian (27%) and Black African women (28%) than the general population (34%) (Table 4.6).

Early trends in physical activity

An earlier survey published in 1992 (the Allied Dunbar National Fitness Survey 1990⁸) measured physical activity patterns and fitness levels of adults in England, achieving a sample size of over 4,000 people. Similar to the HSE, the survey measured levels of participation in sport and active recreation, physical activity in housework, DIY and gardening in the previous four weeks. Activities were classified as either light, moderate or of vigorous intensity. A six point activity level scale was then devised using information about duration, frequency and intensity. Physical activity targets were defined for different age groups based on varying levels of intensity and activity, which lasted 20 minutes or more.

The main findings from the survey reported that 7 out of 10 men and 8 out of 10 women fell below their age appropriate activity level necessary to achieve a health benefit.

Furthermore, about 1 in 6 people reported having done no activities for 20 minutes or more at a moderate or vigorous level in the previous four weeks.

The National Fitness Survey also reports declining activity levels with increasing age, particularly for men, similar to patterns in the HSE 2003. Men in the 16 to 24 age group reported the highest level of activity in the National Fitness Survey, similar to current trends in HSE. Some further similarities between the two surveys can be seen when focusing on patterns of activity between men and women. Men are generally more likely overall to participate in physical activity of higher intensity than women (no table).

Focus on travel

It is widely accepted that active travel such as cycling or walking can contribute to being physically active. The NTS 2005 reports that in Great Britain, the average distance people travelled (by all modes) annually has increased by 3% from 6,981 miles in 1995/97 to just over 7,208 miles in 2005. (Table 4.7).

As the average time and distance travelling by all modes of travel has been increasing over the last ten years, the average distance travelled by car has remained unchanged. Nevertheless, the proportion of households with access to two or more cars has been increasing. The proportion of households with two cars or more rose from 17% in 1985/86 to 25% in 1995/97 and to 32% in 2005. There are now more households with at least two cars than households with no car (Table 4.8).

Walking and cycling

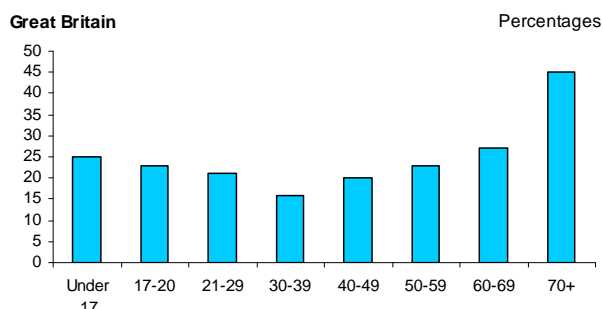
The NTS reports that the overall decline in the total trips per person per year is largely accountable to the decline in walking trips, which have fallen from 292 trips on foot per year in 1995/97 to 245 trips in 2005 (a decrease of 16%). The time spent walking has also decreased by 9% between 1995/97

to 2005 from 73 hours to 67 hours respectively (Table 4.9). Overall, women are more likely to make trips on foot than men (25% of women compared with 22% of men). Children aged 17 and under, reported the highest proportion of trips made on foot (33%), with adults aged 40 to 49 reporting the lowest proportion (18%) (Table 4.10).

Respondents to the NTS were also asked how often they took walks of 20 minutes or more without stopping. Unlike trips recorded in the travel diary, this included walks which were not on the public highway or in parks. In 2005, 36% of respondents said they made walks of 20 minutes or more at least 3 times a week and a further 21% reported they did so at least once or twice a week. However, almost a quarter (24%) of all people make walks of 20 minutes or more less than once a year or never (Table 4.11).

Those over 70 were the least likely to walk for more than 20 minutes. Of this group, 26% made these trips three or more times a week, while 45% made such walks less than once a year or never (Figure 4.5).

Figure 4.5 Percentage of people who walk (20 minutes or more) less than once a year or never, 2005



Source: Transport Statistics Bulletin, National Travel Survey: 2005. The Department for Transport
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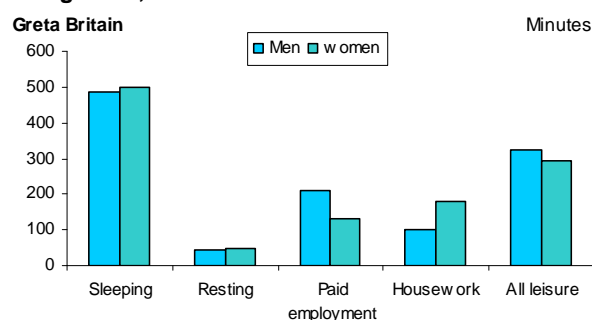
The distance travelled by bicycle in Great Britain has fallen by 16%, from 43 miles per person per year in 1995/97 to 36 miles in 2005 (Table 4.7). The number of trips have also declined, from 18 trips to 14 trips per person per year during the same period, a fall of 22% (Table 4.9). The use of a bicycle was most common among men aged 17 to

20 in 2005, but still only accounted for 3% of all trips among this group. Travel by bicycle gradually declines with age.

Overall time use

Having considered participation in physical activity and how people travel, it is informative to look at how people spend their time overall. The Time Use Survey 2005 collected time spent on thirty different activities. Apart from sleeping and working in a main job, which accounted for approximately 11 hours a day, most time was spent watching TV and videos/ DVDs or listening to music; just over two and a half hours a day (Figure 4.6 and Table 4.12).

Figure 4.6 Time spent on different activities by age and gender, 2005



Source: The Time Use Survey, 2005. The Office for National Statistics
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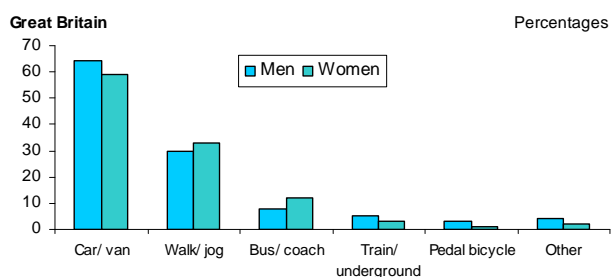
Time use in 2000 appears broadly similar to 2005. In 2005 there was less time on average spent eating and drinking, washing and dressing, doing housework, reading and participating in sport and more time spent sleeping and resting, looking after children, socialising and participating in hobbies and games.

The youngest age group (16 to 24) spent the most time sleeping, but the oldest group spent the most time resting (65 and over). Nearly half of men (46%) and a third of women (33%) participated in paid work on their diary day. Both men and women in the 25 to 44 age group spend more time in paid work than any other group. Older men and women spent the most time watching TV or listening to the radio than any other group.

Women spend over an hour more on average a day doing housework than men. Focusing on sport and other outdoor activities, men aged between 16 to 24 spent more time than any other group participating in such activities, approximately half an hour (Table 4.12 and Table 4.13)

In addition to the NTS, the TUS also collects information on travel, both the reason for it and the means of transport. Three fifths of time spent travelling (52 of the 87 minutes per day) was carried out by car or van, and a fifth (17 minutes) was spent walking or jogging (Table 4.14 and Figure 4.7)

Figure 4.7 Rates of participation by mode of travel and gender, 2005



Source: Time Use Survey, 2005. The Office for National Statistics
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Active sport

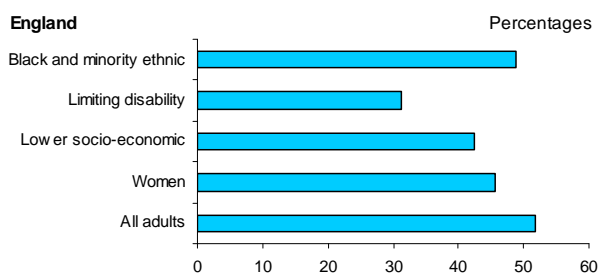
Looking now at participation in sport, the Taking Part Survey (TPS) is the primary data source used to monitor the Public Service Agreement target 3 (PSA3). The aim of this target is, by 2008, to increase the take-up of cultural and sporting opportunities by adults and young people aged 16 and above from priority groups. Two of the six indicators which will be used to measure this target are; increasing the number who participate in active sports at least twelve times a year by 3%, and increasing the number who engage in at least 30 minutes of moderate intensity level sport, at least three times a week by 3%, by 2008.

Provisional results for the period mid-July 2005 to mid-April 2006 from TPS reports on the prevalence of participation in active and moderate intensity sport, which feeds into

progress on the DCMS PSA target. 'Active sport' is defined in this report and the PSA target as all forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and well-being, forming of social relationships or obtaining results in competition at all levels. It includes sport activities such as swimming, recreational cycling, jogging, cricket and boxing, but excludes walking (see Appendix B for full list of activities). The definition of 'moderate intensity level sport' includes all activities listed under active sports, except snooker, pool, billiards, darts, archery, angling or fishing, shorting and yoga, but does include recreational walking. To count as moderate intensity level sport, the effort put into the sport needs to be enough to have raised a person's breathing rate and walking needs to be done at a brisk or fast pace.

The results from data collected during the first nine months of TPS show that 52% of all adults participated in at least one active sport during the past 4 weeks. Results focusing on priority groups also show that 49% of adults from black and minority ethnic groups, 31% of adults with a limiting disability, 42% of adults from lower socio-economic groups and 46% of women participated in at least one active sport during the past four weeks (Figure 4.8).

Figure 4.8 Participation in active sport by priority group during past 4 weeks, 2005/06



Source: Taking Part Survey. 'Taking Part: The National Survey of Culture, Leisure and Sport. The Department for Culture, Media and Sport
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Of all adults, 38% had participated on at least one occasion per week in a moderate intensity sport. Again focusing upon priority

groups, 17% of adults from black and minority ethnic groups, 9% of adults with a limiting disability, 14% of adults from lower socio-economic groups and 17% of women participated in moderate intensity level sport for at least 30 minutes on at least three separate occasions in the past week, compared to 19% of all adults (Table 4.15).

Reasons for engagement and non-engagement

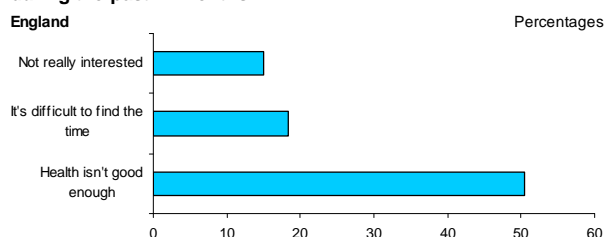
An additional report containing provisional headline findings from the first six months of the Taking Part Survey provides information not only on the levels of engagement in sporting activities, but also the reasons for engagement and non-engagement in the twelve months prior to interview. For the purpose of this particular report, participation in active sports is defined as participating on at least one occasion during the past twelve months. The actual activities covered are the same as listed in the previous section.

The results showed that, 67% of all adults participated in at least one type of active sport during the past twelve months. Of those who participated in at least one type of active sport, enjoyment and keeping fit were the main reasons given for participation (39% and 30% respectively) (Table 4.16).

Of those people who reported taking part in active sports at least once in the past twelve months, 48% reported that they would participate more frequently if they were less busy. Cheaper admission prices were reported by 18% of people as a factor which would encourage more frequent participation (Table 4.17).

The main reasons for not participating in active sports during the last year, were that health isn't good enough (50%) followed by difficulty finding the time (18%) and not being interested (15%) (Figure 4.9 and Table 4.18).

Figure 4.9 Main reasons for non-participation in active sports during the past 12 months



Source: Taking Part Survey. Taking Part: The National Survey of Culture, Leisure and Sport. The Department for Culture, Media and Sport
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The main reason for non-participation varies between different groups of people. For example, those aged 16 to 29 were most likely to give 'difficulty in finding the time' as the main reason whereas those aged 60 and above gave 'health isn't good enough'. Perhaps more interestingly, people from White ethnic backgrounds gave 'health isn't good enough' as the main reason for not participating in active sports, compared to people from Black and minority ethnic groups stating 'difficulty in finding time' (Table 4.19).

Active People Survey

The Active People Survey (APS) is a new survey which has been commissioned by Sport England to measure levels of participation in sport and active recreation, which includes walking and cycling for recreation in addition to more traditional formal and informal sports. The survey commenced in October 2005 and was completed in October 2006 with a total of 364,501 completed interviews. Headline results were published in December 2006⁹. The survey will be representative at a local level and aggregated up to County Sport Partnership level. The survey of each District, Unitary and Metropolitan Authority will be carried out over a full year with the sample of 1,000 interviews for most Local Authorities evenly divided over the twelve months of the year to account for seasonality factors. This data will provide very useful local level data about participation in sports for adults aged 16 and over living in

England. No data from the APS are presented in this chapter.

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Table 4.1 Proportion achieving the physical activity guidelines, by age and gender, 1997, 1998, 2003 and 2004

England								Percentages	
	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75+	
Men									
1997	32	49	41	37	32	23	12	7	
1998	34	53	45	41	34	30	14	6	
2003 (unweighted)	35	53	44	41	37	32	17	8	
2004 (unweighted)	35	56	46	41	37	32	19	9	
2003 (weighted)	36	52	44	41	38	32	17	8	
2004 (weighted)	37	56	46	41	37	32	18	8	
Women									
1997	21	26	26	29	24	19	8	5	
1998	21	28	28	28	25	18	9	3	
2003 (unweighted)	24	30	29	30	30	23	13	3	
2004 (unweighted)	24	31	31	33	29	19	14	4	
2003 (weighted)	24	30	29	30	31	23	13	3	
2004 (weighted)	25	32	30	32	30	20	14	4	
Bases									
<i>Men 1997</i>	3,898	492	739	740	694	535	455	243	
<i>Men 1998</i>	7,193	875	1,338	1,305	1,289	987	837	562	
<i>Men 2003 (unweighted)</i>	6,581	744	1,024	1,260	1,098	1,097	807	551	
<i>Men 2004 (unweighted)</i>	2,873	291	446	535	439	508	378	276	
<i>Men 2003 (weighted)</i>	7,177	1,044	1,272	1,412	1,180	1,037	731	501	
<i>Men 2004 (weighted)</i>	46,089	6,860	7,874	9,160	7,505	6,758	4,656	3,276	
<i>Women 1997</i>	4,684	560	916	833	806	585	545	439	
<i>Women 1998</i>	8,715	1,006	1,630	1,573	1,484	1,148	967	907	
<i>Women 2003 (unweighted)</i>	8,210	886	1,279	1,615	1,278	1,304	948	900	
<i>Women 2004 (unweighted)</i>	3,818	364	550	746	626	621	482	429	
<i>Women 2003 (weighted)</i>	7,611	1,029	1,279	1,437	1,199	1,071	813	782	
<i>Women 2004 (weighted)</i>	48,643	6,683	7,966	9,241	7,654	6,955	5,152	4,991	

1. For data comparability across HSE years, only activity sessions that lasted at least 30 minutes were included
2. A minimum of five days a week of 30 minutes or more of moderate-intensity activity

Source:

Health Survey for England - updating of trend tables to include 2004 data. The Information Centre, 2005

Table 4.2 Participation in moderate intensity activities¹, by age and gender, 2003

England	Percentages							
	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75+
Men								
Heavy housework								
None	62	71	57	57	59	64	65	76
Any	38	29	43	43	41	36	35	24
Mean number of days ^c	1.7	1.1	1.9	1.8	2.0	1.7	1.7	1.1
Heavy manual/gardening/DIY								
None	69	81	71	62	63	65	68	85
Any	31	19	29	38	37	35	32	15
Mean number of days ^c	1.9	1.1	1.7	2.6	2.2	2.2	2.1	1.0
Walking³								
None	68	55	60	66	66	75	82	92
Any	32	45	40	34	34	25	18	8
Mean number of days ^c	3.3	5.1	3.7	3.3	3.3	3.0	2.3	1.1
Sports and exercise								
None	60	29	44	54	67	78	85	93
Any	40	71	56	46	33	22	15	7
Mean number of days ^c	4.4	9.3	6.0	4.8	3.2	2.1	1.5	0.7
Any physical activity								
None	21	8	11	14	20	28	37	61
Any	79	92	89	86	80	72	63	39
Mean number of days ^c	12.6	16.9	15.2	14.1	12.7	10.9	7.3	3.8
Women								
Heavy housework								
None	47	58	38	35	40	43	52	79
Any	53	42	62	65	60	57	48	21
Mean number of days ^c	3.2	2.1	3.5	4.2	4.0	3.6	2.7	1.0
Heavy manual/gardening/DIY								
None	88	95	88	84	85	84	88	96
Any	12	5	12	16	15	16	12	4
Mean number of days ^c	0.5	0.3	0.4	0.7	0.6	0.7	0.7	0.2
Walking³								
None	75	69	68	70	72	77	85	95
Any	25	31	32	30	28	23	15	5
Mean number of days ^c	2.8	3.3	3.3	3.4	3.3	2.8	1.9	0.6
Sports and exercise								
None	66	47	52	58	69	75	84	95
Any	34	53	48	42	31	25	16	5
Mean number of days ^c	3.0	5.1	4.2	3.7	2.8	1.9	1.3	0.4
Any physical activity								
None	26	17	14	13	21	26	39	71
Any	74	83	86	87	79	74	61	29
Mean number of days ^c	9.9	11.4	12.0	12.1	11.5	9.5	6.2	2.0
Bases (unweighted) ⁴								
<i>Men</i>	6,602	746	1,025	1,263	1,101	1,103	807	557
<i>Women</i>	8,234	890	1,285	1,618	1,279	1,307	952	903
Bases (weighted)								
<i>Men</i>	7,202	1,047	1,274	1,416	1,185	1,043	731	507
<i>Women</i>	7,634	1,034	1,285	1,440	1,200	1,074	816	785

1. For at least 30 continuous minutes. Participation in the last four weeks

2. Mean is based on all informants including those who reported no participation

3. Only walking of brisk or fast pace is included

4. Bases vary across physical activity types variables: those shown are for the overall sample

Source: Health Survey for England, 2003. The Department of Health

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Table 4.3 Participation in different activities, by equivalised household income quintile and gender 2003^{1,2}

England	Percentages				
	Highest	2nd	3rd	4th	Lowest
Men					
Heavy housework					
% who participated	45	42	41	34	29
Mean number of days	1.6	1.7	1.8	1.6	1.8
Heavy manual/gardening/DIY					
% who participated	37	37	32	28	22
Mean number of days	2.1	2.3	2.2	1.9	1.3
Walking					
% who participated	43	35	29	26	26
Mean number of days	3.6	3.4	3.2	2.9	3.5
Sports and exercise					
% who participated	55	47	39	31	28
Mean number of days	6.3	4.8	4.0	3.4	3.3
Any physical activities					
% who participated	88	87	81	71	66
Mean number of days	13.5	14.0	13.5	11.5	10.2
Women					
Heavy housework					
% who participated	53	57	56	54	53
Mean number of days	2.5	3.2	3.5	3.5	3.4
Heavy manual/gardening/DIY					
% who participated	14	14	14	13	8
Mean number of days	0.6	0.6	0.6	0.6	0.4
Walking					
% who participated	36	29	23	19	21
Mean number of days	3.6	3.2	2.6	2.2	2.9
Sports and exercise					
% who participated	50	45	31	24	22
Mean number of days	4.8	3.9	2.5	1.9	2.1
Any physical activities					
% who participated	84	83	76	69	67
Mean number of days	11.7	11.2	10.1	8.9	8.6
<i>Bases (unweighted)</i>					
<i>Men</i>	1,277	1,286	1,180	912	962
<i>Women</i>	1,243	1,426	1,547	1,271	1,410
<i>Bases (weighted)</i>					
<i>Men</i>	1,389	1,417	1,277	971	1,031
<i>Women</i>	1,171	1,364	1,422	1,134	1,276

1. For at least 30 continuous minutes

2. Participation in the last four weeks

Source:

Health Survey for England, 2003. The Department of Health

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Table 4.4 Participation in at least moderate intensity activities¹, by body mass index and gender, 2003²

England	Percentages				
	18.5 or under	Over 18.5 to 25	Over 25 to 30	Over 30 to 40	Over 40
Men					
High	45	44	37	31	16
Medium	24	32	33	31	46
Low	31	24	30	38	38
Women					
High	31	30	25	18	18
Medium	31	40	37	35	37
Low	37	30	38	47	45
<i>Bases (unweighted)</i>					
<i>Men</i>	71	1,875	2,651	1,309	60
<i>Women</i>	134	2,930	2,365	1,457	204
<i>Bases (weighted)</i>					
<i>Men</i>	92	2,162	2,817	1,383	65
<i>Women</i>	138	2,782	2,141	1,320	188

1. High = 30 minutes or more on at least 5 days a week; Medium = 30 minutes or more on 1 to 4 days a week; Low = lower levels of activity

2. Participation in the last week

Source:

Health Survey for England, 2003. The Department of Health

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Table 4.5 Summary activity levels, by minority ethnic group and gender, 2004

England	Percentages							
	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish	General population
Men								
Low levels	34	35	44	51	51	38	33	32
High levels	37	35	30	28	26	30	39	37
Women								
Low levels	39	43	45	52	68	47	33	39
High levels	31	29	23	14	11	17	29	25
<i>Bases (unweighted)</i>								
Men	409	386	549	429	408	348	497	2,873
Women	648	467	634	508	477	375	656	3,818
<i>Bases (weighted)</i>								
Men	477	373	901	420	177	151	1,776	46,089
Women	673	472	1,067	499	207	163	2,369	48,643

1. High levels indicate adherence to the physical activity recommendations (30 minutes or more at least moderate activity on at least five days a week). Low levels indicate inactivity defined as less than one 30-minute moderate or vigorous activity session a week

2. The 'medium activity levels' category (30 minutes or more at least moderate activity on one to four days a week) is not presented in this table

Source:

Health Survey for England 2004. The Information Centre

Table 4.6 Participation in at least moderate-intensity physical activity, by minority ethnic group and gender, 2004

England	Percentages							
	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish	General population
Men								
Heavy housework								
Any ¹	42	34	35	20	19	34	38	38
At least once a week ²	22	18	14	7	10	16	20	17
Heavy gardening/DIY/building								
Any ¹	18	9	15	10	5	10	24	29
At least once a week ²	11	3	7	5	3	4	15	16
Walking								
Any ¹	24	27	19	14	17	21	32	32
At least once a week ²	18	25	15	11	16	17	23	25
Sports exercise								
Any ¹	46	43	32	31	26	49	39	41
At least once a week ²	39	35	26	25	22	39	33	33
Any physical activity								
Any ¹	74	75	68	58	54	76	78	79
At least once a week ²	66	65	56	49	49	62	67	68
Women								
Heavy housework								
Any ¹	50	47	48	49	32	42	63	55
At least once a week ²	29	27	29	31	19	26	36	31
Heavy gardening/DIY/building								
Any ¹	10	4	6	4	4	4	9	11
At least once a week ²	4	1	2	1	2	1	2	4
Walking								
Any ¹	24	22	18	12	8	17	33	27
At least once a week ²	18	17	16	9	7	14	28	22
Sports exercise								
Any ¹	36	28	27	16	12	34	38	34
At least once a week ²	27	20	21	13	11	27	29	25
Any physical activity								
Any ¹	73	70	68	60	41	67	81	75
At least once a week ²	61	57	55	48	32	53	67	61
<i>Bases (unweighted)</i>								
Men	477	373	901	420	177	151	1,776	46,089
Women	673	472	1,067	499	207	163	2,369	48,643
<i>Bases (weighted)</i>								
Men	409	386	549	429	408	348	497	2,873
Women	648	467	634	508	477	375	656	3,818

1. Participation for at least 30 minutes in moderate or vigorous activity in the four weeks prior to interview

2. Participation for at least 30 minutes a week on average in moderate or vigorous intensity, i.e. at least four sessions in the four weeks prior to interview

Source:

Health Survey for England, 2004. The Information Centre

Table 4.7 Average distance travelled by mode of travel, 1995/1997 to 2005

Great Britain	Miles/Percentages						% change 1995/97 to 2005
	1995/97	1998/00	2002	2003	2004	2005	
Walk ¹	200	198	198	201	203	197	-1
Bicycle	43	40	36	37	39	36	-16
Private hire bus	106	111	124	135	132	122	15
Car/van driver	3,623	3,725	3,661	3,661	3,674	3,685	2
Car/van passenger	2,082	2,086	2,114	2,097	2,032	2,061	-1
Motorcycle/moped	35	33	35	41	38	35	-
Other private vehicles	28	32	21	28	24	34	21
Bus in London	43	44	56	60	59	67	58
Other local bus	225	218	224	230	219	212	-6
Non-local bus	94	100	59	87	70	75	-21
LT Underground	60	65	81	68	68	67	13
Surface rail	321	401	413	384	433	461	44
Taxi/minicab	46	63	59	55	51	60	30
Other public ²	75	46	55	108	61	97	28
All modes	6,981	7,164	7,135	7,192	7,103	7,208	3
<i>Base (unweighted)</i>							
Individuals	22,861	21,868	16,886	19,467	19,199	19,904	..
Stages ('000s)	510	475	349	397	392	409	..

1. Short walks believed to be under-recorded in 2002 and 2003 compared with other years
2. Includes air, ferries, light rail etc

Source:

Transport Statistics Bulletin, National Travel Survey: 2005, Department for Transport

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Table 4.8 Trend in car ownership, 1985/86 to 2005

Great Britain	Numbers/Percentages						
	No car	One car	Two or more	All households	Cars per household	Cars per adult (17+)	Unweighted sample size (households)
1985/1986	38	45	17	100	0.82	0.42	10,266
1989/1991	33	45	22	100	0.94	0.50	10,752
1992/1994	33	44	23	100	0.96	0.52	10,296
1995/1997 ¹	30	44	25	100	1.00	0.54	10,461
1998/2000	28	44	28	100	1.05	0.57	10,459
2002	27	44	29	100	1.08	0.58	8,849
2003	27	43	31	100	1.10	0.59	9,196
2004	26	44	30	100	1.10	0.59	8,991
2005	25	43	32	100	1.15	0.61	9,453

1. Figures for 1995 onwards are based on weighted data

Source:

Transport Statistics Bulletin, National Travel Survey: 2005, Department for Transport

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Table 4.9 Average trips taken and time spent travelling, 1995/1997 to 2005

Great Britain	Trips per person per year						Total time spent travelling per year (hours)						Numbers	
	1995/97	1998/00	2002	2003	2004	2005	1995/97	1998/00	2002	2003	2004	2005		
	Walk ¹	292	271	244	246	246	245	73	70	68	65	67	67	
Bicycle	18	17	16	15	16	14	6	5	5	5	5	5		
Car/van driver	425	434	435	425	422	435	141	146	147	148	148	151		
Car/van passenger	239	238	239	232	229	236	82	83	85	84	83	85		
Motorcycle/moped	4	4	4	4	3	4	1	1	1	2	1	1		
Other private vehicles	9	8	9	8	8	9	6	6	6	7	7	7		
Bus in London	13	13	15	15	16	16	7	8	9	10	10	10		
Other local bus	53	50	49	51	48	46	26	25	26	26	26	24		
Non-local bus	2	2	1	1	1	1	3	4	2	3	2	3		
LT Underground	7	8	9	8	7	7	6	6	8	7	6	6		
Surface rail	12	13	13	14	16	16	15	17	18	18	20	21		
Taxi/minicab	11	13	12	12	11	12	3	4	3	4	3	4		
Other public ²	1	2	2	3	2	3	1	2	2	3	2	2		
All modes	1,086	1,071	1,047	1,034	1,026	1,044	369	376	380	381	382	385		
<i>Base (unweighted)</i>														
Individuals	22,861	22,868	16,886	19,467	19,199	19,904	22,861	21,868	16,886	19,467	19,199	19,904		
Stages ('000s)	461	432	326	370	364	379	461	432	326	370	364	379		

1. Short walks believed to be under-recorded in 2002 and 2003 compared with other years

2. Includes air, ferries, light rail etc

Source:

Transport Statistics Bulletin, National Travel Survey: 2005, Department for Transport

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Table 4.10 Trips per person per year by age, gender and main mode, 2005

Great Britain										Percentages
	All ages	Under 17	17-20	21-29	30-39	40-49	50-59	60-69	70+	All trips (number)
All people										
Walk	23	33	24	24	21	18	20	22	24	245
Bicycle	1	2	2	1	1	1	1	1	1	14
<i>Unweighted sample size</i>										
individuals	19,904	4,421	870	1,826	2,719	2,894	2,587	2,117	2,470	.
trips ('000s)	379	78	15	35	60	65	53	40	33	.
Males										
Walk	22	34	27	21	17	16	18	22	22	228
Bicycle	2	2	3	3	3	2	11	1	1	21
<i>Unweighted sample size</i>										
individuals	9,560	2,255	427	838	1,311	1,401	1,229	1,016	1,083	.
trips ('000s)	181	39	7	15	26	29	26	21	17	.
Females										
Walk	25	33	22	26	25	19	21	23	26	261
Bicycle	1	1	1	1	1	1	1	1	1	8
<i>Unweighted sample size</i>										
individuals	10,344	2,166	443	988	1,408	1,493	1,358	1,101	1,387	.
trips ('000s)	199	38	8	20	34	35	27	19	16	.

Source:

Transport Statistics Bulletin, National Travel Survey: 2005, Department for Transport

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Table 4.11 Walks of 20 minutes or more, by age, 2005

Great Britain	Percentages								
	All ages	Under 17	17-20	21-29	30-39	40-49	50-59	60-69	70+
Frequency of walking									
3 or more times a week	36	37	42	37	39	36	37	37	26
Once or twice a week	21	20	18	23	22	22	21	20	17
Less than once a week, more than twice a month	6	6	5	6	7	6	5	4	3
Once or twice a month	8	7	7	8	9	9	8	6	5
Less than once a month, more than twice a year	3	3	2	3	4	4	3	3	3
Once or twice a year	3	2	2	2	3	3	3	3	2
Less than once a year or never	24	25	23	21	16	20	23	27	45
<i>Unweighted sample size (individuals)</i>	22,702	5,083	1,037	2,216	3,117	3,344	2,950	2,296	2,659

Source:

Transport Statistics Bulletin, National Travel Survey: 2005, Department for Transport

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Table 4.12 Time spent on main activities^{1,2} with rates of participation by gender, 2005

Great Britain	Minutes/Percentages					
	All persons	%	Men	%	Women	%
Sleep	491	100	484	100	498	100
Rest	46	51	43	50	48	52
Personal care i.e. wash/dress	44	92	40	91	48	93
Eating and drinking	82	97	85	97	79	97
Cooking, washing up	41	70	27	57	54	81
Cleaning, tidying	31	38	13	21	47	54
Washing clothes	11	19	4	6	18	30
Repairs and gardening	17	13	23	15	11	12
Pet care	7	13	6	11	7	14
Shopping, appointments	34	37	27	32	40	42
Caring for own children	24	16	15	11	32	21
Caring for other children	9	6	7	5	10	7
Caring for adults in own household	1	2	2	2	1	2
Caring for adults other household	2	2	2	2	3	2
Paid work	170	39	211	46	132	33
Voluntary work	3	2	3	2	3	2
Formal education	11	4	11	4	11	4
Recreational study	4	2	4	2	4	2
TV & Video/DVDs, radio, music	157	80	170	82	145	78
Reading	24	28	23	26	26	30
Sport & outdoor activities	10	10	13	12	7	8
Spending time with family/friends at home	50	33	42	27	57	38
Going out with friends/family	24	14	28	16	21	12
Contact with friends/family	8	15	7	12	9	19
Entertainment and culture	5	3	5	3	5	4
Hobbies	19	14	22	15	17	13
Attending religious and other meetings	3	3	3	2	3	4
Using computer	11	11	15	15	7	7
Travel	87	86	92	88	82	84
Other specified/ not specified	14	10	13	10	15	10
Total	1,440		1,440		1,440	
<i>Bases (unweighted)</i>	<i>4,941</i>		<i>2,238</i>		<i>2,703</i>	
<i>Bases (weighted)</i>	<i>4,941</i>		<i>2,385</i>		<i>2,556</i>	

1. Average minutes per person per day

2. The participation rate is the proportion of people who spent any time on the activity during their diary day

Source:

Time Use Survey, 2005. The Office for National Statistics

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Table 4.13 Time spent on different activities by age and gender, 2005

Great Britain	Minutes				
	All ages	16 to 24	25 to 44	45 to 64	65 and over
Men					
Sleeping	484	516	474	470	502
Resting	43	25	32	47	71
Paid employment	211	162	294	243	27
Housework	101	42	90	110	156
All leisure	325	382	269	309	414
Social life	77	132	81	57	58
Entertainment & culture	5	4	4	6	4
Sport & outdoor activities	13	32	10	9	12
Hobbies & games	37	54	27	37	42
Reading	23	10	11	22	57
TV & Video/DVDs, radio, music	170	149	137	178	241
Women					
Sleeping	498	522	490	487	512
Resting	48	35	40	46	74
Paid employment	132	145	180	158	5
Housework	180	101	176	199	211
All leisure	293	311	231	284	396
Social life	87	135	79	80	79
Entertainment & culture	5	11	6	3	4
Sport & outdoor activities	7	4	7	9	4
Hobbies & games	23	25	13	26	34
Reading	26	9	13	24	61
TV & Video/DVDs, radio, music	145	126	113	142	214
<i>Bases (unweighted)</i>					
<i>Men</i>	2,238	194	723	762	559
<i>Women</i>	2,703	217	962	828	696
<i>Bases (weighted)</i>					
<i>Men</i>	2,385	352	847	759	427
<i>Women</i>	2,556	349	889	781	537

1. The participation rate is the proportion who spent any time on the activity during their diary day

Source:

The Time Use Survey, 2005. The Office for National Statistics

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Table 4.14 Rates of participation^{1,2} and time spent on travelling by mode of travel and gender, 2005

Great Britain	Minutes/Percentages					
	All	%	Men	%	Women	%
Car/van	52	62	57	64	48	59
Walk/jog	17	31	16	30	17	33
Bus/coach	6	10	4	8	7	12
Train/underground	4	4	6	5	3	3
Pedal bicycle	2	2	3	3	1	1
Other	2	3	3	4	2	2
All travel	87	86	92	88	82	84
<i>Bases (unweighted)</i>	4,941		2,238		2,703	
<i>Bases (weighted)</i>	4,941		2,385		2,556	

1. Average minutes per person per day

2. The participation rate is the proportion of people who spent any time on the activity during their diary day

Source:

Time Use Survey, 2005. The Office for National Statistics

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Table 4.15 Participation in active sport by priority group during the last week and past 4 weeks, 2005/06¹

England	Percentages
<i>At least 1 active sport in the past 4 weeks</i>	
Black and minority ethnic	48.9
Limiting disability	31.3
Lower socio-economic	42.4
Women	45.6
All adults	51.9
<i>At least 3 x 30 minutes during the last week</i>	
Black and minority ethnic	17.0
Limiting disability	9.3
Lower socio-economic	14.4
Women	16.7
All adults	19.3

1. Data presented in table is taken from data collected during the first 9 months of the 2005/2006 survey.

Source:

Taking Part Survey. 'Taking Part: The National Survey of Culture, Leisure and Sport. The Department for Culture, Media and Sport

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Table 4.16 Main reasons for participating in at least one type of active sport during the past 12 months, 2005/06¹

England	Percentages
Just enjoy it	38.8
To keep fit (not just to lose weight)	29.8
To take children	9.7
To meet with friends	7.7
To lose weight	3.2
To help with my injury or disability	1.6
To improve my performance	1.4
To train/take part in a competition	1.2
Holiday activity	1.1
Other reasons	5.3
 Base	 4,849

1. Data presented in table is taken from data collected during the first 9 months of the 2005/2006 survey.

Source:

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Table 4.17 Factors that would encourage those who already take part in active sports at least once a year to do so more often, 2005/06¹

England	Percentages²
Less busy	47.5
Cheaper admission prices	17.8
People to go with	13.5
If I had more free time	7.4
Better playing facilities	6.4
Improved transport/access/more cycle lanes	6.3
Longer opening hours	6.1
Better facilities e.g. cafes, changing rooms	5.8
Help with childcare/creche facilities	5.1
Better equipment	4.0
If there were more/better variety of local facilities	3.2
Safer neighbourhood	2.9
If the weather was better	2.7
Better information on what to do	2.2
Support for my specific needs e.g. injury or disability	2.1
If I had better health	1.9
If I had more motivation/more energy	1.4
A warmer welcome/friendlier staff	1.3
Financial reasons (unspecified)	1.0
Other reasons	4.9
Base	4,532

1. Data presented in table is taken from data collected during the first 9 months of the 2005/2006 survey.

2. Estimates do not sum to 100% due to multiple responses

Source:

Taking Part Survey. 'Taking Part: The National Survey of Culture, Leisure and Sport. The Department for Culture, Media and Sport

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Table 4.18 Main reasons for non-participation in active sports during the past 12 months, 2005/06¹

England	Percentages
Health isn't good enough	50.4
It's difficult to find the time	18.3
Not really interested	15.0
I am too old	3.0
It costs too much	1.8
I exercise enough already	1.5
Never occurred to me	1.4
I wouldn't enjoy it	1.4
I am too lazy	1.3
Other reasons	5.9
Base	2,028

1. Data presented in table is taken from data collected during the first 9 months of the 2005/2006 survey.

Source:

Taking Part Survey. 'Taking Part: The National Survey of Culture, Leisure and Sport. The Department for Culture, Media and Sport

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Table 4.19 Main reason for non-participation in active sports during the past 12 months by different subgroups of the population, 2005/06¹

England	Percentages
Gender	
Male	
Health isn't good enough	51.2
<i>Base</i>	739
Female	
Health isn't good enough	49.9
<i>Base</i>	1,289
Ethnicity	
White	
Health isn't good enough	54.2
<i>Base</i>	1,697
Black and minority ethnic	
It's difficult to find the time	45.0
<i>Base</i>	331
Disability	
Limiting disability/illness	
Health isn't good enough	80.0
<i>Base</i>	1,020
Non-limiting disability/illness	
Not really interested	34.3
<i>Base</i>	117
No disability/illness	
It's difficult to find the time	33.5
<i>Base</i>	887
Socio-economic group	
Higher	
Health isn't good enough	49.5
<i>Base</i>	729
Lower	
Health isn't good enough	53.5
<i>Base</i>	1,187
Age	
16-29	
It's difficult to find the time	44.7
<i>Base</i>	137
30-59	
It's difficult to find the time	34.4
<i>Base</i>	704
60+	
Health isn't good enough	72.3
<i>Base</i>	1,186

1. Data presented in table is taken from data collected during the first 9 months of the 2005/2006 survey.

Source:

Taking Part Survey. 'Taking Part: The National Survey of Culture, Leisure and Sport. The Department for Culture, Media and Sport
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5 Physical activity among children

Background

Physical activity guidelines for children are different to recommendations for adults. Current guidelines stemming from the Health Education Authority review¹ are that children should achieve a total of at least 60 minutes of at least moderate intensity physical activity each day. A secondary recommendation is that children should participate in physical activity of at least moderate intensity at least twice a week, to enhance and maintain muscular strength and flexibility and bone health. There is also a Public Service Agreement target in place, shared by the Department for Education and Skills (DfES) and the Department for Culture, Media and Sport (DCMS) to enhance the take-up of sporting opportunities by 5 to 16 year olds so that the percentage of school children in England who spend a minimum of two hours each week on high quality PE and school sport within and beyond the curriculum increases from an estimated 25% in 2002 to 85% by 2008.

The Health Survey for England (HSE) 2002² is used to perform most of the analysis in this chapter, as it is the most recent data available that contains a large enough sample size for children to carry out a detailed analysis. Information from the HSE 2002 is presented on the participation in out-of-school physical activity and the physical activity levels of children aged 2 to 15. The types of activity for which data were collected were: sports and exercise, active play and walking. Children aged 8 and over were also asked questions about their participation in housework and gardening. Activity which was part of the school curriculum was excluded (full definitions of these categories can be found in Appendix B).

Data on the physical activity that children do as part of the school curriculum is available from the School Sport Survey³. For a third

year, DfES commissioned an independent research company, TNS, to conduct an audit among all schools in the school sport partnership programme during the academic year 2005/06. In total, 16,882 schools within school sport partnerships took part in the survey between May 2006 and July 2006, representing 80% of schools in England

Information on the mode of travel children take to school is collected by the Department for Transport as part of the National Travel Survey (NTS)⁴ and relevant results are presented here.

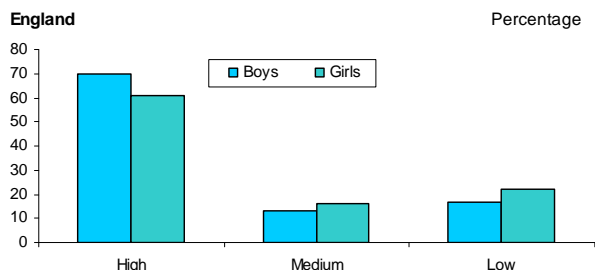
Meeting physical activity guidelines

As with adults, information on whether physical activity guidelines are being met is derived by summarising different types of activity into a frequency-duration scale, by taking account of the energy and time spent participating in physical activities, and the number of active days in the last week. In the HSE, the summary levels are divided between high, medium and low activity. High activity levels are defined as 60 minutes of moderate intensity physical activity on 7 days in the last week. Medium activity levels are 30 to 59 minutes of moderate intensity physical activity on 7 days in the last week. Low activity levels are defined as those that are active at a lower level or not active at all, and refer to those children who did not meet either of the physical activity guidelines.

Overall, boys were more likely than girls to achieve the recommended levels of physical activity, lasting 60 minutes or more on 7 days a week (70% of boys compared with 61% of girls). Overall, participation rates declined with age among girls after age 10. By age 15, 50% of girls did 60 minutes physical activities on 7 days. In contrast, the percentage of 15 year old boys who did so remained high at 69%.

A further 13% of boys and 16% of girls participated for at least 30 but less than 60 minutes on 7 days a week. When looking at the proportion of children who did not meet either of the physical activity guidelines, (reporting low levels of physical activity), the figures were 17% for boys and 22% for girls (Table 5.1 and Figure 5.1).

Figure 5.1 Summary of children's physical activity, by gender, 2002



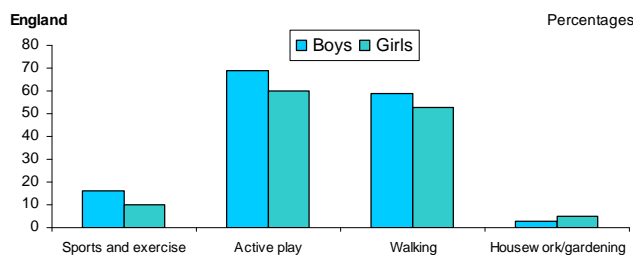
Source: Health Survey for England 2002. The Department of Health
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Types of physical activity

Sports and exercise included such as swimming, football, tennis, gymnastics and covered more organised and structured sporting activities. Active play included things such as riding a bike, kicking a ball around, running about, playing active games and jumping around. Information on walking was collected for those children who had done any continuous walks of at least 5 minutes duration. Housework and gardening was collected for those children aged 8 and over and included housework or gardening activities that involved pulling or pushing for at least 15 minutes, such as vacuuming or cleaning a car.

In 2002, 93% of boys and 91% of girls reported regular participation (5 or more days in the last week) in any activity. The most common type of activity was active play (reported by 69% of boys and 60% of girls on at least five days), followed by walking (reported by 59% of boys and 53% of girls). Housework and gardening was the least common activity; only 3% of boys and 5% girls did this regularly (Table 5.2 and Figure 5.2).

Figure 5.2 Percentage of boys and girls participating in physical activity on 5 or more days a week, 2002



Source: Health Survey for England, 2002. The Department of Health
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On average, boys spent more time than girls doing any physical activities in the last week; 14.2 hours for boys compared with 12.2 hours for girls. The longest participation duration reported was for active play (7.8 hours and 6.4 hours for girls, on average) followed by walking (3.5 hours, on average for both boys and girls), (no table).

Summary activity by Government Office Region and socio-economic factors

Children from the London Government Office Region (GOR), reported the lowest proportions of high activity levels (meeting the current physical activity guidelines) for both boys (64%) and girls (53%), (Table 5.3).

Overall participation levels did not differ significantly when looking at household income quintiles and area deprivation, or NS-SEC. However, when focusing on individual activities a pattern did emerge for sports and exercise. Participation in sports and exercise on at least one day increased with equivalised income and decreased with deprivation levels (Table 5.4).

Trends in physical activity

The structure of the physical activity questionnaire was considerably different between 1997 and 2002. To make 2002 data more comparable with 1997 data, only activities that lasted at least 15 minutes were included in the trend analysis. In addition, all walking and housework and gardening sessions in 2002 were capped at 15 minutes

to make the data more comparable with 1997.

There are no significant differences in the proportions of boys and girls aged 2 to 10 and 11 to 15 meeting the physical activity target of at least 60 minutes of activity each day between 1997 and 2002. However, differences do emerge when considering the proportion of those who did at least 30 minutes of activity each day of the week. For example, the proportion of boys aged 2 to 10 who did between 30 and 59 minutes activity each day of the week increased from 9% in 1997 to 20% in 2002. For girls aged 2 to 10 there was an increase from 10% to 21% over the same period. (Table 5.5)

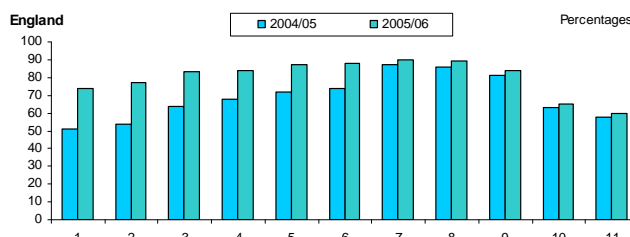
Participation in PE and school sport

The School Sport Survey provides information on sport taking place in schools. In total, 16,882 schools within school sport partnerships took part in the survey between May 2006 and July 2006. Results from the 2005/06 survey show that 80% of pupils in partnership schools participated in at least two hours of high quality PE and school sport in a typical week (Table 5.6). This compares to 69% in the 2004/05 survey and 62% in the 2003/04 survey.

All three types of schools surveyed (primary, secondary and special) exceeded the target in 2005/06. Eighty-two per cent of pupils in primary schools, 78% of pupils in secondary schools and 82% in special schools reported participating in at least two hours of high quality PE and school sport in a typical week. Participation increased by year group up until year 7 (from 74% in year 1 to 90% in year 7), and then slightly decreased until year 9, after which participation decreased to 65% in year 10 and 60% in year 11.

Between 2004/05 and 2005/06 performance has improved the most in primary schools, particularly for children in years 1 and 2. Those participating in at least two hours of high quality PE and school sport in year 1 increased from 51% in 2004/05 to 74% in 2005/06 (Table 5.6 and Figure 5.3).

Figure 5.3 Percentage of pupils who participated in at least two hours of high quality PE and out of school sport in a typical week, by year group, 2004/05 and 2005/06

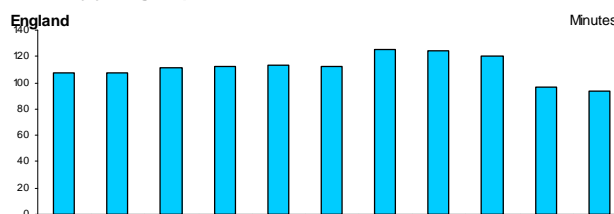


Source: 2005/06 School Sport Survey. The Department for Education and Skills
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Time spent on PE

Looking in detail at time spent on physical education as part of the curriculum, pupils in the partnership schools surveyed, spent an average of almost 2 hours (111 minutes) in a typical week in 2005/06. Of the year groups, year 7 spent the most time (125 minutes) and year 11 spent the least time (94 minutes) participating in curriculum PE in a typical week (Figure 5.4). Pupils in special schools spent the most time taking part in curriculum PE (126 minutes), (Table 5.7).

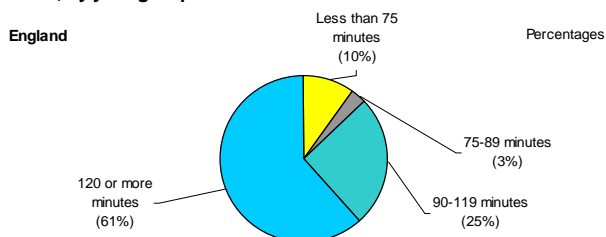
Figure 5.4 Total curriculum time spent taking part in PE in a typical week, by year group 2005/06



Source: 2005/06 School Sport Survey. The Department for Education and Skills
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The percentage of pupils receiving their recommended 2 hours of PE and sport entirely from within curriculum time was 61%. This is an increase from 50% in 2004/05 and 44% in 2003/04. As 61% pupils received their recommended 2 hours of PE and sport entirely from within curriculum, and overall 80% of pupils participated in at least two hours of PE/school sport, this shows that 19% of pupils 'topped up' with out of school hours school sport. (Table 5.8 and Figure 5.5)

Figure 5.5 Curriculum time spent taking part in PE in a typical week, by year group 2005/06



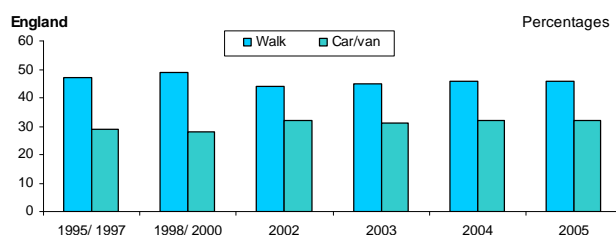
Source: 2005/06 School Sport Survey. The Department for Education and Skills
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Trips to school

The NTS 2005 reports that the proportion of primary school children aged 5 to 10 walking to school declined from 53% in 1995/97 to 49% in 2005, with an increase from 38% to 43% in the numbers being driven to school during the same period. For secondary school pupils, the proportion travelling to school on foot has increased slightly from 42% in 1995/97 to 44% in 2005. Simultaneously, the proportion of secondary school children travelling to school by car has increased slightly from 20% to 22% during the same period.

The average trip length to school for children aged 5 to 10 increased from 1.3 to 1.5 miles between 1995/1997 and 2005, and for pupils aged 11 to 15, it remained about 3 miles (Table 5.9 and Figure 5.6).

Figure 5.6 Trips to school for children aged 5 to 16 by main mode, 1995-97 to 2005



Source: Transport Statistics Bulletin, National Travel Survey: 2005. The Office for National Statistics
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Table 5.1 Summary of children's physical activity¹, by age and gender, 2002

England	Percentages														
	All ages	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Boys															
High	70	67	76	73	67	70	71	68	69	72	77	71	69	62	69
Medium	13	13	12	15	17	14	15	14	14	12	9	11	17	14	14
Low	17	20	12	12	17	16	14	18	17	16	14	18	15	24	17
Girls															
High	61	65	78	65	66	69	65	62	62	66	64	52	50	44	50
Medium	16	12	11	14	16	13	13	19	15	17	16	22	23	21	15
Low	22	23	11	21	18	18	22	19	23	17	20	26	27	35	35
<i>Bases (unweighted)</i>															
Boys	3,629	243	231	254	242	262	284	271	249	284	283	248	258	273	247
Girls	3,504	252	243	235	256	244	258	236	256	232	268	261	269	244	250
<i>Bases (weighted)</i>															
Boys	4,201	283	266	285	287	304	336	317	296	331	322	299	290	309	275
Girls	4,058	283	278	261	301	296	298	300	300	281	310	304	296	280	270

1. High = 60 minutes or more on all 7 days; medium = 30-59 minutes on all 7 days; low = lower level of activity

Source:

Health Survey for England 2002. The Department of Health

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Table 5.2 Number of days' participation by children in different activities in the last week, by age and gender, 2

England		Percentages													
	All ages	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Boys															
Sports and exercise															
None	41	69	71	58	47	42	36	31	32	29	30	37	32	37	32
At least one day	59	31	29	42	53	58	64	69	68	71	70	63	68	63	68
1-2 days	30	19	16	25	34	36	33	40	35	33	35	27	27	26	30
3-4 days	13	4	5	8	7	12	16	12	15	21	11	16	14	16	17
5 days or more	16	8	8	8	12	11	15	17	18	17	24	20	27	21	20
Mean number of days ¹	1.9	0.9	0.9	1.1	1.5	1.6	1.9	2.0	2.2	2.3	2.4	2.2	2.5	2.1	2.3
Active play															
None	7	6	3	3	5	8	5	4	7	5	7	7	12	18	14
At least one day	93	94	97	97	95	92	95	96	93	95	93	93	88	82	86
1-2 days	13	4	2	7	11	10	10	13	14	13	16	22	18	21	25
3-4 days	10	6	7	7	7	10	10	14	8	9	12	11	13	14	15
5 days or more	69	84	87	83	78	72	75	68	71	73	66	60	57	46	46
Mean number of days ¹	5.2	5.9	6.1	5.9	5.6	5.3	5.6	5.3	5.3	5.4	5.0	4.7	4.3	3.9	3.9
Walking															
None	11	18	15	7	9	13	15	12	15	17	8	4	7	10	6
At least one day	89	82	85	93	91	87	85	88	85	83	92	96	93	90	94
1-2 days	15	16	15	23	17	16	15	21	12	14	14	11	12	10	9
3-4 days	15	23	18	21	15	18	14	13	14	16	11	13	9	11	10
5 days or more	59	43	51	48	58	54	55	54	60	54	67	71	72	69	75
Mean number of days ¹	4.5	3.8	4.2	4.3	4.5	4.3	4.2	4.3	4.5	4.2	4.9	5.1	5.1	5.0	5.4
Housework/gardening²															
None	70	..	..	..	..	..	..	81	74	69	72	71	67	64	62
At least one day	30	..	..	..	..	..	..	19	26	31	28	29	33	36	38
1-2 days	23	..	..	..	..	..	..	18	19	26	21	19	24	28	31
3-4 days	4	..	..	..	..	..	..	1	4	3	5	6	5	5	5
5 days or more	3	..	..	..	..	..	..	-	3	2	1	4	4	3	3
Mean number of days ¹	0.6	..	..	..	..	..	..	0.3	0.6	0.6	0.5	0.7	0.7	0.7	0.8
Any physical activity															
None	1	3	2	-	2	2	2	-	1	-	1	1	1	2	1
At least one day	99	97	98	100	98	98	98	100	99	100	99	99	99	98	99
1-2 days	2	3	2	2	2	2	3	2	2	1	2	-	2	4	3
3-4 days	3	3	2	4	2	1	3	4	4	6	3	2	2	6	4
5 days or more	93	92	95	93	94	94	93	94	93	93	95	97	95	88	92
Mean number of days ¹	6.6	6.5	6.7	6.7	6.6	6.6	6.6	6.7	6.6	6.7	6.6	6.7	6.7	6.4	6.6
<i>Bases (unweighted)</i>	3,629	243	231	254	242	262	284	271	249	284	283	248	258	273	247
<i>Bases (weighted)</i>	4,201	283	266	285	287	304	336	317	296	331	322	299	290	309	275

1. Means based on all informants

2. Only asked of children aged 8 and over

Source:

Health Survey for England, 2002. The Department of Health

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Table 5.2 continued...

England	All ages	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Percentages															
Girls															
Sports and exercise															
None	45	64	56	55	50	40	38	41	30	37	33	43	41	48	50
At least one day	55	36	44	45	50	60	62	59	70	63	67	57	59	52	50
1-2 days	34	25	31	31	35	40	38	40	48	34	38	32	32	25	31
3-4 days	12	3	5	7	8	12	13	11	11	18	17	15	13	16	9
5 days or more	10	8	8	6	7	8	11	8	11	11	13	11	13	10	9
Mean number of days ¹	1.4	0.9	1.0	1.0	1.1	1.4	1.6	1.4	1.8	1.7	1.9	1.6	1.7	1.5	1.3
Active play															
None	13	7	4	7	7	5	4	5	11	8	12	21	22	37	41
At least one day	87	93	96	93	93	95	96	95	89	92	88	79	78	63	59
1-2 days	15	5	3	9	9	13	15	17	17	15	16	20	24	23	26
3-4 days	12	8	6	10	10	10	12	13	10	14	16	16	15	14	10
5 days or more	60	81	86	74	74	71	69	65	62	64	56	43	40	26	23
Mean number of days ¹	4.6	5.8	6.0	5.5	5.4	5.4	5.2	5.0	4.7	5.0	4.5	3.7	3.4	2.5	2.3
Walking															
None	10	15	10	7	12	11	10	11	11	6	8	10	7	6	15
At least one day	90	85	90	93	88	89	90	89	89	94	92	90	93	94	85
1-2 days	19	19	19	18	13	15	19	16	18	18	13	13	15	11	19
3-4 days	19	21	19	15	21	13	19	16	11	11	12	16	14	13	21
5 days or more	53	45	53	61	54	60	53	57	60	65	66	61	65	69	45
Mean number of days ¹	4.6	4.0	4.4	4.6	4.4	4.4	4.4	4.4	4.4	4.8	4.9	4.6	4.8	5.0	4.8
Housework/gardening²															
None	63	..	..	..	..	..	..	73	61	66	67	61	59	61	55
At least one day	37	..	..	..	..	..	..	27	39	34	33	39	41	39	45
1-2 days	26	..	..	..	..	..	..	20	28	24	22	29	27	23	32
3-4 days	6	..	..	..	..	..	..	4	7	7	7	5	6	7	6
5 days or more	5	..	..	..	..	..	..	3	4	3	4	5	8	9	7
Mean number of days ¹	0.9	..	..	..	..	..	..	0.6	0.9	0.7	0.8	0.9	1.1	1.2	1.0
Any physical activity															
None	1	2	1	1	1	1	-	-	1	-	1	2	1	1	3
At least one day	99	98	99	99	99	99	100	100	99	100	99	98	99	99	97
1-2 days	3	2	1	2	3	4	2	2	3	2	2	3	6	4	4
3-4 days	5	3	1	7	2	4	4	5	3	5	4	9	3	8	10
5 days or more	91	92	97	90	93	91	93	93	93	93	93	87	91	87	82
Mean number of days ¹	6.5	6.5	6.7	6.5	6.6	6.5	6.6	6.6	6.5	6.6	6.5	6.4	6.4	6.2	6.1
<i>Bases (weighted)</i>	4,058	283	278	261	301	296	298	300	300	281	310	304	296	280	270
<i>Bases (unweighted)</i>	3,504	252	243	235	256	244	258	236	256	232	268	261	269	244	250

1. Means based on all informants

2. Only asked of children aged 8 and over

Source:

Health Survey for England, 2002. The Department of Health

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Table 5.3 Children's¹ summary activity levels², by Government Office Region and gender, 2002

England	Percentages									
England	North East	North West	Yorkshire & the Humber	East Midlands	West Midlands	East England	London	South East	South West	
Boys										
High	70	74	70	74	73	70	68	64	72	66
Medium	13	13	14	8	11	14	15	19	11	16
Low	17	13	16	18	16	16	17	17	17	18
Girls										
High	61	64	65	62	65	64	63	53	56	65
Medium	16	15	14	13	16	14	15	25	17	15
Low	22	21	21	25	20	22	23	23	27	20
<i>Bases (unweighted)</i>										
Boys	3,629	209	498	400	343	363	392	463	606	355
Girls	3,504	201	485	350	295	368	397	475	595	338
<i>Bases (weighted)</i>										
Boys	4,201	240	584	463	390	425	444	549	700	407
Girls	4,058	225	578	405	343	431	456	553	677	390

1. Children aged 2-15

2. High = 60 minutes or more on all 7 days; Medium = 30-59 minutes on all 7 days; Low = Lower level of activity

Source:

Health Survey for England, 2002. The Department of Health

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Table 5.4 Participation in sports and exercise on at least one day in the last week by equivalised household income quintile, Index of Multiple Deprivation (IMD) and age, 2002

England	Percentages									
	Equivalised household income quintile					Index of Multiple Deprivation quintile				
	1st (lowest)	2nd	3rd	4th	5th (highest)	1st (lowest)	2nd	3rd	4th	5th (highest)
Boys aged 2-10	48	49	60	57	68	61	62	57	55	47
Boys aged 11-15	63	57	71	67	77	73	66	68	63	64
Girls aged 2-10	38	46	61	66	70	64	65	59	53	43
Girls aged 11-15	47	55	62	63	71	62	62	60	55	53
<i>Bases (unweighted)</i>										
Boys aged 2-10	457	446	436	394	355	380	371	378	468	723
Boys aged 11-15	250	243	244	213	155	208	196	235	299	371
Girls aged 2-10	452	393	436	368	345	343	349	388	448	684
Girls aged 11-15	266	259	232	202	154	211	210	206	297	368
<i>Bases (weighted)</i>										
Boys aged 2-10	581	539	488	435	384	439	419	432	552	864
Boys aged 11-15	323	283	264	231	162	229	218	263	344	441
Girls aged 2-10	590	470	493	404	384	388	405	444	533	827
Girls aged 11-15	327	301	255	212	166	240	236	224	332	429

Source:

Health Survey for England, 2002. The Department of Health

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Table 5.5 Children's summary physical activity levels^{1,2,3}, 1997 and 2002

England	Percentages	
	1997	2002
Boys 2-10		
High ⁴	54	55
Medium	9	20
Low	37	26
Boys 11-15		
High ⁴	55	56
Medium	13	16
Low	33	29
Girls 2-10		
High ⁴	45	48
Medium	10	21
Low	44	30
Girls 11-15		
High ⁴	27	34
Medium	15	22
Low	59	44
<i>Bases (unweighted)</i>		
<i>Boys aged 2-10</i>	2,329	2,320
<i>Boys aged 11-15</i>	1,156	1,309
<i>Girls aged 2-10</i>	2,362	2,212
<i>Girls aged 11-15</i>	1,117	1,292
<i>Bases (weighted)</i>		
<i>Boys aged 2-10</i>	1,425	2,705
<i>Boys aged 11-15</i>	719	1,495
<i>Girls aged 2-10</i>	1,456	2,598
<i>Girls aged 11-15</i>	679	1,460

1. High = 60 minutes or more on all 7 days; Medium = 30-59 minutes on all 7 days; Low = Lower level of activity

2. Only activities that lasted 15 minutes and over were included

3. It was assumed that all walking and housework/gardening sessions in 2002 lasted 15 minutes. This was necessary in order to make 2002 and 1997 data comparable as there was no duration question for walking and housework/gardening in 1997

4. Based on the assumption that all activity was of at least moderate intensity, this group represents those who met the physical activity recommendations for at least an hour of at least moderate-intensity activity a day

Source:

Health Survey for England, 2002. The Department of Health

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Table 5.6 Pupils¹ who participated in at least two hours of high quality PE and out of hour's school sport in a typical week - by year group, 2004/05 and 2005/06

England	Percentages	
	2004/05	2005/06
All pupils	69	80
Year 1	51	74
Year 2	54	77
Year 3	64	83
Year 4	68	84
Year 5	72	87
Year 6	74	88
Year 7	87	90
Year 8	86	89
Year 9	81	84
Year 10	63	65
Year 11	58	60
<i>Base</i>	3,555,553	5,048,975

1. Based on pupils surveyed in 16,882 schools within school sport partnerships

Source:

2005/06 School Sport Survey. The Department for Education and Skills

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Table 5.7 Total curriculum time pupils¹ spent taking part in PE in a typical week, by year group, 2005/06

England	Minutes
All pupils	111
Year 1	107
Year 2	107
Year 3	111
Year 4	112
Year 5	113
Year 6	112
Year 7	125
Year 8	124
Year 9	120
Year 10	97
Year 11	94
All primary	110
All secondary	112
All special	126
<i>Base</i>	<i>5,050,989</i>

1. Based on pupils surveyed in 16,882 schools within school sport partnerships

Source:

2005/06 School Sport Survey. The Department for Education and Skills
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Table 5.8 Proportion of curriculum time that all pupils in each year group spent taking part in PE in a typical week, by year group 2005/06

England	Percentages			
	Less than 75 minutes	75-89 minutes	90-119 minutes	120 minutes or more
All pupils	10	3	25	61
Year 1	10	6	30	54
Year 2	9	6	30	55
Year 3	6	4	27	63
Year 4	5	4	26	65
Year 5	5	3	26	66
Year 6	6	3	26	65
Year 7	1	..	18	81
Year 8	1	..	19	79
Year 9	3	1	24	72
Year 10	33	3	26	38
Year 11	36	4	26	34

1. Based on pupils surveyed in 16,882 schools within school sport partnerships

Source:

2005/06 School Sport Survey. The Department for Education and Skills

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Table 5.9 Trips to and from school¹ per child per year by main mode, 1995-97 to 2005

Great Britain	Percentages/Miles/Numbers																	
	Age 5-10						Age 11-16						Age 5-16					
	1995/ 1997	1998/ 2000	2002	2003	2004	2005	1995/ 1997	1998/ 2000	2002	2003	2004	2005	1995/ 1997	1998/ 2000	2002	2003	2004	2005
Walk ²	53	56	51	51	49	49	42	43	38	40	43	44	47	49	44	45	46	46
Bicycle	-	-	1	1	1	1	2	2	2	2	3	2	1	1	2	1	2	1
Car/van	38	37	41	41	43	43	20	20	24	23	22	22	29	28	32	31	32	32
Private bus	3	3	4	3	4	3	7	7	8	9	7	9	5	5	6	6	5	6
Local bus	4	3	2	3	3	3	26	24	25	23	22	20	15	14	14	14	13	12
Rail	-	-	-	-	-	-	1	1	1	1	1	1	-	1	1	1	1	1
Other	2	1	1	1	1	1	2	3	2	2	2	2	2	2	2	2	1	1
Average length (miles) ¹	1.3	1.4	1.5	1.5	1.7	1.5	2.9	2.8	3.3	3.2	2.9	3.0	2.1	2.1	2.5	2.4	2.3	2.3
% travelling to school alone (main stage)	9	11	11	8	10	6	41	40	40	40	42	44	25	26	26	25	27	26
Unweighted sample size individuals	1,955	1,758	1,337	1,572	1,572	1,518	1,749	1,668	1,291	1,629	1,611	1,667	3,704	3,426	2,628	3,201	3,183	3,185
trips	12,155	10,608	7,885	9,738	9,960	9,449	10,793	10,862	7,822	10,569	10,516	10,908	22,948	21,470	15,707	20,307	20,476	20,357

1. Trips of under 50 miles only

2. Short walks believed to be under-recorded in 2002 and 2003 compared with earlier years

Source:

Transport Statistics Bulletin, National Travel Survey: 2005. The Office for National Statistics

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6 Diet

Background

This chapter describes information available about food and drink purchases and consumption which could be related to obesity and overweight from three national surveys. Information is provided on the types of food people buy and eat, energy intake and which foods that energy is derived from, as well as fruit and vegetable consumption. Time trends are presented wherever possible. Other aspects of nutrition, such as salt intake and consumption of vitamins and minerals, are not covered.

Family Food 2004-05¹ is the latest in a series of annual reports published by the Department for Environment Food and Rural Affairs (Defra) on food and drink purchases in the United Kingdom based on the Expenditure and Food Survey (EFS). The EFS, created in 2001 to replace the National Food Survey (NFS) and the Family Expenditure Survey (FES), collects information on the type and quantity of food and drink purchased outside the home and brought into the home for consumption, as well as information on eating out. The EFS, and its predecessors, are used here to present longer time trends in eating patterns and information on expenditure on food. The EFS is an annual survey covering the UK, with a sample size of 16,257 people in 2004/05.

The National Diet and Nutrition Survey (NDNS)² collects data on consumption by individuals using a weighed record over a period of seven days, thus allowing analyses of the intake of food for individuals at a detailed level. Average daily nutrient intakes are calculated based on the nutrient composition of the various foods consumed. The NDNS mainly used in this report is the 2000/01 survey of adults aged 19 to 64 living in Great Britain. Other surveys have focused on younger or elderly people (see Appendix A).

Information on fruit and vegetable consumption is taken from the Health Survey for England (HSE) as this is the source used to monitor the Government's target for people to eat 5 or more portions of fruit or vegetables a day. The HSE has asked specific questions on fruit and vegetable consumption since 2001. As described in earlier chapters the HSE is an annual survey designed to monitor the health of the population of England. Each survey consists of core questions and measurements, plus modules of questions on specific issues that change periodically. Latest trend data is available for 2005³, all other analyses uses 2004 HSE⁴.

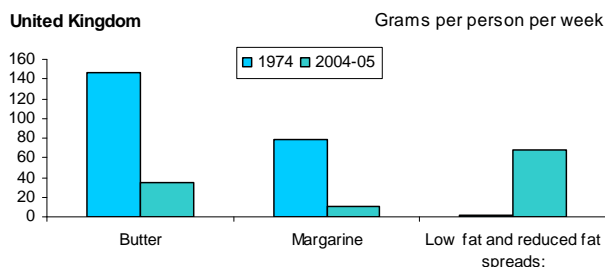
Estimates of consumption vary across the three sources because of the populations covered and the method of collection used. Collection methods vary from diaries of household expenditure to seven-day weighed food diaries by individuals. Each source has its strengths and limitations which are described in detail in Appendix A.

Trends in purchases of food and drink

Table 6.1 shows quantities of different foods and drinks purchased and brought into the household since 1974 as estimated from the EFS. While we have been buying declining amounts of milk and cream, eggs, carcase meat, fats and oils, sugars and preserves, potatoes and bread, we have been buying more non-carcase meat, fish, fruit and beverages. Several food items in particular have seen either large increases or decreases in quantities purchased. For example, purchase of whole milk is less than a fifth of what it was in 1974, with skimmed milks now forming 57% of total milk purchase. A similar pattern is seen for butter/margarine and low fat spreads and white and wholemeal bread. Even between 2003/04 and 2004/05 the quantity of whole

milk bought fell by 17% with wholemeal bread rising by 18% (Figure 6.1).

Figure 6.1 Household purchases of butter, margarine and low fat spreads, 1974 and 2004/05



Source: Family Food 2004-05. The Department for Environment, Food and Rural Affairs (DEFRA)
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Food and drink consumed

Focusing on foods being consumed, the 2000/01 NDNS reports that milk, meat (including meat dishes and meat products) and vegetables (including vegetable dishes) were consumed in the largest quantities, after tea, coffee and water and alcoholic drinks (Table 6.2). Over 90% of respondents reported consuming these foods in the survey week.

Differences in the types of food consumed can be seen between men and women, different age groups, and whether a household was in receipt of benefits. Men were more likely to report eating fats and oils (spreading fats not cooking fats); meat (including meat dishes and products); sugar, preserves and sweet spreads, non-diet soft drinks and alcoholic drinks than women, while women were more likely to consume yogurts, fruit and low calorie soft drinks. There were also differences by age. For example, the youngest group (aged 19 to 24 years) were more likely to consume savoury snacks and non-diet soft drinks and less likely to consume eggs and fruit than the oldest group (aged 50 to 64 years).

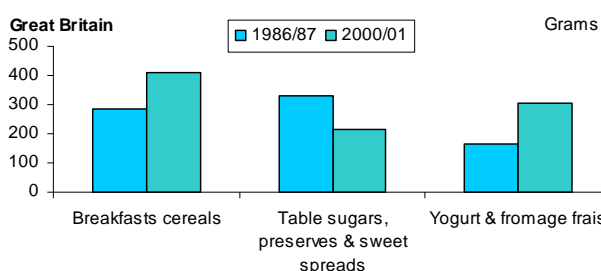
When looking at the quantities of food consumed, men consumed larger quantities of many foods compared to women, however women consumed larger quantities of fruit.

The youngest group consumed larger quantities of pasta, rice and other cereals, savoury snacks and non-diet soft drinks than the oldest group while the oldest group consumed more breakfast cereals, biscuits, buns, cakes and pastries, fish and fish dishes, vegetables and fruit.

The NDNS shows that both men and women in benefit households (those in receipt of certain state benefits), were less likely to have consumed a number of foods than those living in non-benefit households. These included puddings, yogurts, fruit and alcoholic drinks (Tables 6.3 and Table 6.4).

Table 6.5 and Table 6.6 compare the consumption of different types of food in 1986/7 and 2000/01 using results from the NDNS. Results are similar to those presented earlier derived from the EFS. Food categories more likely to have been consumed by respondents to the 1986/87 survey, compared with the most recent survey, include biscuits, puddings, butter, milk, cheese, meat, fish (including dishes and products) and table sugar. Items more likely to have been consumed in the 2000/01 survey include breakfast cereals, yogurt and fromage frais, nuts, soft low calorie drinks and alcoholic drinks (Figure 6.2).

Figure 6.2 Quantities of breakfast cereals, yogurts and sugar consumed, 1986/87 and 2000/01



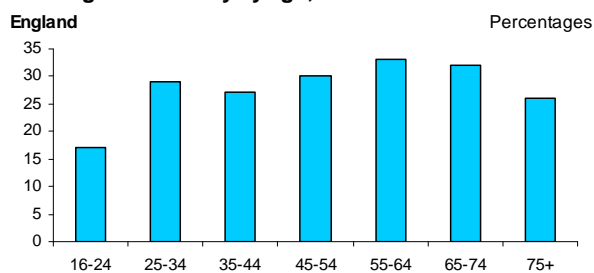
Source: The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)
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Fruit and vegetable consumption

Results from the 2005 HSE shows that 26% of men, 30% of women and 17% of children eat 5 or more portions of fruit or vegetables a day, the recommended amount to contribute

to a healthy diet (Table 6.7 and Table 6.8). Adults on average consumed 3.7 portions a day while children consumed 3.1. Since the HSE started collecting information on fruit and vegetable consumption in 2001, there has been an increase from 22% for men and 25% for women in the proportion of who consume 5 or more portions of fruit or vegetables a day. The youngest group of adults (16 to 24 year olds) were least likely to eat 5 or more portions a day (Figure 6.3). For children, between 2001 and 2004 there were no changes in the mean portions of fruit consumed per day but there was an increase in 2005 both in the average number of portions of fruit and vegetable eaten daily and the proportion eating 5 or more portions a day.

Figure 6.3 Consumption of 5 or more portions of fruit and vegetables a day by age, 2005



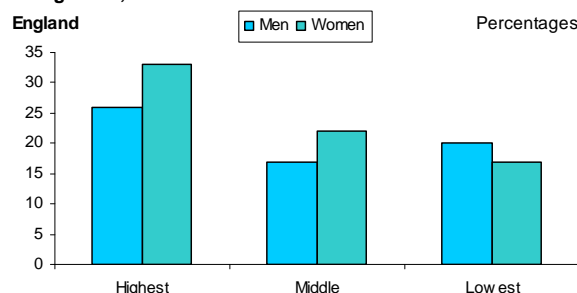
Source: Health Survey for England - updating of trend tables to include 2005 data. The Information Centre

Other factors which may affect whether people eat the recommended number of fruit and vegetable portions are income and ethnicity. With the exception of Irish men, the proportion of men eating 5 or more portions a day was higher among all minority ethnic groups than the general population in 2004 (Table 6.9). Over a third of Indian and Chinese men ate this amount (37% and 36% respectively) compared to 23% in the general population. For women, the pattern was the same with 42% of Chinese women and 36% of Indian women eating 5 or more portions a day compared with 27% in the general population.

A clear relationship can also be seen between household income and fruit and vegetable consumption. Men and women in

the highest income tertile were most likely to eat 5 or more portions a day (26% and 33% respectively), while those in the middle and lower tertiles were less likely to do so in 2004 (Figure 6.4).

Figure 6.4 Consumption of 5 or more portions of fruit and vegetables a day, by equivalised household income tertile and gender, 2004



Source: Health Survey for England 2004. The information centre

Using the EFS to give a longer time series we can see that quantities of fruit and vegetables purchased rose from the 1970s up to 1997 (1,868 grams per person per week in 1975 to 2,336 grams in 2000) but have remained fairly static since. Table 6.10 shows the quantity of purchases of fruit and vegetables using the EFS since 1975. The rise in the quantities purchased is clear to see for fruit but less so for vegetables with quantities of fresh green vegetables falling. The rise in the purchase of fruit juices should also be noted. Information on the consumption of fruit and vegetables is also available from the NDNS.

Energy intake

Energy is required for the body to function and be active. Energy is derived from the intake of carbohydrate, fat, protein and alcohol in the diet.

The EFS and its predecessor the NFS can provide a long term trend of energy intake. Table 6.11 shows that this long term trend is downwards, with an estimated 20% reduction in energy intake per person since 1974 using the combined series which includes energy derived from alcohol and eating out where possible. Changes in definitions over this time period mean that

definitive figures cannot be given but the combined series given in the table is the best estimate for each year (Appendix A gives more detail of the estimates made).

Total energy intakes for adults from the NDNS in 2000/01 were below the Estimated Average Requirements (EARs) for men and women in all age groups (Table 6.12). EARs are defined as the estimated energy intake needed to meet the average requirements of the population group. The EAR for men aged 19 to 59 is 2,550 kcal a day and for women is 1,940 kcal for those aged 19 to 50 and 1,900 kcal for those aged 51 to 59. The increasing prevalence of obesity suggests that energy intakes are generally greater than requirements rather than inadequate, however it is also recognised that there is some under-reporting of energy intakes in all dietary surveys (see Appendix A).

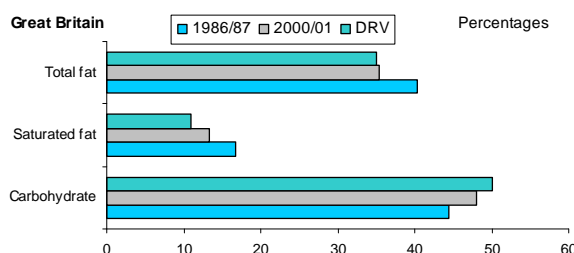
Results from the NDNS also show that for both men and women mean daily total energy intake was lower for those living in households where someone was in receipt of benefits than for those in non-benefit households. In benefit households, mean daily energy intake was 2,115 kcal for men and 1,522 kcal for women compared with 2,357 kcal for men and 1,666 kcal for women in non-benefit households (no table).

Macronutrient intake

As was seen in Table 6.12, men have higher intakes of total energy than women and higher intakes of most nutrients. Nutrient intakes are described for total energy, protein, total carbohydrate, non-milk extrinsic sugars (NMES), total fat and saturated fatty acids and alcohol. Intakes from these nutrients are compared with Dietary Reference Values (DRVs), estimates of the energy and nutrient requirements needed by the population, for example EARs as described above and Reference Nutrient Intake Values (RNIs). It is estimated that 50% of energy intake should be derived from carbohydrates and no more than 35% from fats (11% from saturated fatty acids).

Compared with the 1986/87 NDNS, men in the 2000/01 survey had lower energy intakes and both men and women in 2000/01 derived more of their energy from protein and carbohydrate and less from total fat and saturated fatty acids. (Table 6.13 and Figure 6.5)

Figure 6.5 Comparison of food energy intakes from total fat, saturated fat and total carbohydrate, 1986/87 and 2000/01



Source: The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS) Copyright © 2006, Re-used with the permission of The Office for National Statistics

Table 6.13 shows that the percentage of food energy from fat in 2000/01 was 35.8% for men and 34.9% for women, close to the DRV of 35% and lower than in 1986/87 (40% for both men and women). Similarly, the percentage of food energy derived from saturated fatty acids in 2000/01 was lower than in 1986/87: 13.4% in 2000/01 compared with 16.5% in 1986/87, although intake in 2000/01 was still above the DRV (11%).

The NDNS shows that mean intakes of total carbohydrate was 47.7% for men and 48.5% for women in 2000/01 both slightly below the DRV of 50% and higher than in 1986/87. Both men and women, have higher than recommended intakes from non-milk extrinsic sugars (NMES) (13.6% and 11.9% respectively).

For intake of protein, for each sex and age group, mean daily intake was at least 130% of the RNI. The proportion of energy intake derived from alcohol was 6.5% for men and 3.9% for women in 2000/01 (Table 6.12).

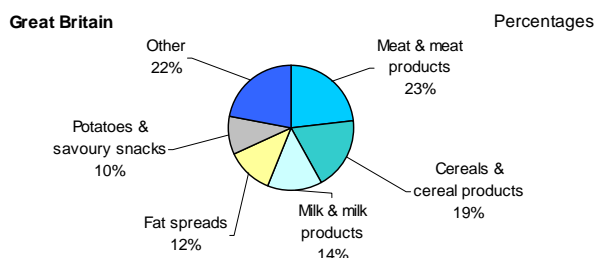
Sources of energy and macronutrients

Results from the 2000/01 NDNS, show that around a third of total energy intake was derived from cereals and cereal products

(31%), 15% from meat (including meat dishes and meat products), 10% from milk and milk products, 10% from drinks and 9% from potatoes and potato products (Table 6.14).

Cereals and cereal products contributed 45% of the intake of carbohydrates. For the intake of total fat, meat (including meat dishes and meat products) contributed the highest proportion (23%) followed by cereals and cereal products (19%), milk and milk products (14%) and fat spreads (12%) (Figure 6.6). For saturated fatty acids, the figures were very similar apart from milk which contributed 24%. This varied according to whether the person was a high consumer of fat/saturated fat though with those who were high fat consumers (39% or more food energy from fat) derived a higher proportion of their fat from cream, cheese, sausages, meat pies, chips and crisps compared with low fat consumers (<35% energy intake from fat). The main sources of NMEs were drinks, sugar, preserves and confectionary, and cereal and cereal products (no table).

Figure 6.6 Percentage contribution of food types to average fat intake, 2000/01



Source: The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS) Copyright © 2006, Re-used with the permission of The Office for National Statistics

Expenditure on food and drink and eating out

Trends in expenditure on food and drink can also indicate changing eating patterns, although both quantities purchased and expenditure could be affected by differing food prices. The EFS shows that, in 2004/05 the average weekly expenditure on food and

drink brought home in the UK was £23.05 per person, while expenditure on food and drink eaten out was £11.26. Expenditure on food and drink has fallen by 1% in real terms since 1995 while expenditure on food and drink eaten out has risen by 53% over the same period. In 2004/05, spending on food and drink eaten out accounted for 27% of all spending on food and drink. This compares with 21% ten years earlier (Table 6.15).

Of the £23.05 spent on food brought home in 2004/05, 21% was spent on meat products (£4.94), 16% on cereals and bread (£3.76) and 11% on alcoholic drink (£2.66) (Table 6.16).

Eating out accounted for 8.5% of total energy intake in 2004/05 and 7.6% when alcohol is excluded. For most nutrients, the contribution to average daily intake from eating out was between 6% and 10%. Alcohol is the exception with around a third of people's intake of alcohol coming from purchases outside the home (no table).

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Table 6.1 Household food and drink purchases, 1974, 1994, 1999, 2003/04 and 2004/05

United Kingdom	Grams per person per week ¹				
	1974	1994	1999	2003-04	2004-05
Milk and cream (millilitres)	2,978	2,265	2,086	2,024	1,984
Liquid wholemilk	2,687	877	646	585	485
Skimmed milks:	5	1,092	1,150	1,081	1,133
Fully skimmed milk	2	212	168	154	158
Semi and other skimmed	3	880	982	926	975
Other milks and dairy products ² (millilitres)	238	137	120	162	159
Yoghurt and fromage frais	33	138	149	177	187
Cream	15	21	20	20	19
Cheese	105	106	103	113	110
Meat - carcass	393	250	226	225	229
Meat - non-carcass	630	732	735	836	820
Fish	123	148	146	156	158
Eggs (numbers)	4	2	2	2	2
Fats and oils	316	235	192	186	182
Butter	147	36	35	35	35
Margarine	78	46	20	12	11
Low fat and reduced fat spreads:	1	77	74	71	68
Reduced fat spreads	0	51	51	58	44
Low fat spreads	1	26	22	13	23
Vegetable and salad oils (millilitres)	22	52	49	55	55
Other fats and oils (including lard)	66	24	14	13	13
Sugar and preserves	535	224	169	135	134
Potatoes	1,437	1,085	971	864	822
Vegetables (excluding potatoes)	1,141	1,161	1,166	1,079	1,106
Fruit	731	1,039	1,131	1,190	1,168
Bread	1,019	820	779	728	695
White bread	860	472	450	410	353
Brown bread	65	90	75	38	45
Wholemeal bread	17	112	95	101	120
Rolls and sandwiches	56	87	83	86	85
Other bread	21	59	76	93	92
Cereals (excluding bread)	823	800	861	885	882
Flour	162	65	58	52	55
Cakes and pastries	158	157	152	133	126
Buns, scones and tea-cakes	30	42	45	44	47
Biscuits	214	184	177	163	165
Oatmeal and oat products	13	10	12	12	14
Breakfast cereals	77	126	126	134	131
Rice	17	41	74	80	79
Pasta	31	33	64	83	81
Pizza	0	38	62	67	69
Other cereals	121	105	92	117	116
Beverages	107	75	68	55	56
Soft drinks ³ (millilitres)	..	1,513	1,584	1,933	1,832
Alcoholic drinks (millilitres) ⁴	..	552	640	792	763
Confectionery	..	120	126	129	131
Takeaways	100	171	193	186	191

1. Unless otherwise stated

2. Includes condensed, infant and instant milks

3. Excluding pure fruit juices which are recorded as fruit products

4. Average for the whole population

Source:

Family Food 2004-05. The Department for Environment, Food and Rural Affairs (DEFRA)

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Table 6.2 Quantities of food consumed in the previous week, 2000/01

Great Britain	19-24 years old												25-34 years old				35-49 years old				50-64 years old				All ages		
	Mean			Mean			%			Mean			Mean			%			Mean			Mean			%		
	all	consumers	consumers	all	consumers	consumers	all	consumers	consumers	all	consumers	consumers	all	consumers	consumers	all	consumers	consumers	all	consumers	consumers	all	consumers	consumers			
Pasta, rice & other miscellaneous cereals ¹	646	699	92	630	686	92	498	578	86	356	443	80	507	585	87												
Bread	660	674	98	719	728	99	711	721	99	710	719	99	706	716	99												
Breakfast cereals	115	222	52	185	278	67	197	286	69	263	367	71	203	304	67												
Biscuits, buns, cakes, pastries & fruit pies	135	190	71	201	245	82	235	278	85	293	329	89	231	277	84												
Puddings (including dairy desserts & ice-cream)	107	271	40	115	264	44	142	253	56	178	311	57	142	276	51												
Milk (Whole, semi-skimmed, skimmed)	999	1,129	89	1,343	1,405	96	1,551	1,631	95	1,546	1,654	93	1,430	1,522	94												
Other milk and cream	61	223	27	48	175	28	48	160	30	63	176	36	54	176	31												
Cheese	91	141	65	113	142	80	102	135	76	112	138	81	106	138	77												
Yogurt & fromage frais	105	349	30	130	365	36	161	409	39	182	433	42	153	401	38												
Eggs and egg dishes	111	232	48	121	188	64	127	183	70	160	208	77	133	197	68												
Fats & oils	80	89	90	78	84	94	84	91	92	97	103	94	86	93	93												
Meat, meat dishes & meat products	1,196	1,256	95	1,140	1,226	93	1,149	1,213	95	1,057	1,094	96	1,125	1,186	95												
Fish and fish dishes	137	257	53	155	246	86	221	299	74	297	357	83	217	304	71												
Vegetables and vegetable dishes (excluding potatoes)	646	665	97	882	894	99	986	993	99	1,069	1,073	100	943	952	99												
Potatoes	814	827	99	690	709	97	713	734	97	759	781	97	734	753	97												
Savoury snacks	87	126	70	69	102	68	49	85	57	25	63	39	52	92	56												
Fruit (excluding fruit juice)	283	493	58	473	641	74	690	844	82	959	1,068	90	666	841	79												
Nuts	6	.. ²	12	16	76	21	16	75	22	15	69	22	15	71	20												
Sugars, preserves & sweet spreads	72	101	72	99	137	72	113	157	72	117	162	72	106	147	72												
Confectionary	111	172	65	86	128	67	86	129	67	60	115	52	82	131	62												
Fruit juice	307	738	42	287	628	46	342	794	43	372	782	47	333	742	45												
Soft drinks, not low calorie	2,193	2,550	86	1,059	1,497	71	651	1,168	56	446	1,007	44	882	1,474	60												
Soft drinks, low calorie	780	1,797	43	1,007	2,079	48	580	1,493	39	384	1,327	29	653	1,680	39												
Alcoholic drinks	2,607	3,461	75	2,562	3,395	75	2,099	2,811	75	1,818	2,574	71	2,193	2,974	74												
Tea, coffee & water ³	4,027	4,165	97	6,183	6,221	99	7,456	7,503	99	8,049	8,101	99	6,892	6,959	99												
Miscellaneous ⁴	281	297	94	353	372	95	372	390	95	429	443	97	373	390	96												
<i>Base = number of respondents</i>				212			430			570			512			1,724											

1. Pasta, rice and other miscellaneous cereals includes pizza
 2. Number of consumers is less than 30 & too small to calculate mean values reliably
 3. Water includes tap water, bottled water, without added sugar or artificial sweeteners. Tea and coffee amounts are as consumed
 4. Includes powdered beverages (except tea & coffee), soups, sauces, condiments & artificial sweeteners

Source:
 The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)
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Table 6.3 Quantities of food consumed in the previous week, by whether someone in the household was receiving certain benefits: men, 2000/01

Great Britain	Grams/Percentages					
	Receiving benefits			Not receiving benefits		
	Mean all	Mean consumers	% consumers	Mean all	Mean consumers	% consumers
Pasta, rice & other miscellaneous cereals ¹	534	604	88	595	670	89
Bread	836	861	97	859	865	99
Breakfast cereals	150	290	52	233	353	66
Biscuits, buns, cakes, pastries & fruit pies	196	253	77	270	324	84
Puddings (including dairy desserts & ice-cream)	111	324	35	154	304	51
Milk (Whole, semi-skimmed, skimmed)	1,405	1,487	95	1,538	1,628	94
Other milk and cream	29	.. ²	23	54	174	31
Cheese	96	139	69	121	152	80
Yogurt & fromage frais	57	.. ²	21	145	414	35
Eggs and egg dishes	163	231	71	156	222	70
Fats & oils	105	110	95	106	112	95
Meat, meat dishes & meat products	1,405	1,437	97	1,398	1,429	98
Fish and fish dishes	195	296	66	222	317	70
Vegetables and vegetable dishes (excluding potatoes)	844	853	99	979	989	99
Potatoes	870	892	97	813	829	98
Savoury snacks	54	122	45	59	104	57
Fruit (excluding fruit juice)	402	678	59	639	821	78
Nuts	16	.. ²	10	17	77	23
Sugars, preserves & sweet spreads	173	215	80	129	171	75
Confectionery	97	168	57	86	141	61
Fruit juice	189	681	28	361	806	45
Soft drinks, not low calorie	1,300	1,928	67	1,040	1,640	63
Soft drinks, low calorie	414	1,137	36	625	1,814	34
Alcoholic drinks	2,090	3,607	58	3,712	4,422	84
Tea, coffee & water ³	6,447	6,685	96	6,902	6,954	99
<i>Base = number of respondents</i>			110			723

1. Pasta, rice and other miscellaneous cereals includes pizza

2. Number of consumers is less than 30 & too small to calculate mean values reliably

3. Water includes tap water, bottled water, without added sugar or artificial sweeteners. Tea and coffee amounts are as consumed

Source:

The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)

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Table 6.4 Quantities of food consumed in the previous week, by whether someone in the household was receiving certain benefits: women, 2000/01

Great Britain	Grams/Percentages					
	Receiving benefits			Not receiving benefits		
	Mean all	Mean consumers	% consumers	Mean all	Mean consumers	% consumers
Pasta, rice & other miscellaneous cereals ¹	534	524	77	595	508	86
Bread	836	544	95	859	583	99
Breakfast cereals	150	217	58	233	275	72
	196	213	73	270	247	87
Biscuits, buns, cakes, pastries & fruit pies						
Puddings (including dairy desserts & ice-cream)	111	206	38	154	257	57
Milk (Whole, semi-skimmed, skimmed)	1,405	1,443	90	1,538	1,439	94
Other milk and cream	29	.. ²	18	54	174	34
Cheese	96	115	63	121	129	78
Yogurt & fromage frais	57	283	28	145	413	46
Eggs and egg dishes	163	160	62	156	172	66
Fats & oils	105	68	87	106	75	92
Meat, meat dishes & meat products	1,405	970	96	1,398	938	91
Fish and fish dishes	195	252	62	222	302	75
Vegetables and vegetable dishes (excluding potatoes)	844	691	97	979	983	99
Potatoes	870	668	94	813	675	97
Savoury snacks	54	85	61	59	78	56
Fruit (excluding fruit juice)	402	633	67	639	908	86
Nuts	16	.. ²	14	17	57	21
Sugars, preserves & sweet spreads	173	171	69	129	104	68
Confectionery	97	117	55	86	119	66
Fruit juice	189	851	39	361	672	49
Soft drinks, not low calorie	1,300	1,459	59	1,040	1,210	55
Soft drinks, low calorie	414	1,180	35	625	1,724	44
Alcoholic drinks	2,090	2,056	55	3,712	1,347	70
Tea, coffee & water ³	6,447	6,424	99	6,902	7,111	99
<i>Base = number of respondents</i>			150			741

1. Pasta, rice and other miscellaneous cereals includes pizza

2. Number of consumers is less than 30 & too small to calculate mean values reliably

3. Water includes tap water, bottled water, without added sugar or artificial sweeteners. Tea and coffee amounts are as consumed

Source:

The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)

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Table 6.5 Quantities of food consumed in the previous week: men, 1986/87 and 2000/01

Great Britain	Grams					
	1986/87 ¹			2000/01 ²		
	Mean all	Mean consumers	% consumers	Mean all	Mean consumers	% consumers
Pasta, rice & other miscellaneous cereals	277	387	72	587	661	89
Bread	935	940	100	856	865	99
Breakfast cereals	163	288	57	222	347	64
Biscuits, buns, cakes, pastries & fruit pies	353	398	89	261	315	83
Puddings (including dairy desserts & ice-cream)	257	392	66	149	306	49
Milk (Whole, semi-skimmed, skimmed)	1,713	1,779	96	1,521	1,609	94
Cheese	134	165	81	118	150	79
Yogurt & fromage frais	60	289	21	134	403	33
Eggs and egg dishes	187	227	82	157	223	70
Fats & oils	151	156	97	106	112	95
Meat, meat dishes & meat products	1,280	1,292	99	1,398	1,430	98
Fish and fish dishes	213	281	76	218	314	70
Vegetables and vegetable dishes (excluding potatoes)	1,046	1,051	99	961	971	99
Potatoes	1,083	1,110	98	821	837	98
Savoury snacks	45	93	49	58	106	55
Fruit (excluding fruit juice)	460	619	74	607	806	75
Nuts	7	60	12	17	81	21
Sugars, preserves & sweet spreads	208	242	86	134	177	76
Confectionery	73	130	56	87	144	61
Fruit juice	257	659	39	339	795	43
Soft drinks, not low calorie	755	1,238	61	1,075	1,680	64
Soft drinks, low calorie	107	934	11	597	1,721	35
Alcoholic drinks	3,654	4,786	76	3,498	4,345	81
Tea & water ³	6,068	6,130	99	4,616	4,902	94
<i>Base = number of respondents</i>			1,087			833

1. Food consumption data from the 1986/87 Adults Survey has been recalculated, and the data for both surveys restructured into specific food groups to allow comparisons to be made. Consequently, there may be small discrepancies between the 1986/87 data as published in 1990. Adults aged 16 to 64

2. Adults aged 19 to 64

3. Water includes tap water, bottled water, without added sugar or artificial sweeteners, coffee is excluded from this table as data between the two surveys on consumption of coffee are not comparable due to differences in dietary recording methodology

Source:

The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)

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Table 6.6 Quantities of food consumed in the previous week: women, 1986/87 and 2000/01

Great Britain	Grams					
	1986/87 ¹			2000/01 ²		
	Mean all	Mean consumers	% consumers	Mean all	Mean consumers	% consumers
Pasta, rice & other miscellaneous cereals	195	281	70	433	511	85
Bread	591	595	99	566	576	98
Breakfast cereals	122	209	59	186	267	70
Biscuits, buns, cakes, pastries & fruit pies	302	331	91	204	242	84
Puddings (including dairy desserts & ice-cream)	199	296	67	135	251	54
Milk (Whole, semi-skimmed, skimmed)	1,456	1,520	96	1,345	1,440	93
Cheese	106	132	81	96	127	75
Yogurt & fromage frais	103	312	33	171	399	43
Eggs and egg dishes	134	172	78	111	170	65
Fats & oils	108	112	97	67	74	91
Meat, meat dishes & meat products	821	841	98	870	943	92
Fish and fish dishes	160	211	76	216	294	73
Vegetables and vegetable dishes (excluding potatoes)	868	872	100	926	935	99
Potatoes	687	703	98	652	674	97
Savoury snacks	37	70	52	45	80	57
Fruit (excluding fruit juice)	540	654	83	720	871	83
Nuts	9	68	13	12	62	20
Sugars, preserves & sweet spreads	121	153	79	79	115	68
Confectionery	75	119	63	76	118	64
Fruit juice	280	565	50	327	697	47
Soft drinks, not low calorie	600	972	62	702	1,254	56
Soft drinks, low calorie	155	793	20	705	1,650	43
Alcoholic drinks	609	997	61	973	1,444	67
Tea & water ³	6,026	6,031	100	5,238	5,519	95
<i>Base = number of respondents</i>			1,110			891

1. Food consumption data from the 1986/87 Adults Survey has been recalculated, and the data for both surveys restructured into specific food groups to allow comparisons to be made. Consequently, there may be small discrepancies between the 1986/87 data as published in 1990. Adults aged 16 to 64

2. Adults aged 19 to 64

3. Water includes tap water, bottled water, without added sugar or artificial sweeteners, coffee is excluded from this table as data between the two surveys on consumption of coffee are not comparable due to differences in dietary recording methodology

Source:

The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)

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Table 6.7 Fruit and vegetable consumption by age and gender, 2005

England	Percentages							
	Total	16-24	25-34	35-44	45-54	55-64	65-74	75+
All adults								
None	6	10	6	7	4	4	4	4
Less than one portion	3	3	3	3	4	2	3	4
1 portion or more but less than 2	15	21	16	16	17	12	10	14
2 portions or more but less than 3	17	20	18	17	15	15	17	17
3 portions or more but less than 4	16	16	13	17	15	16	17	19
4 portions or more but less than 5	15	14	14	13	15	17	17	16
5 portions or more	28	17	29	27	30	33	32	26
Mean units	3.7	3.0	3.8	3.7	3.8	4.1	4.0	3.6
Men								
None	7	12	8	7	5	6	6	5
Less than one portion	3	3	3	2	4	3	3	5
1 portion or more but less than 2	16	19	16	18	19	12	12	14
2 portions or more but less than 3	18	22	20	19	15	16	17	13
3 portions or more but less than 4	15	14	12	16	14	18	16	19
4 portions or more but less than 5	14	12	15	12	15	18	16	14
5 portions or more	26	17	25	27	28	28	31	30
Mean units	3.5	3.0	3.5	3.6	3.6	3.7	3.9	3.7
Women								
None	5	8	4	6	4	3	3	4
Less than one portion	3	2	3	3	4	1	3	4
1 portion or more but less than 2	15	23	16	14	15	12	8	14
2 portions or more but less than 3	17	17	17	16	15	15	17	19
3 portions or more but less than 4	16	17	14	18	15	14	17	19
4 portions or more but less than 5	16	15	14	15	15	16	18	17
5 portions or more	30	17	33	28	32	39	34	23
Mean units	3.8	3.1	4.0	3.7	3.9	4.4	4.1	3.5
Bases								
<i>(weighted)</i>								
All adults	7,627	1,105	1,257	1,466	1,217	1,106	783	693
Men	3,701	563	624	727	605	543	373	266
Women	3,926	541	633	739	612	563	410	426
<i>(Unweighted)</i>								
All adults	7,625	901	1,162	1,369	1,336	1,264	889	704
Men	3,455	421	522	588	615	586	426	297
Women	4,170	480	640	781	721	678	463	407

Source:

Health Survey for England - updating of trend tables to include 2005 data. The Information Centre

Table 6.8 Children's fruit and vegetable consumption by age and gender, 2005

England												Percentages	
	5	6	7	8	9	10	11	12	13	14	15	Total	
All children													
None	2	4	4	4	7	5	5	4	6	12	9	6	
Less than one portion	4	5	4	3	2	4	3	4	4	3	2	3	
1 portion or more but less than 2	17	13	17	21	21	23	21	16	17	25	19	19	
2 portions or more but less than 3	24	25	23	23	21	21	20	24	19	20	20	22	
3 portions or more but less than 4	18	24	25	19	17	20	26	16	22	17	14	20	
4 portions or more but less than 5	14	12	12	13	12	10	12	14	15	10	18	13	
5 portions or more	21	17	15	18	20	17	12	22	19	13	16	17	
Mean units	3.2	3.1	3.3	3.1	3.1	3.0	2.9	3.4	3.4	2.6	2.9	3.1	
Boys													
None	2	8	2	5	11	4	6	4	6	11	8	6	
Less than one portion	3	5	5	4	2	1	3	3	5	2	1	3	
1 portion or more but less than 2	22	14	17	14	19	28	22	21	16	28	22	20	
2 portions or more but less than 3	26	26	22	28	21	15	21	25	18	19	21	22	
3 portions or more but less than 4	14	18	21	23	14	22	29	13	17	21	16	19	
4 portions or more but less than 5	15	12	15	11	11	9	12	14	16	3	17	12	
5 portions or more	18	18	19	14	23	22	7	21	22	16	14	18	
Mean units	3.0	3.0	3.7	2.9	3.1	3.2	2.7	3.4	3.6	2.6	2.8	3.1	
Girls													
None	2	1	6	2	3	6	5	3	5	13	11	5	
Less than one portion	6	5	3	2	2	7	4	4	2	4	3	4	
1 portion or more but less than 2	12	12	18	27	24	18	20	12	17	21	17	18	
2 portions or more but less than 3	22	23	23	17	21	28	19	24	20	22	19	22	
3 portions or more but less than 4	23	30	30	15	20	18	23	19	27	12	13	21	
4 portions or more but less than 5	13	12	9	15	13	11	12	14	13	18	19	14	
5 portions or more	24	17	11	21	17	12	17	23	16	10	18	17	
Mean units	3.4	3.2	2.9	3.3	3.1	2.8	3.1	3.3	3.1	2.6	3.1	3.1	
<i>Bases (weighted)</i>													
All pupils	171	183	179	174	200	182	199	211	184	207	200	2,091	
Boys	85	92	95	89	101	92	104	105	98	109	101	1,070	
Girls	85	92	84	85	99	90	95	106	87	98	100	1,021	
<i>(Unweighted)</i>													
All pupils	184	184	182	177	204	181	205	196	168	180	175	2,037	
Boys	89	83	89	102	115	84	97	96	87	86	80	1,010	
Girls	95	102	93	75	89	97	108	99	81	94	95	1,027	

Source:

Health Survey for England - updating of trend tables to include 2005 data. The Information Centre

Table 6.9 Fruit and vegetable consumption by minority ethnic group and gender, 2004

England	Black caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Percentages	
							Irish	General population
Men								
None	8	8	4	4	6	3	11	8
Less than one portion	2	3	2	3	2	3	3	4
1 portion or more but less than 2	16	16	13	13	14	9	18	16
2 portions or more but less than 3	16	16	15	14	17	15	14	19
3 portions or more but less than 4	14	13	15	15	14	19	15	16
4 portions or more but less than 5	12	14	14	17	17	13	14	14
5 portions or more	32	31	37	33	32	36	26	23
Mean units	3.9	3.7	4.2	4.3	3.8	4.4	3.6	3.3
Women								
None	7	5	3	4	5	1	5	6
Less than one portion	1	2	1	4	5	1	3	3
1 portion or more but less than 2	17	18	9	13	14	10	15	16
2 portions or more but less than 3	18	14	19	17	18	13	17	18
3 portions or more but less than 4	13	14	17	14	17	15	17	16
4 portions or more but less than 5	13	15	15	16	13	17	11	14
5 portions or more	31	32	36	32	28	42	32	27
Mean units	3.9	3.8	4.4	4.0	3.6	4.9	3.9	3.6
<i>Bases (weighted)</i>								
<i>Men</i>	479	377	903	422	178	151	1,776	46,178
<i>Women</i>	675	476	1,067	499	208	163	2,369	48,719
<i>Bases (unweighted)</i>								
<i>Men</i>	412	390	550	432	411	348	497	2,878
<i>Women</i>	652	469	634	508	478	375	656	3,825

Source:

Health Survey for England 2004. The Information Centre

Table 6.10 Household purchases of fruit and vegetables¹, 1975, 1990, 2000 and 2001/02 to 2004/05

United Kingdom	Grams per person per week ²						
	1975	1990	2000	2001/02	2002/03	2003/04	2004/05
Fruit and vegetables excluding potatoes	1,868	2,170	2,336	2,248	2,307	2,269	2,274
Fruit	738	962	1,189	1,156	1,206	1,190	1,168
Fresh fruit	511	624	765	750	794	789	805
Processed fruit	228	338	424	406	413	401	363
Of which - Fruit juices ³ - ml	42	225	332	327	333	322	280
Fresh green vegetables	341	287	246	229	231	228	225
Other fresh vegetables	405	475	506	502	505	505	536
Processed vegetables excluding potatoes	385	446	395	360	365	346	345
Fresh and processed potatoes	1,378	1,199	1,002	907	873	864	822

1. Adjusted National Food Survey data 1975 to 2000, Expenditure and Food Survey data 2001/02 onwards

2. Unless otherwise stated

3. 2004/05 quantities cannot be compared with previous years due to improvements in product coding. The fall in purchased quantity may also be partly due to possible shifts in consumer preference towards fruit juice drinks

Source:

Family Food 2004-05. The Department for Environment, Food and Rural Affairs (DEFRA)

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Table 6.11 Estimates of energy intake, 1974 to 2004

United Kingdom	kcal per person per day									
	1974	1980	1990	1992	1995	2000	2001	2002	2003	2004
National Food Survey										
excluding asc ¹	2,320	2,230	1,870	1,860	1,780	1,750	.	.	.	.
including asc ¹	.	.	.	1,960	1,881	1,881	.	.	.	.
aligned with EFS ²	2,534	2,439	2,058	2,225	2,143	2,152	.	.	.	.
NFS eating out	.	.	.	.	240	230	.	.	.	.
EFS³										
household	.	.	.	.	.	.	2,089	2,099	2,077	2,048
eating out	.	.	.	.	.	.	212	210	205	191
Total	.	.	.	.	.	.	2,301	2,309	2,281	2,239
Combined series⁴										
household	2,534	2,439	2,058	2,225	2,143	2,152	2,089	2,099	2,077	2,048
eating out	.	.	.	.	240	230	212	210	205	191
Total	2,534	2,439	2,058	2,225	2,383	2,382	2,301	2,309	2,281	2,239

1. "asc" is alcoholic drinks, soft drinks and confectionery

2. Includes alcoholic drinks, soft drinks and confectionery from 1992 onwards

3. Expenditure and Food Survey

4. Uses fullest information available each year

Source:

Family Food 2004-05. The Department for Environment, Food and Rural Affairs (DEFRA)

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Table 6.12 Average daily intake of energy and macronutrients and intakes compared with Dietary Reference Values (DRVs), by gender and age¹, 2000/01

Great Britain	Numbers/Percentages									
	Men				All men	Women				All Women
	19-24	25-34	35-49	50-64		19-24	25-34	35-49	50-64	
Total energy intake (MJ)										
Mean (average value)	9.44	9.82	9.93	9.55	9.72	7.00	6.61	6.96	6.91	6.87
% of Estimated Average Requirements ²	89	93	94	92	92	86	82	86	87	85
Protein										
Mean (average value)	77.8	90.6	90.1	88.8	88.2	59.9	58.7	65.1	67.4	63.7
% of RNI ³	140	163	162	166	161	133	131	145	145	140
Total Carbohydrate⁴										
Mean (average value)	273	277	279	269	275	206	196	206	203	203
% of food energy	49.0	47.7	47.5	47.4	47.7	49.1	48.7	48.6	48.1	48.5
Non-starch polysaccharides										
Mean (average value)	12.3	14.6	15.7	16.4	15.2	10.6	11.6	12.8	14.0	12.6
% with intakes < 18g	94	77	70	61	72	96	92	85	80	87
Non-milk extrinsic sugars⁵										
Mean (average value)	96	80	78	70	79	60	49	51	48	51
% of food energy	17.4	13.9	13.1	12.2	13.6	14.2	11.8	11.8	11.0	11.9
Total fat⁵										
Mean (average value)	85.8	87.1	88.3	84.5	86.5	63.9	59.8	61.9	61.2	61.4
% of food energy	36.0	35.8	35.9	35.6	35.8	35.5	35.4	34.7	34.5	34.9
Saturated fatty acids⁶										
Mean (average value)	32.3	32.2	33.4	32.0	32.5	23.5	22.4	23.6	23.7	23.3
% of food energy	13.5	13.2	13.5	13.4	13.4	12.9	13.2	13.2	13.3	13.2
Alcohol										
Mean (all)	20.4	22.2	23.1	21.1	21.9	11.4	9.1	9.2	8.6	9.3
Mean (consumers)	25.6	27.2	27.4	27.5	27.2	16.1	13.2	13.2	12.9	13.5
% of food energy (all)	6.0	6.6	6.8	6.4	6.5	4.6	4.0	3.9	3.7	3.9
% of food energy (consumers)	7.6	8.1	8.1	8.3	8.1	6.4	5.8	5.6	5.4	5.7
Base	108	219	253	253	833	104	210	318	259	891

1. Dietary Reference Values for Food Energy and Nutrients for the United Kingdom. HMSO (London, 1991)

2. Energy intake as a percentage of EAR was calculated for each respondent using the EAR appropriate for gender and age

3. Reference Nutrient Intake values

4. The Dietary Reference Value for total carbohydrate is that the population average intake should contribute 50% to food energy intakes

5. Current recommendation is that intake of non-milk extrinsic sugars should not exceed 11% of food energy

6. The Dietary Reference Value for total fat and saturated fatty acids is that the population average intake should not exceed 11% of food energy intake

Source:

The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)

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Table 6.13 Macronutrient intakes for adults in 1986/87 and 2000/01

Great Britain	Percentages		
	1986/87 ¹	2000/01 ²	Dietary Reference Value (population average)
Men			
Mean daily total energy intake (kcal)	2,450	2,313	2,550 (19-59yrs) 2,380 (60-64yrs)
% food energy from total carbohydrate	44.7	47.7	50%
% food energy from non-milk extrinsic sugars	..	13.6	No more than 11%
% food energy from protein	15.2	16.5	..
% food energy from total fat	40.4	35.8	No more than 35%
	16.5	13.4	No more than 11%
% food energy from saturated fatty acids			
% food energy from trans unsaturated fatty acids	2.2	1.2	No more than 2%
% food energy from cis monounsaturated fatty acids	12.4	12.1	Population average 13%
% food energy from cis n-3 polyunsaturated fatty acids	0.8	1	.
% food energy from cis n-6 polyunsaturated fatty acids	5.4	5.4	.
Women			
Mean daily total energy intake (kcal)	1,680	1,632	1,940 (19-59yrs)
% food energy from total carbohydrate	44.2	48.5	50%
% food energy from non-milk extrinsic sugars	..	11.9	No more than 11%
% food energy from protein	15.6	16.6	..
% food energy from total fat	40.3	34.9	No more than 35%
	17	13.2	No more than 11%
% food energy from saturated fatty acids			
% food energy from trans unsaturated fatty acids	2.2	1.2	No more than 2%
% food energy from cis monounsaturated fatty acids	12.2	11.5	13%
% food energy from cis n-3 polyunsaturated fatty acids	0.8	1	.
% food energy from cis n-6 polyunsaturated fatty acids	5.3	5.3	.

1. Food consumption data from the 1986/87 Adults Survey has been recalculated, and the data for both surveys restructured into specific food groups to allow comparisons to be made. Consequently, there may be small discrepancies between the 1986/87 data as published in 1990. Adults aged 16 to 64
2. Adults aged 19 to 64

Source:

The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)

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Table 6.14 Percentage contribution of food types to average daily energy intakes, 2000/01

Great Britain	Percentages			
	Total energy	Saturated fatty acids	Total fat	Total carbohydrate
Cereals & cereal products	31	18	19	45
Milk & milk products	10	24	14	6
Eggs & egg dishes	2	3	4	0
Fat spreads	4	11	12	0
Meat & meat products	15	22	23	5
Fish & fish dishes	3	2	3	1
Vegetables (excluding potatoes)	4	2	4	4
Potatoes & savoury snacks	9	7	10	12
Fruit & nuts	2	1	2	5
Sugar, preserves & confectionery	6	5	3	9
Drinks ¹	10	1	0	10
Miscellaneous ²	3	3	5	2
Average daily total energy intake (MJ)	8.38	27.8	73.5	273
Total number of respondents	1,724	1,724	1,724	1,724

1. Includes soft drinks, alcoholic drinks, tea, coffee and water

2. Includes powdered beverages (except tea and coffee), soups, sauces, condiments and artificial sweeteners

Source:

The National Diet & Nutrition Survey: adults aged 19 to 64 years old. (NDNS)

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Table 6.15 Expenditure on food and drink in real terms at 2004/05 prices

United Kingdom	£ per person per week						
	1975 ^{1,2}	1985 ^{1,2}	1995 ^{1,2}	2001/02	2002/03	2003/04	2004/05
Retail price index (1975 = 100)	100	277	436	508	519	534	550
Household food and drink	..	..	23.26	23.29	23.22	23.38	23.05
Food and drink eaten out	..	..	7.36 ³	11.56 ³	11.59	11.27	11.26
All food and drink	..	..	30.62	34.85	34.81	34.65	34.31
Household food and drink exc. alcohol	20.94	18.59	21.00	20.65	20.58	20.64	20.39
Food and drink eaten out exc. alcohol	..	..	5.44 ³	7.55 ³	7.64	7.55	7.72
All food and drink exc. alcohol	..	..	26.44	28.20	28.23	28.20	28.11
% eaten out	..	..	21	27	27	27	27

1. Great Britain only

2. Excludes confectionery, soft and alcoholic drinks

3. Whilst National Food Survey household food purchases were adjusted, eating out figures were not

Source:

Family Food 2004-05. The Department for Environment, Food and Rural Affairs (DEFRA)

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Table 6.16 Household food and drink expenditure, 2004/05

United Kingdom	Pence per person per week
Milk and cream	156
Cheese	60
Meat and meat products	494
Fish	99
Eggs	18
Fats and oils	37
Sugars and preserves	17
Potatoes	102
Vegetables (excluding potatoes)	182
Fruit	167
Bread	93
Cereals (excluding bread)	283
Beverages	42
Soft drinks ¹	80
Alcoholic drinks ²	266
Confectionery	84
Takeaways	159

1. Excluding pure fruit juices which are recorded as fruit products

2. Average for whole population

Source:

Family Food 2004-05. The Department for Environment, Food and Rural Affairs (DEFRA)

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7 Health outcomes

Background

Previous chapters have described the rising prevalence of obesity over recent years. Obesity is widely being linked not only with increasing the risk of mortality, but also increasing the risk of many serious diseases. The focus of this chapter is on health outcomes related to being obese. Risks of diseases and death linked to obesity will be discussed in this chapter, using information primarily from the National Audit Office¹ and a House of Commons Select Committee report². Having identified some diseases and illnesses which may develop as a result of being obese, such selected diseases will be explored for their relationship with body mass index. This is based on new analyses using data from the Health Survey for England 2003 (HSE)³.

Various data on hospital admissions related to obesity is presented. This information has been produced by The Information Centre for health social care (The IC) using Hospital Episode Statistics (HES)⁴, based upon a specific International Classification of Diseases Tenth Revision (ICD-10) E66 code as a diagnosis for obesity and Office of Population Censuses and Surveys' Classification of Surgical Operations and Procedures Fourth Revision (OPCS-4) used to define Bariatric Surgery. The data uses finished consultant episodes (FCE) to define admissions for patients treated in NHS hospitals, based on the place of residency of the patient in England. An FCE is defined as a period of admitted patient care under one consultant within one healthcare provider. The figures do not represent the number of patients, as a person may have more than one episode of care within the year.

Data on prescribing drugs used for the treatment of obesity are accessed from the Prescription Pricing Division (PPD) of the Business Services Authority (BSA)⁵. Finally,

an overview of the estimated costs associated with treating obesity and obesity related diseases is given^{1,2}.

Relative risks of diseases

Obesity is an important risk factor for a number of chronic diseases that constitute the principle causes of death, including heart disease, stroke and some cancers. It also contributes to other serious life shortening conditions such as Type 2 diabetes.

Figure 7.1 shows the extent to which obesity increases the risks of developing a number of diseases relative to the non-obese population. For example, an obese woman is almost 13 times more likely to develop Type 2 diabetes, than a women who is not obese. The relative risks are based on a comprehensive review of international literature carried out by the National Audit Office (NAO) to provide the best estimates that could be applied to England (see Appendix A for more details). The basis of the estimates vary due to differences in the methodologies of the studies selected, but the table gives a broad indication of the strength of association between obesity and each of the diseases.

Figure 7.1 Risk factors for obese people developing selected diseases, by gender

England	Numbers	
	Men	Women
Type 2 diabetes	5.2	12.7
Hypertension	2.6	4.2
Myocardial infarction	1.5	3.2
Cancer of the colon	3.0	2.7
Angina	1.8	1.8
Gall bladder diseases	1.8	1.8
Ovarian cancer	.	1.7
Osteoarthritis	1.9	1.4
Stroke	1.3	1.3

Source:

National Audit Office, NAO
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Relative risks of death

In addition to increasing the risk of ill health, obesity also increases the risk of mortality. Evidence suggests that for young adults, the risk of mortality for an obese person is about 50% higher than for someone with a desirable BMI¹. The relationship between relative mortality risk and increasing BMI is strongest until the age of about 50, although the effect of overweight on mortality persists into the ninth decade.

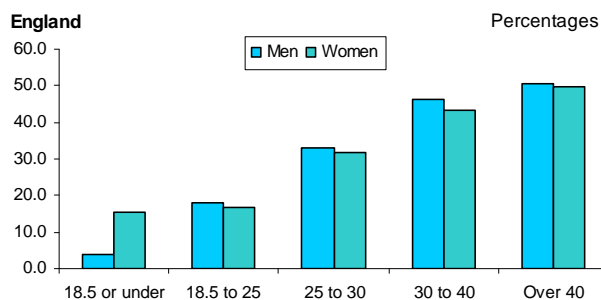
The NAO estimated in 1998 that 30,000 deaths a year in England were attributable to obesity, approximately 6% of all deaths. Around 9,000 of these were premature deaths (i.e. occur before state retirement age). In 2002, research by a House of Commons Select Committee², gave an estimate of 34,100 deaths by applying the latest obesity prevalence rates. This equates to 6.8% of all deaths in England in 2002.

Relationships between obesity prevalence and selected diseases

Data from the HSE 2003 shows that overweight men (BMI between 25 and 30) and obese men (BMI over 30) both had higher prevalence of high blood pressure (32.8% and 46.6%, respectively) than men in the desirable BMI range (18.0%). The same pattern was evident among women where 16.9% of women with a desirable BMI, 31.6% of overweight women and 43.9% of obese women had high blood pressure (Table 7.1 and Figure 7.2).

A relationship between Cardiovascular disease (CVD) and BMI can also be seen for both men and women in Table 7.2. Prevalence of CVD was lowest among those with a desirable BMI (9.6% of men and 9.9% of women) rising to 13.5% of men and 12.8% of women who were overweight and was highest among obese men (16.7%) and women (15.6%).

Figure 7.2 High blood pressure by body mass index (BMI) and gender, 2003

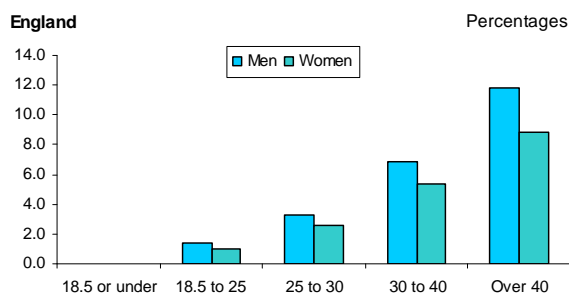


Source: Health Survey for England 2003, The Department of Health Copyright © 2006. Re-used with the permission of the Department of Health

Prevalence of Ischaemic Heart Disease (IHD) shows a similar relationship with BMI as CVD. Prevalence of IHD is lowest among those with a desirable BMI (3.1% of men and 2.1% of women). Among men and women who are overweight, prevalence of IHD rises to 6.8% and 4.2%, respectively (Table 7.3).

Prevalence of Type 2 diabetes (also known as non insulin- dependent or late- onset diabetes) increased with BMI for both men and women. Among men, prevalence was 1.4% among those with a desirable BMI, 3.3% among overweight men and 7.1% among obese men. Similarly for women, 1.0% in the desirable BMI range had Type 2 diabetes, increasing to 2.6% of overweight women and again to 5.8% of obese women (Table 7.4 and Figure 7.3).

Figure 7.3 Prevalence of Type 2 diabetes by body mass index (BMI) and gender, 2003



Source: Health Survey for England 2003, The Department of Health Copyright © 2006. Re-used with the permission of the Department of Health

In 2003, 17.3% of men with a desirable BMI reported a limiting longstanding illness (whereby a longstanding illness limits their

activity in any way) and 18.9% reported a non-limiting longstanding illness. The prevalence for both limiting and non-limiting longstanding illness was higher among men who were overweight (21.9% and 22.5%, respectively). The prevalence of limiting longstanding illness was highest among obese men and women (29.2% and 34.3% respectively) (Table 7.5).

The general health questionnaire consisting of 12 questions (GHQ12) was asked to respondents of the HSE 2003. The prevalence of a high GHQ12 score is indicative of possible psychiatric disorder. Among women, those who are in the morbidly obese group have a significantly higher prevalence of high GHQ12 scores (23.3%) than all groups apart from those underweight (Table 7.6).

Hospital admissions with a diagnosis of obesity

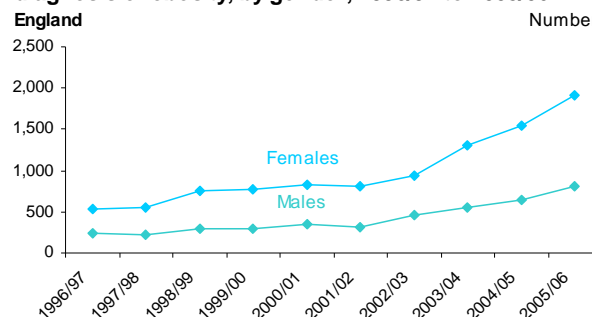
Table 7.7 shows that in 2005/06 there were 2,749 FCEs in England with a primary diagnosis of obesity. This represents a 249% rise in such admissions since 1996/97, when the number of FCEs were 787. Throughout this period, results show that females were more than twice as likely to be admitted to hospital for a primary diagnosis of obesity than males (Figure 7.4). The primary diagnosis is the first of up to 14 (7 prior to 2002-03) diagnosis fields in the HES data set and provides the main reason why the patient was in hospital.

During 2005/06 people aged between 35 to 44 were more likely to be admitted than any other age group, but in 2002/03 and 2004/05, the under 16 age group had the highest number of FCEs with a primary diagnosis of obesity. Between 1996/97 and 2001/02, people aged 35 to 44 were once again more likely to be admitted (Table 7.8).

Among Government Office Regions (GORs) in 2005/06, London and the Yorkshire and Humber GORs recorded the highest number of FCEs with a primary diagnosis of obesity

(561 and 499 respectively), while the East Midlands and South East GORs had the lowest (174 and 175 FCEs respectively) (Table 7.9).

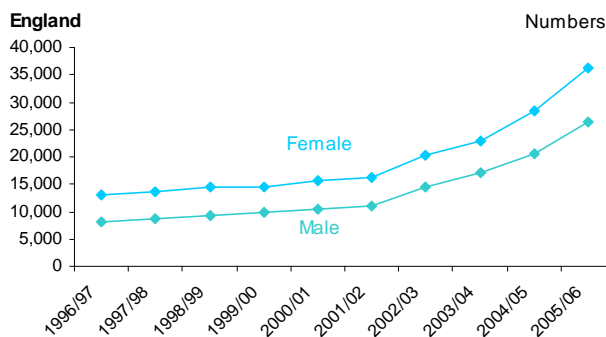
Figure 7.4 Finished consultant episodes with a primary diagnosis of obesity, by gender, 1996/97 to 2005/06



Source: Hospital Episode Statistics, HES. The Information Centre

Focusing now on FCEs where there was a secondary diagnosis of obesity. In 1996/97 there were 21,257 FCEs for such admissions, compared with 62,708 in 2005/06, an increase of 195% (Table 7.10). The results indicate that obesity is more likely to be a secondary factor in an admission, than the primary reason. Similar to admissions for obesity as a primary diagnosis, females are more likely than males to be admitted with a secondary diagnosis of obesity but not to the same extent (Figure 7.5). More than twice as many females than males are admitted with a primary diagnosis of obesity but only a third more females than males are admitted with a secondary diagnosis of obesity.

Figure 7.5 Finished consultant episodes with a secondary diagnosis of obesity, by gender, 1996/97 to 2005/06



Source: Hospital Episode Statistics, HES. The Information Centre

Different patterns in age are seen when focusing on obesity as a secondary diagnosis. Adults aged 55 to 64 years old reported the highest number of FCEs (15,176) with a secondary diagnosis of obesity in 2005/06, followed by those aged 65 to 74 with 13,367 FCE's. All age groups except those aged 16 to 34 have shown at least a doubling in the number of admissions since 1996/97. Unlike with a primary diagnosis of obesity, younger people showed the smallest number of FCEs (Table 7.11).

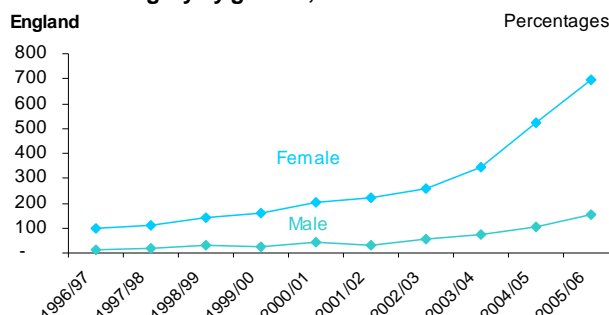
Results of FCEs with a secondary diagnosis of obesity among GORs differed considerably, from those with a primary diagnosis. The North West showed the largest number of FCEs (11,702), with the North East reporting the least number of FCEs (2,975). However, the consistency of reporting secondary diagnoses needs to be kept in mind when considering these data (Table 7.12).

Bariatric Surgery

Bariatric surgery consists of two types of surgery (adjustable gastric banding and gastric bypass) performed on the stomach and/or intestines to limit the amount of food an individual can consume. This surgery is used in the treatment of obesity for people with a BMI above 40, or on people with a BMI between 35 and 40 who have health problems like Type 2 diabetes or heart disease.

In 2005/06, there were 881 FCEs for Bariatric surgery. This compares with 114 FCEs in 1996/97 (almost an eight-fold increase). Females were four times more likely to be admitted to have the surgery than males in 2005/06. For males, there were 13 FCEs for Bariatric surgery in 1996/97, with 154 reported in 2005/06. For females, there were 99 FCEs in 1996/97, compared with 697 in 2005/06 (Table 7.13 and Figure 7.6).

Figure 7.6 Number of Finished Consultant Episodes for Bariatric Surgery by gender, 1996/97 to 2005/06

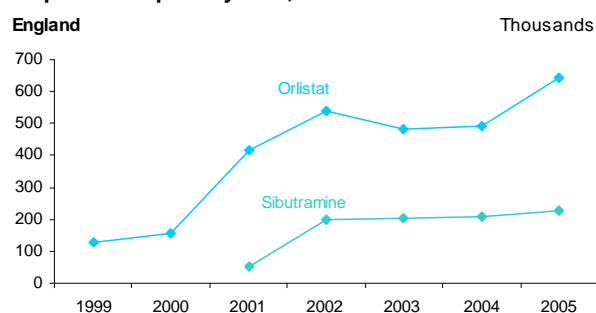


Source: Hospital Episode Statistics, HES. The Information Centre

Prescribing

In 2005, the main drugs prescribed for the treatment of obesity in England in primary care were Orlistat (Xenical), and Sibutramine (Reductil). In 2005, around 645,000 prescription items were dispensed for Orlistat and 226,000 for Sibutramine (Figure 7.7). Orlistat works by reducing the absorption of dietary fat in the intestine, while Sibutramine works in the brain by altering the chemical messages and promotes a feeling of having eaten enough.

Figure 7.7 Number of prescription items for obesity dispensed in primary care, 1999 to 2005



Source: Prescribing Analyses and Cost (PACT) from the Prescription Pricing Division of the Business Services Authority (PPD of the BSA). Copyright © 2006. Re-used with the permission of the Prescription Pricing Division

In 1999, there were 127,000 items prescribed for drugs used in the treatment of obesity, compared to 871,000 prescriptions in 2005. The largest increase in prescriptions was in 2001 when prescriptions for Orlistat increased from 156,000 in 2000 to 415,000. This increase in prescribing is most likely due to the NICE guidance that

was issued in March 2001 for Orlistat and October 2001 for Sibutramine. The NET ingredient cost (NIC) increased from £4.8 million in 1999 to £38 million in 2005, while the NIC per item increased by 16% from £38 to £44 during the same period (Table 7.14).

During the latest period for which data are available (January 2006 to September 2006), there were almost 782,000 prescriptions for drugs used for the treatment of obesity in England. This is a 22% increase over the same period in 2005 (643,000 prescriptions).

Among Strategic Health Authorities in 2005, Greater Manchester SHA had the greatest number of prescriptions of Orlistat and Sibutramine (52,000 and 15,000 respectively). This compares with 8,000 and 4,000 items prescribed in Somerset and Dorset for Orlistat and Sibutramine respectively (Table 7.15).

GP recording of BMI

The new Quality and Outcomes Framework for 2006/07⁶ includes an indicator which relates to obesity: 'the practice can produce a register of patients aged 16 and over with a BMI greater than or equal to 30 in the previous 15 months'. The recording of body mass index for the register will take place in the practice as part of routine care. The underlying data will include the number of patients on the obesity register and number of obese patients as the proportion of the list size. It is expected that this data will inform public health measures. The indicator was included in the Quality and Outcomes Framework (QOF) 1st April 2006. Results for QOF are expected to be available September 2007.

Financial costs

Illness associated with obesity gives rise to costs to the NHS. Direct costs of obesity arise from NHS consultations, drugs and treatment of diseases attributable to obesity. The NAO estimated that the cost of treating

obesity itself was £9.5 million in 1998, while approximately £470 million was spent on treating conditions attributable to obesity. The total cost of £480 million was equivalent to about 1.5% of NHS expenditure for that year. As can be seen, the cost is driven primarily by the costs of treating the diseases attributable to obesity. The most significant costs by far are related to hypertension, coronary heart disease and Type 2 diabetes.

More recent figures, produced for a House of Commons Select Committee report, suggest the direct cost of treating obesity was between £45.8 and £49.0 million in 2002, a large increase compared to the £9.5 million estimated in 1998, largely due to the increase in drug costs and in particular the licensing of orlistat. Estimated costs of treating the consequences of obesity were between £945 million and £1,075 million in 2002. The increase in the estimate is due to a number of reasons, including higher NHS and drugs costs, more detailed and accurate data becoming available, the inclusion of more co-morbidities and the increased prevalence of obesity. Combining these costs gives an estimate between £990 and £1,225 million (between 2.3% and 2.6% of NHS expenditure), more than double the figure estimated in 1998. These figures are still considered to be an underestimate.

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Table 7.1 Blood pressure level¹ by body mass index (BMI) and gender, 2003²

England								Percentages	
	Total	18.5 or under	Over 18.5 to 25	Over 25 to 30	Over 30 to 40	Over 40	Over 25 (overweight including obese)	Over 30 (obese)	
Men									
Normotensive untreated	69.1	96.0	82.0	67.2	53.6	49.5	62.6	53.4	
Normotensive treated ³	5.1	2.1	1.6	5.9	8.5	11.2	6.8	8.6	
Hypertensive treated ³	6.0	0.0	3.0	6.2	10.2	11.5	7.6	10.3	
Hypertensive untreated	19.7	1.9	13.4	20.7	27.7	27.9	23.0	27.7	
All with high blood pressure⁴	30.9	4.0	18.0	32.8	46.4	50.5	37.4	46.6	
Women									
Normotensive untreated	71.9	84.4	83.1	68.4	56.8	50.3	63.4	56.1	
Normotensive treated ³	5.7	2.3	2.8	6.0	11.0	9.2	7.9	10.8	
Hypertensive treated ³	7.1	3.0	3.8	8.2	11.4	12.8	9.6	11.5	
Hypertensive untreated	15.3	10.4	10.3	17.4	20.8	27.8	19.1	21.6	
All with high blood pressure⁴	28.1	15.6	16.9	31.6	43.2	49.7	36.6	43.9	
<i>Unweighted bases</i>									
<i>Men</i>	3,865	37	1,113	1,793	884	38	2,715	922	
<i>Women</i>	4,665	69	1,886	1,607	984	119	2,710	1,103	
<i>Weighted bases</i>									
<i>Men</i>	4,171	50	1,315	1,867	901	38	2,805	938	
<i>Women</i>	4,309	73	1,787	1,447	895	106	2,448	1,002	

1. BP \geq 140/90 mmHg or on treatment

2. See Appendix B for explanations of categories

3. Treated are all those who take drugs that lower blood pressure, irrespective of the reason they were prescribed

4. Those who are hypertensive or on treatment

Source:

Health Survey for England 2003, The Department of Health

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Table 7.2 Cardiovascular disease (CVD)¹ by body mass index (BMI) and gender, 2003

England	Percentages							
	Total	18.5 or under	Over 18.5 to 25	Over 25 to 30	Over 30 to 40	Over 40	Over 25 (overweight including obese)	Over 30 (obese)
Men	12.9	12.8	9.6	13.5	16.7	16.0	14.6	16.7
Women	12.3	14.2	9.9	12.8	16.0	12.5	13.9	15.6
<i>Unweighted bases</i>								
<i>Men</i>	5,958	71	1,872	2,647	1,308	60	4,015	1,368
<i>Women</i>	7,082	134	2,924	2,365	1,455	204	4,024	1,659
<i>Weighted bases</i>								
<i>Men</i>	6,511	92	2,159	2,813	1,382	65	4,259	1,447
<i>Women</i>	6,564	138	2,778	2,141	1,319	188	3,648	1,507

1. Not including diabetes or high blood pressure

Source:

Health Survey for England 2003, The Department of Health

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Table 7.3 Ischaemic Heart Disease (IHD)¹ by body mass index (BMI) and gender, 2003

England								Percentages	
	Total	18.5 or under	Over 18.5 to 25	Over 25 to 30	Over 30 to 40	Over 40	Over 25 (overweight including obese)	Over 30 (obese)	
Men	5.9	4.5	3.1	6.8	8.8	4.5	7.4	8.6	
Women	3.6	4.9	2.1	4.2	5.5	4.7	4.7	5.4	
<i>Unweighted bases</i>									
<i>Men</i>	5,965	71	1,875	2,651	1,308	60	4,019	1,368	
<i>Women</i>	7,089	134	2,930	2,365	1,456	204	4,025	1,660	
<i>Weighted bases</i>									
<i>Men</i>	6,518	92	2,162	2,817	1,382	65	4,263	1,447	
<i>Women</i>	6,569	138	2,782	2,141	1,319	188	3,648	1,508	

1. Heart attack or stroke

Source:

Health Survey for England 2003, The Department of Health

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Table 7.4 Prevalence of Type 2 diabetes by body mass index (BMI) and gender, 2003

England	Percentages							
	Total	18.5 or under	Over 18.5 to 25	Over 25 to 30	Over 30 to 40	Over 40	Over 25 (overweight including obese)	Over 30 (obese)
Men	3.5	0.0	1.4	3.3	6.9	11.8	4.6	7.1
Women	2.6	0.0	1.0	2.6	5.4	8.8	4.0	5.8
<i>Unweighted bases</i>								
<i>Men</i>	5,966	71	1,875	2,651	1,309	60	4,020	1,369
<i>Women</i>	7,090	134	2,930	2,365	1,457	204	4,026	1,661
<i>Weighted bases</i>								
<i>Men</i>	6,519	92	2,162	2,817	1,383	65	4,264	1,447
<i>Women</i>	6,570	138	2,782	2,141	1,320	188	3,649	1,508

Source:

Health Survey for England 2003, The Department of Health

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Table 7.5 Longstanding illness by body mass index (BMI) and gender, 2003

England	Percentages							
	Total	18.5 or under	Over 18.5 to 25	Over 25 to 30	Over 30 to 40	Over 40	Over 25 (overweight including obese)	Over 30 (obese)
Men								
Limiting Longstanding Illness	21.9	12.5	17.3	21.9	29.0	32.3	24.4	29.2
Non limiting Longstanding Illness	21.6	14.9	18.9	22.5	24.0	24.8	23.1	24.0
No Longstanding Illness	56.6	72.6	63.7	55.6	46.9	42.9	52.6	46.8
Women								
Limiting Longstanding Illness	24.5	23.3	19.0	24.7	34.0	36.7	28.7	34.3
Non limiting Longstanding Illness	20.2	16.4	16.9	22.3	23.4	24.3	22.8	23.6
No Longstanding Illness	55.4	60.3	64.1	53.0	42.6	39.0	48.5	42.1
<i>Unweighted bases</i>								
<i>Men</i>	5,964	71	1,874	2,650	1,309	60	4,019	1,369
<i>Women</i>	7,090	134	2,930	2,365	1,457	204	4,026	1,661
<i>Weighted bases</i>								
<i>Men</i>	6,516	92	2,161	2,815	1,383	65	4,263	1,447
<i>Women</i>	6,570	138	2,782	2,141	1,320	188	3,649	1,508

Source:

Health Survey for England 2003, The Department of Health

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Table 7.6 GHQ12¹ score by body mass index (BMI) and gender, 2003

England		Percentages							
	Total	18.5 or under	Over 18.5 to 25	Over 25 to 30	Over 30 to 40	Over 40	Over 25 (overweight including obese)	Over 30 (obese)	
Men									
score 0	66.7	55.3	65.3	68.0	67.2	63.0	67.7	67.0	
score 1-3	22.4	29.7	23.3	21.4	22.4	27.5	21.9	22.7	
score 4+	10.8	15.0	11.4	10.5	10.4	9.6	10.5	10.3	
Women									
score 0	61.3	49.1	60.9	63.0	61.9	53.7	62.1	60.9	
score 1-3	24.4	30.3	24.8	23.8	23.8	23.0	23.8	23.7	
score 4+	14.3	20.6	14.2	13.1	14.3	23.3	14.1	15.4	
<i>Unweighted bases</i>									
<i>Men</i>	5,699	65	1,788	2,534	1,254	58	3,846	1,312	
<i>Women</i>	6,796	130	2,832	2,255	1,387	192	3,834	1,579	
<i>Weighted bases</i>									
<i>Men</i>	6,222	85	2,058	2,690	1,326	63	4,079	1,389	
<i>Women</i>	6,301	134	2,691	2,041	1,257	177	3,475	1,434	

1. See Appendix B for explanation of GHQ12

Source:

Health Survey for England 2003, The Department of Health

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Table 7.7 Finished consultant episodes¹ with a primary diagnosis of obesity, by gender, 1996/97 to 2005/06²

England	Numbers		
	Total ³	Males	Females
1996/97	787	243	538
1997/98	781	221	557
1998/99	1,049	298	749
1999/00	1,073	303	770
2000/01	1,170	343	823
2001/02	1,121	314	802
2002/03	1,406	467	939
2003/04	1,856	560	1,296
2004/05	2,185	636	1,545
2005/06	2,749	811	1,906

1. An FCE is defined as a period of admitted patient care under one consultant within one healthcare provider

2. Figures have not been adjusted for shortfalls in data

3. Includes people where gender was not known or not specified

Source:

Hospital Episode Statistics, HES. The Information Centre

Table 7.8 Finished consultant episodes¹ with a primary diagnosis of obesity, by age group, 1996/97 to 2005/06²

England	Numbers								
	Total ³	Under 16	16 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65-75	75 and over
1996/97	787	139	27	139	176	127	102	44	33
1997/98	781	152	32	117	194	139	67	41	39
1998/99	1,049	209	40	172	259	188	101	48	32
1999/00	1,073	221	34	189	250	189	102	58	30
2000/01	1,170	226	49	164	284	237	112	75	21
2001/02	1,121	243	41	139	264	218	116	68	27
2002/03	1,406	402	65	151	325	246	113	70	34
2003/04	1,856	579	71	187	422	294	192	71	40
2004/05	2,185	550	110	305	520	398	208	51	42
2005/06	2,749	583	96	357	672	599	314	102	24

1. An FCE is defined as a period of admitted patient care under one consultant within one healthcare provider

2. Figures have not been adjusted for shortfalls in data

3. Includes people where age was not known or not specified

Source:

Hospital Episode Statistics, HES. The Information Centre

Table 7.9 Finished consultant episodes¹ with a primary diagnosis of obesity, by Government Office Region of residence and gender, 2005/06²

England	Numbers		
	Total ³	Male	Female
England	2,749	811	1,906
North East	214	64	150
North West	268	102	166
Yorkshire and The Humber	499	112	387
East Midlands	174	37	137
West Midlands	296	86	190
East of England	232	59	173
London	561	189	372
South East	175	54	121
South West	330	108	210

1. An FCE is defined as a period of admitted patient care under one consultant within one healthcare provider

2. Figures have not been adjusted for shortfalls in data

3. Includes people where gender was not known or not specified

Source:

Hospital Episode Statistics, HES. The Information Centre

Table 7.10 Finished consultant episodes¹ with a secondary diagnosis of obesity, by gender, 1996/97 to 2005/06²

England	Numbers		
	Total ³	Male	Female
1996/97	21,257	7,995	13,128
1997/98	22,320	8,597	13,501
1998/99	23,633	9,218	14,400
1999/00	24,480	9,966	14,501
2000/01	25,947	10,322	15,613
2001/02	27,349	11,116	16,226
2002/03	34,701	14,504	20,196
2003/04	40,060	17,036	23,018
2004/05	49,187	20,671	28,514
2005/06	62,708	26,453	36,249

1. An FCE is defined as a period of admitted patient care under one consultant within one healthcare provider

2. Figures have not been adjusted for shortfalls in data

3. Includes people where gender was not known or not specified

Source:

Hospital Episode Statistics, HES. The Information Centre

Table 7.11 Finished consultant episodes¹ with a secondary diagnosis of obesity, by age group, 1996/97 to 2005/06²

England	Numbers								
	Total ³	Under 16	16 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over
1996/97	21,257	425	605	1,916	2,765	4,229	4,575	4,086	2,645
1997/98	22,320	455	535	1,841	2,852	4,560	4,772	4,430	2,861
1998/99	23,633	468	561	1,961	3,071	4,707	5,288	4,612	2,951
1999/00	24,480	518	627	2,037	3,457	5,035	5,258	4,678	2,862
2000/01	25,947	574	657	2,200	3,718	5,201	5,695	4,954	2,892
2001/02	27,349	642	738	2,196	3,766	5,509	6,168	5,342	2,966
2002/03	34,701	754	933	2,415	4,856	6,545	8,279	7,030	3,859
2003/04	40,060	817	1,050	2,600	5,302	7,732	9,703	8,350	4,484
2004/05	49,187	989	1,502	3,550	6,532	8,819	11,462	10,479	5,837
2005/06	62,708	1,174	1,790	4,461	8,169	11,483	15,176	13,367	7,065

1. An FCE is defined as a period of admitted patient care under one consultant within one healthcare provider
2. Figures have not been adjusted for shortfalls in data
3. Includes people where age was not known or not specified

Source:

Hospital Episode Statistics, HES. The Information Centre

Table 7.12 Finished consultant episodes¹ with a secondary diagnosis of obesity, by Government Office Region of residence and gender, 2005/06²

England	Numbers		
	Total ³	Male	Female
England	62,708	26,453	36,249
North East	2,975	1,287	1,688
North West	11,702	4,738	6,963
Yorkshire and The Humber	3,845	1,526	2,319
East Midlands	5,359	1,978	3,381
West Midlands	5,852	2,526	3,324
East of England	7,584	3,169	4,415
London	8,178	3,644	4,531
South East	8,553	3,856	4,697
South West	8,660	3,729	4,931

1. An FCE is defined as a period of admitted patient care under one consultant within one healthcare provider

2. Figures have not been adjusted for shortfalls in data

3. Includes people where gender was not known or not specified

Source:

Hospital Episode Statistics, HES. The Information Centre

Table 7.13 Number of Finished Consultant Episodes¹ for Bariatric Surgery^{2, 3} by gender, 1996/97 to 2004/05⁴

England	Numbers		
	Total ⁵	Male	Female
1996/97	114	13	99
1997/98	133	20	113
1998/99	167	28	139
1999/00	185	25	160
2000/01	243	42	201
2001/02	253	33	219
2002/03	318	58	260
2003/04	419	72	347
2004/05	629	104	521
2005/06	881	154	697

1. An FCE is defined as a period of admitted patient care under one consultant within one healthcare provider

2. The OPCS-4 procedure codes for bariatric surgery are: G30 (Plastic operations on stomach), G31.1 (Bypass of stomach by anastomosis of oesophagus to duodenum), G31.2 (Bypass of stomach by anastomosis of stomach to duodenum), G31.8 (Connection of stomach to duodenum, other specified), G31.9 (Connection of stomach to duodenum, unspecified) G32 (Connection of stomach to transposed jejunum) G33 (Other connection of stomach to jejunum) G38.8 (Other open operations on stomach, other specified).

3. All of the above codes have been accompanied by the ICD-10 code E66.- Obesity - in the primary diagnosis position to ensure that they are bariatric surgery.

4. Figures have not been adjusted for shortfalls in data

5. Includes people where gender was not known or not specified

Source:

Hospital Episode Statistics, HES. The Information Centre

Table 7.14 Number of items, net ingredient cost and average net ingredient cost per item of drugs for the treatment of Obesity prescribed in GP practices in England and dispensed in the community, 1999 to 2006

England	Thousands/£							
	1999	2000	2001	2002	2003	2004	2005	2006 ¹
Prescription Items (thousands)								
Orlistat	127	156	415	540	484	492	645	580
Sibutramine	-	-	53	196	203	208	226	196
Total²	127	157	469	737	688	699	871	782
Net Ingredient Cost (£ 000)								
Orlistat	4,863	6,573	17,575	23,401	21,036	21,391	27,020	24,298
Sibutramine	-	-	2,030	7,752	8,458	9,314	10,984	10,126
Total²	4,863	6,613	19,659	31,203	29,532	30,706	38,004	34,886
Net Ingredient Cost per item (£)								
Orlistat	38	42	42	43	43	44	42	42
Sibutramine	-	-	38	39	42	45	49	52
Total²	38	42	42	42	43	44	44	45

1. Data for 2006 is for the period January 2006 - September 2006 and therefore does not reflect a full year's data

2. Includes 'other' drugs for the treatment of obesity which include Mazindol, Rimonabant, Phentermine and Diethylpropion Hydrochloride

Source:

Prescribing Analyses and Cost (PACT) from the Prescription Pricing Division of the Business Services Authority (PPD of the BSA)

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Table 7.15 Number of items, net ingredient cost and average net ingredient cost per item of drugs for the treatment of Obesity prescribed in GP practices in England and dispensed in the community, by Strategic Health Authority 2005

	thousands/£								
	Prescription Items (thousands)			Net Ingredient Cost (£ thousands)			Net Ingredient Cost per item (£)		
	Total ¹	Orlistat	Sibutramine	Total ¹	Orlistat	Sibutramine	Total ¹	Orlistat	Sibutramine
England²	871	645	226	38,001	27,019	10,982	44	42	49
Avon, Gloucestershire & Wiltshire	38	29	8	1,631	1,224	406	43	42	48
Bedfordshire & Hertfordshire	24	17	8	1,097	711	386	45	42	50
Birmingham & The Black Country	42	31	11	1,883	1,321	562	45	42	51
Cheshire & Merseyside	50	38	12	2,133	1,565	568	43	42	48
County Durham & Tees Valley	25	21	4	1,066	881	184	42	42	45
Cumbria & Lancashire	38	27	11	1,602	1,092	510	42	40	46
Essex	23	15	8	1,022	619	402	44	41	48
Greater Manchester	67	52	15	2,840	2,118	722	43	41	48
Hampshire & Isle of Wight	27	19	8	1,185	786	399	44	42	48
Kent & Medway	32	23	9	1,414	953	461	44	42	49
Leicestershire, Northamptonshire & Rutland	25	20	5	1,092	821	271	43	41	49
North & East Yorkshire, Northern Lincolnshire	28	20	8	1,171	812	359	42	41	45
Norfolk, Suffolk & Cambridgeshire	42	30	12	1,785	1,233	552	43	41	47
North Central London	16	12	5	769	531	239	48	46	52
North East London	20	14	6	955	611	344	48	44	55
North West London	25	18	7	1,159	789	370	47	45	54
Northumberland, Tyne and Wear	29	23	6	1,274	1,002	272	44	44	48
Shropshire & Staffordshire	28	21	7	1,212	864	348	43	41	48
Somerset & Dorset	12	8	4	513	330	183	42	40	46
South East London	23	18	5	1,068	777	290	46	44	53
South West London	20	15	5	884	630	253	45	43	51
South West Peninsula	21	15	6	903	636	266	43	41	46
South Yorkshire	30	25	5	1,253	1,011	242	42	41	48
Surrey & Sussex	35	23	12	1,593	988	605	45	43	50
Thames Valley	26	18	8	1,167	777	390	44	42	49
Trent	57	43	13	2,414	1,781	634	43	41	47
West Midlands South	27	21	6	1,177	892	285	43	42	47
West Yorkshire	40	30	10	1,740	1,262	477	44	42	48

1. The 'Total' column includes 'other' drugs for the treatment of obesity which include Mazindol, Phentermine and Diethylpropion Hydrochloride

2. Including unidentified Doctors (not possible for the PPD of the BSA to allocate to a SHA)

Source:

Prescribing Analyses and Cost (PACT) from the Prescription Pricing Division of the Business Services Authority (PPD of the BSA)
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Appendix A Key sources

Health Survey for England

The Health Survey for England (HSE) comprises of a series of annual surveys of which the 2004 survey is the fourteenth. All of the surveys have covered the adult population aged 16 and over living in private households in England. The HSE is part of a programme of surveys commissioned by the Department of Health, since April 2005, commissioning the survey has been the responsibility of The Information Centre for health and social care and provides regular information on various aspects of the public's health.

Each survey consists of core questions and measurements (e.g. blood pressure and analysis of blood samples) plus modules of questions on specific issues that change periodically such as cardiovascular disease or on specific population groups such as older people or ethnic minorities.

Depending on the subject and content of the chapter, this bulletin uses data from various survey years of the HSE. HSE 2004 is the latest full report available, but 2005 trend tables are available and information from these have been used wherever possible. The full report for 2005 will be published early in 2007. Where there is a focus upon the general population the HSE 2003 survey is used as it contains the largest sample in recent survey years; where the subject is ethnic minority groups, HSE 2004 is used as in this particular year there was an ethnic minority sample boost. In some other chapters, for example Chapter 3 (Obesity among children) certain survey years of the HSE are combined to provide in depth analysis.

From 2003 onwards data was weighted for non-response. Both unweighted and weighted sample sizes are shown in each table from 2003. The weighted numbers reflect the relative size of each group in the population, not numbers of interviews made, which are shown by the unweighted bases.

Data from the HSE are used in Chapter 2, 3, 4, 5, 6 and 7.

Eurostat

Data presented on BMI by European Union (EU) countries, collected by Eurostat uses Health Interview Surveys (HIS). The HIS data are collected in different years depending on the country, ranging from 1996 to 2003. There is no fixed periodicity in these kinds of health surveys. Very few countries have a yearly survey on these topics, therefore data presented in [Table 2.14](#) should be treated with some caution. Data are disseminated simultaneously to all interested parties through a database update and on Eurostat's website.

http://europa.eu.int/estatref/info/sdds/en/hlth/hlth_status_his_base.htm

There are other sources available which present international figures on BMI. A source of such data is the World Health Organisation (WHO). The source of BMI from WHO varies from country to country. The prevalence of obesity among EU countries is broadly similar between Eurostat and WHO.

Data from Eurostat are presented in Chapter 2.

Forecasting Obesity to 2010

The focus of this report is to forecast what levels of obesity in England may be in 2010 if current trends in obesity prevalence continue unchanged. The report is split into three main sections. Section 2 looks at the current picture of overweight and obesity prevalence among children and adults, using data from the Health Survey for England 2003 (HSE 2003). The results present both the prevalence of obesity among the population and also the estimated number of people within the population who are obese. Section 3 uses trend data from HSE to project discernible trends forward to 2010 and analyses these in relation to mid-year population estimates for 2010 to forecast the number and proportion of the population predicted to be obese and overweight. Section 4 looks at the estimated number and proportion of adults and children who may be obese in 2010 within different socio-demographic groups.

Data used from this report are presented in Chapter 2 and 3.

National Travel Survey

The National Travel Survey (NTS) is a survey on personal travel. It provides the Department for Transport, Local Government and the Regions (DTLR) with data to answer a variety of policy and transport research questions. The survey has been running on an ad hoc basis since 1965 and continuously since 1988. The annual sample size is set at 5,796 private addresses in Great Britain (from the year 2000). The NTS 2005 contains weighted data for the first time. Data for 1995 onwards have now been weighted to reduce the effect of non-response bias.

Data from NTS are used in Chapter 4 and 5.

Time Use survey

The UK Time Use Survey is conducted on behalf of a funding consortium consisting of: the Economic and Social Research Council; the Department of Culture, Media and Sport; the Department for Education and Skills; the Department of Health; the Department of Transport, Local Government and the Regions; and the Office for National Statistics.

The main aim of the survey was to measure the amount of time spent by the UK population on various activities. The UK 2000 Time Use Survey was the first time that a major survey of this type has been conducted in the UK and as such provides an opportunity to inform a cross-section of policy areas as well as having interest for academia, social research centres and the advertising and retail sector.

In 2000 the first time use survey was carried out using a combination of questionnaires and diaries. In 2005 a pre-coded time use diary was used to collect the results from adults aged 16 and over as part of the National Statistics Omnibus Survey. The Omnibus diary results are compared with the data collected in the UK 2000 Time Use survey.

Data from the Time Use Survey were used in Chapter 4.

Taking Part Survey

The Department for Culture, Media & Sport (DCMS) and its Non-Departmental Public Bodies (NDPBs) share a common need for quality-assured data on participation, attendance, attitudes and related factors across its sectors. Up-to-date information is needed so that the reach of the

activities sponsored by the DCMS can be measured in order to inform policy and planning. The DCMS's current Public Service Agreements (PSAs) have a significant focus on increasing participation in Arts, Sport, Museums and Heritage, particularly by a range of 'priority groups'. The Taking Part Survey has now become the mechanism for monitoring progress against several of these targets.

The estimates from the survey are provisional, mainly because the final weights will not be applied to the data until the full years data has been gathered; in the interim period temporary weights have been applied. In addition, the figures are based on interviews undertaken over a nine month period, and thus the data may be influenced by the seasonality of data.

Data from the Taking Part Survey are used in Chapter 4.

Active People Survey

The Active People Survey is the largest ever survey of sport and active recreation to be undertaken in Europe. It is a telephone survey of 363,724 adults in England (aged 16 plus) and provides statistics on participation in sport and active recreation for all 354 Local Authorities in England (a minimum of 1,000 interviews were completed in every Local Authority in England). The Active People Survey, conducted by Ipsos MORI on behalf of Sport England, started on the 15th October 2005 and was completed on 16th October 2006. The sample was evenly divided over each month and spread across the whole year for each local authority to ensure the results are not biased by variations associated with different seasons.

The primary objective of the Active People Survey is to measure levels of participation in sport and active recreation and its contribution to improving the health of the nation. Sport and active recreation includes walking and cycling for recreation in addition to more traditional formal and informal sports. When measuring sports participation the survey were concerned with not only the type of activity but also the frequency, intensity and duration.

Headline results from the survey became available on 7th December 2006.

The Active People Survey is described in Chapter 4.

Allied Dunbar National Fitness Survey

The survey was designed to measure the activity and fitness levels of the adult population (aged 16 and over) in England. A representative sample of 6,000 adults were selected at random throughout the country. The fieldwork was carried out between February and November 1990. A total of 4,316 people completed the home interview stage- a response rate of 75%. Seventy per cent of those interviewed took part in a physical appraisal with 62% attending for tests at a specially equipped mobile laboratory and 8%, primarily the elderly and inform, being tested on a recurred set of measurements in their homes.

Many aspects of behaviour, attitudes and beliefs were measured in the home interview. These included:

- Levels of participation in sport and active recreation, current and past, including access to facilities and barriers to participation;
- Physical activity at work, in housework, DIY and gardening and in moving about, that is walking, cycling and stair- climbing;

- Other lifestyle and health- related behaviour, including smoking, alcohol and dietary habits;
- Current health status and history of illness;
- Sports- related injuries;
- Knowledge about exercise and attitudes towards physical activity, fitness and health;
- Psychological variables including well-being, social support, stress and anxiety.

Information on the National Fitness Survey can be found in Chapter 4.

Schools Sports Survey

The Department for Education and Skills (DfES) commissioned Target Nutrient Specifications (TNS), an independent research company, to conduct the third annual survey of school sport in England covering the academic year 2005/06. In total, 16,882 schools within school sport partnerships took part in the survey between May 2006 and July 2006. The survey reports on what over 5 million school children are doing in terms of physical activity, and is the largest survey of its kind in Europe.

School sports partnerships bring primary, special and secondary schools together in a network benefiting from extra staff and funding to increase sports opportunities for pupils. At the time of the 2005/06 survey 80 per cent of schools in England were within a school sports partnership, compared to 62 per cent in 2003/04 and the estimated position of 25 per cent in 2002. All maintained schools are now within a school sports partnership.

Data from the School Sport Survey can be found in Chapter 5.

Expenditure and Food Survey

The Expenditure and Food Survey (EFS) is a combination of the Family Expenditure and the National Food Surveys (FES and NFS). The EFS provides data on spending and food consumption since the 1950s. In 2004-05, around 7,000 households in Great Britain took part in the EFS and was conducted by the Office for National Statistics (ONS).

Historical estimates of household purchases between 1974 and 2000 have been adjusted to align with the level of estimates from the Family Expenditure Survey in 2000. These estimates of household purchases are broadly comparable with estimates of household purchases from the Expenditure and Food Survey which commenced in April 2001.

The aligned estimates are generally higher than the original ones and indicate that the scaling has partially corrected for under-reporting in the National Food Survey. Under-reporting is likely to be lower in the Expenditure and Food Survey because it does not focus on diet but on expenditure across the board and is largely based on till receipts. However it is necessary to be aware that there is a change in methodology which makes the estimate of the year on year change unreliable between 2000 and 2001-02.

Throughout the chapter figures used prior to 2001-02 are adjusted National Food Survey estimates. The adjustments brought the results of the National Food Survey into line with the Expenditure and Food Survey, and tended to increase estimates of food and drink purchases. The largest adjustments were for confectionery, alcoholic drinks, beverages and sugar and preserves. Adjustments for eggs and carcase meat resulted in reduced National Food Survey

estimates. Details of the adjustments to the National Food Survey estimates can be found in Family Food 2002-03.

As this survey collects information on purchases, a wastage estimate has to be used to approximate consumption. Purchases may differ from actual food consumption for a number of reasons eg food may be discarded during preparation, food maybe left on the plate at the end of a meal or food may become inedible before it can be consumed and is thrown away. When average intakes are compared with reference nutrient intakes, a figure of 10% is used for wastage on all types of food and drink. Trends in energy and nutrient content of the purchases are based on a database of nutrient profiles for different types of food which are kept up to date by the Food Standards Agency.

Data from the Expenditure and Food Survey can be found in Chapter 6.

National Diet and Nutrition Survey (NDNS)

The NDNS is a series of cross-sectional surveys of different population age groups. It aims to provide a comprehensive picture of the dietary habits and nutritional status of the population of Great Britain. The results of the surveys are used to develop nutrition policy and to contribute to the evidence base for Government advice on healthy eating. The programme is split into four separate surveys. Each survey has examined a nationally representative sample drawn from four different population age groups: children aged 1½ to 4½ years (fieldwork 1992/93), young people aged 4 to 18 years (1997), adults aged 19 to 64 years (2000/01) and people 65 years and over (1994/95). Each survey collected detailed quantitative information on food consumption and nutrient intake, physical measurements, nutritional status indices and socio-economic, demographic and lifestyle characteristics.

The series covers foods consumed and nutrient intakes derived from analysis of dietary records, nutritional status derived from analysis of blood samples, physical measurements and physical activity.

Following a review of the Food Standards Agency's dietary survey programme in 2002/03 the Agency's Board has agreed to move a rolling programme format for future NDNS, whereby the survey runs continuously and fieldwork is carried out every year. This new approach will strengthen the ability to track trends over time and give more flexibility to respond to policy needs.

The components of the survey

The survey includes various components in order to obtain the wide range of information required. All respondents were eligible to take part in all components, but not all chose to participate in each one.

Dietary interview

Initially a face-to-face dietary interview was carried out with the household member selected to take part in the survey (the respondent), to provide information about their eating and drinking habits, their socio-demographic circumstances (e.g. age and marital status) and the socio-demographic circumstances of their household (e.g. benefit status).

Seven-day weighed intake dietary record

Respondents were also invited to complete a dietary record for seven days. This involved weighing and recording all food and drink consumed both at home and away from home, including medicines taken by mouth and drinks of water. The dietary record collected detailed information in order to look at the range of food consumption and nutrient intake within the population. Food and nutrient intake data could also be related to physical activity and various nutritional status and health measures.

Other components

These included a 24-hour urine collection (used to test for a number of analytes and provide estimates of salt intake); physical measurements (BMI, blood pressure and waist and hip circumferences); a seven-day physical activity record (to allow an investigation of the relationships between dietary intakes, body composition and physical activity levels); and a blood sample (which were analysed for a range of indicators which reflect the levels of certain nutrients available for use in the body).

The information from the dietary record was linked to a nutrient databank and nutrient intakes were calculated from the quantities of foods consumed. No attempt has been made to adjust the nutrient intakes presented here to take account of underreporting.

Data from the National Diet and Nutrition Survey can be found in Chapter 6.

EARs and RNIs

In 1991 the Committee on Medical Aspects of Food and Nutrition Policy (COMA) recommended that population average intakes of different macronutrients should not exceed specified limits. For example the population average intakes of total fat, saturated fatty acids and non-milk extrinsic sugars (principally added sugars) should not exceed 35 per cent, 11 per cent and 11 per cent of food energy respectively.

Energy intake is compared against the Estimated Average Requirement (EAR) for a group. Estimates of energy requirements for different populations are termed EARs and are defined as the energy intake estimated to meet the average requirements of the group. About half the people in the group will usually need more energy than the EAR and half the people in the group will usually need less.

Nutrient intakes derived from surveys are compared with Reference Nutrient Intakes (RNIs). These RNIs represent the best estimate of the amount of a nutrient that is enough, or more than enough, for about 97 per cent of people in a group. If average intake of a group is at the level of the RNI, then the risk of deficiency in the group is very small.

Issues associated with reporting food consumption in dietary surveys

Mis-reporting of food consumption in dietary surveys, generally under-reporting, is known to be a problem in dietary surveys worldwide. Under-reporting can cause biased low estimates of intake as respondents under-report their actual intake or modify their diet during the recording period. The level of under-reporting needs to be borne in mind when interpreting findings from dietary surveys, for example in comparing intakes with recommendations. Analysis of data from the NDNS adults 2000/01 indicated that energy intake could be under-reported by about 25%. It is

not possible to ascertain whether under-reporting was higher in this survey than in the 1986/87 survey because there was no assessment of physical activity or energy expenditure in the earlier survey. Doubly labelled water studies suggest similar levels of under-reporting for other age groups except for pre-school children where levels were lower. There is evidence that under-reporting is selective – fatty, sugary and snack foods and alcohol are more likely to be under-reported than are other foods such as fruit and vegetables. However the level of under-reporting for specific macro and micronutrients is not known.

Tackling obesity in England

In 2001 the National Audit Office (NAO) produced this report which among other subjects, estimated the cost of treating obesity.

Direct costs of obesity were estimated by taking a prevalence-based, cost of illness approach based on extensive literature review and using published data. The cost of treating obesity covers the costs of GP consultations related to obesity, hospital admissions and outpatient attendances and drugs prescribed to help obese patients lose weight. The most recent published data on incidence of these events in England was multiplied by unit costs to calculate a total cost. Prescription costs for obesity were taken from Prescription Cost Analyses reports for England.

The cost of treating the consequences of obesity covered the cost of treating diseases such as coronary heart disease which can be directly attributed to obesity. The cost of treating these diseases was estimated by calculating the relevant population risk proportion. A systematic review of literature was undertaken to establish for each disease, the best data available on the proportion of that disease in the population that was attributable to obesity. This proportion was defined by the relative risk of developing the associated diseases for individuals with obesity compared to the risk for non-obese individuals.

To establish the cost of treating associated diseases in 1998, data on GP consultation rates, hospital inpatient admissions and hospital outpatient attendances were obtained. These were multiplied by unit costs to derive an estimate of the NHS treatment costs for each disease. Prescription costs were taken from Prescription Cost Analyses reports for England. These cost estimates were then applied to the data on relative risk and age and sex specific prevalence of obesity from the HSE to give an estimate of the cost of treating the consequences of obesity.

It is recognised that the direct costs of treating obesity, estimated as £9.5 million in 1998 is probably an under-estimate because the main component of this cost, GP consultations, was based on data from 1991-92 since which obesity prevalence has increased, and no data were available for consultations with practice nurses and dieticians in primary care.

Also, the costs of treating the consequences of obesity is likely to be under-estimated. There are a number of potentially important diseases that were excluded from the analyses because of the lack of data to allow an estimate of the proportion of treatment costs that could be attributed to obesity, for example, depression, hyper-lipidemia and back pain, because no studies were identified in the review that reported the relative risk for obese individuals of developing these conditions. Other limitations of the study are the differing definition of obesity in some of the studies (although no bias was determined), the application of the international studies to the UK population and the cost to other public organisations is not covered eg costs to social services .

Information from Tackling Obesity in England can be found in Chapter 7.

Health Select Committee Report

The Health Select Committee report was published by the House of Commons, in May 2004. It looks at the health implications, trends, causes and what can be done to tackle obesity. The report also looks at the institutional structures needed to deliver such improvements.

Information from this report can be found in Chapter 7.

Hospital Episode Statistics

NHS hospital admissions in England have been recorded using the Hospital Episode Statistics (HES) system since April 1987. Under the HES system, discharges are identified as Finished Consultant Episodes (FCE). A FCE is a period of care under one consultant and patients may experience more than one FCE in a single admission. The figures do not represent the number of patients, as a person may have more than one episode of care within the year. Data in this bulletin are presented in financial years.

HES data are classified using International Classification of Diseases (ICD). The ICD is the international standard diagnostic classification for all general epidemiological and many health management purposes. It is used to classify diseases and other health problems recorded on many types of health and vital records including death certificates and hospital records. The International Classification of Diseases, Tenth Revision (ICD-10), published by the World Health Organisation (WHO) is currently in use.

HES data can be found in Chapter 7.

Prescription Pricing Division

Prescription statistics in this bulletin are for calendar years. All prescription statistics in this bulletin are based on information systems at the NHS Business Services Authority Prescription Pricing Division (NHSBSA (PPD)). The system used is the Prescription Cost Analysis (PCA), which was introduced in January 1991. This system is based on an analysis of all prescriptions dispensed in the community, i.e. by community pharmacists and appliance contractors, dispensing doctors, and prescriptions submitted by doctors for items personally administered.

Data from the Prescription Pricing Division can be found in Chapter 7.

Appendix B Technical notes

Age Standardisation

Some Health Survey for England (HSE) tables in this bulletin have been updated to include the most recent available information and some tables present analyses which have not previously been published. Figures in these tables represent observed values which are weighted for non-response. These tables have not been age-standardised – a method which enables groups to be compared after adjusting for the effects of any differences in their age distributions. Due to timescales involved in this publication and the complexity of the analysis it has not been possible to include corresponding age-standardised figures in the tables. However, we recognise the possible need for producing age-standardised figures and will consider including these in future publications.

Age standardised information for BMI is available in the HSE 2003 publication for the following variables: NS-SEC of household reference person, equivalised household income quintile, and Government Office Region. However, the effect of age standardisation did not change the overall messages in these variables. This information is available at:

http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT_ID=4098712&chk=F4kphd

Further information on overweight and obesity prevalence across SHAs is given in 'HSE: Health and Lifestyle Indicators for Strategic Health Authorities 1994 - 2002'. This includes an age-standardised time series of overweight and obesity prevalence levels by SHA. This publication is available at:

http://www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/HealthSurveyResults/HealthSurveyResultsArticle/fs/en?CONTENT_ID=4077728&chk=5Mjlqy

Body Mass Index

Adults

Overweight and obesity among adults is measured in the Health Survey for England using body mass index (BMI). The mean body mass index is calculated by dividing your weight in kilograms, by your height squared in metres (kg/m²).

$$BMI = \frac{Weight(Kg)}{Height^2(m^2)}$$

Adults are classified into the following BMI groups:

BMI (kg/m ²)	Description
18.5 or less	Underweight
Over 18.5-25	Desirable
Over 25-30	Overweight
Over 30-40	Obese
Over 40	Morbidly obese

Children

Due to differences in growth rates among boys and girls at each age, it is not possible to apply a universal formula in calculating obesity and overweight in children. Each sex and age group therefore needs its own level of classification for obesity. The UK National BMI percentile classification is therefore used which gives a BMI threshold for each age above which a child is considered overweight or obese. Those children whose BMI is above the 85th percentile are classified as overweight and those children whose BMI is above the 95th percentile are classified as obese, compared to 1990 BMI UK reference data. The percentiles are given for each sex and age. According to this method, 15% and 5% of children in 1990 had a BMI above this level and were thus classified as overweight/obese. Increases over 15% and 5% in the proportion of children who exceed the reference 85th/95th percentiles over time indicate an upward trend in the prevalence of overweight and obesity.

This report uses the UK National BMI percentile classification to describe childhood overweight and obesity. As well as the UK National BMI percentile classification, an International classification is also available. The International classification is based on BMI reference data from six different countries around the world (over 190,000 subjects in total aged 0-25 from UK, Brazil, Hong Kong, The Netherlands, Singapore, and the United States). In summary, the BMI percentile curves that pass through the values of 25 and 30 kg/m² (standard cut-off points for overweight and obesity, respectively) at age 18 were smoothed for each national dataset and then averaged. The averaged curves were then used to provide age and sex-specific BMI cut-off points for children and adolescents aged 2 to 18.

NICE guidance

Recent NICE guidance suggests that the measurement of waist circumference should be used in people with a BMI less than 35kg/m² to assess health risks (as shown in the table below).

Assessing risk from overweight and obesity

	Waist circumference		
	Low	High	Very high
Overweight (over 25-30)	No increased risk	Increased risk	High risk
Obesity (over 30-35)	Increased risk	High risk	Very high risk

For men, waist circumference of less than 94cm is low, 94-102cm is high and more than 102cm is very high

For women, waist circumference of less than 80cm is low, 80-88cm is high and more than 88cm is very high

Source:

Quick reference guide 2. National Institute for Health and Clinical Excellence (NICE)

Physical activity among adults

Adults' physical activity in the last four weeks was measured in the Health Survey for England 2003 by examining overall participation, frequency of participation in activities that lasted at least 30 minutes (15 minutes for sports and exercise), and type of activity. Information on the specific

duration of activities was collected for sports and exercise only, while a question related to intensity was asked for sports and exercise and walking only.

Details on three main types of physical activity were asked about in the questionnaire: Home activity (housework, manual/gardening/DIY) that lasted 30 minutes or more. Sports and exercise activities that lasted 15 minutes or more. Walks of 30 minutes or more.

Home activities:

Examples of 'heavy' gardening or DIY work classified as moderate intensity:

Digging, clearing rough ground, building in stone/bricklaying, mowing large areas with a hand mower, felling trees, chopping wood, mixing/laying concrete, moving heavy loads, refitting a kitchen or bathroom or any similar heavy manual work.

Examples of 'heavy' housework classified as moderate intensity:

Walking with heavy shopping for more than 5 minutes, moving heavy furniture, spring cleaning, scrubbing floors with a scrubbing brush, cleaning windows, or other similar heavy Housework.

Examples of 'light' gardening or DIY work classified as light intensity:

Hoeing, weeding, pruning, mowing with a power mower, planting flowers/seeds, decorating, minor household repairs, car washing and polishing, car repairs and maintenance.

Sports and exercise activities

All occurrences of running/jogging, squash, boxing, kick boxing, skipping, trampolining were coded as vigorous. Sports were coded as vigorous intensity if they had made the informant breathe heavily or sweaty, but otherwise coded as moderate intensity including: cycling, aerobics, keep fit, gymnastics, dance for fitness, weight training, football, rugby, swimming, tennis, badminton.

All occasions of a large number of activities including: basketball, canoeing, fencing, field athletics, hockey, ice skating, lacrosse, netball, roller skating, rowing, skiing, volleyball were coded as moderate. Sports were coded as moderate intensity if they had made the informant breathe heavily or sweaty, but otherwise coded as light intensity, including: exercise (press-ups, sit-ups etc), dancing.

All occasions of a large number of activities including: abseiling, baseball, bowls, cricket, croquet, darts, fishing, golf, riding, rounders, sailing, shooting, snooker, snorkelling, softball, table tennis, yoga were coded as light.

In order to create a summary classification, activities have been classified into intensity levels, based on an estimate of the energy cost of the activities. The levels used to record intensity classifications are:

- Vigorous: activities with an energy cost of at least 7.5 kcal/min
- Moderate: activities with an energy cost of at least 5 kcal/min but less than 7.5 kcal/min
- Light: activities with an energy cost of at least 2 kcal/min but less than 5 kcal/min
- Inactive: activities with an energy cost of less than 2 kcal/min

The summary measure of physical activity levels classifies informants according to current physical activity guidelines (which are that adults should take part in five or more occasions per week of activity of at least moderate intensity, of 30 minutes' or more duration). The measure aims to incorporate the basic dimensions of the informant's overall activity level (frequency, intensity and duration). However, the summary variable may underestimate overall activity levels, as the questionnaire only collected information on bouts of activity that lasted 30 minutes or more; and shorter bouts of activity, which may have accumulated to 30 minutes, were not recorded.

The summary activity level classification is as follows:

- High activity: 20 or more occasions of moderate or vigorous activity of at least 30 minutes duration in the last four weeks (at least five days a week). It should be noted that the term 'high' is relative in this context and corresponds to the minimum activity level required to acquire some general health benefits (e.g. reduction in the relative risk for cardiovascular morbidity). However, it does not necessarily indicate larger doses of activity required for optimal cardiovascular fitness or for optimal weight control.
- Medium activity: 4 to 19 occasions of moderate or vigorous activity of at least 30 minutes' duration in the last four weeks (one to five days a week).
- Low activity: Up to three occasions of moderate or vigorous activity of at least 30 minutes' duration in the last four weeks (less than once a week).

Physical activity among children

The HSE 2002 collected details about the out-of-school activity of children aged 2 to 15 in three main categories: sports and exercise, active play and walking. Children aged 8 and over were also asked questions about their participation in housework/ gardening. Activities participated in as part of the school curriculum were excluded. However, any activities carried out on school premises but not as part of school lessons (for example after-school clubs) were covered by the questions asked.

An important limitation of the Health Survey child physical activity module is that no attempt has been made to validate the questions by comparison with objective measures of activity and fitness, such as heart rate monitoring, use of motion sensors or physiological analysis.

Details of the following activities were collected:

- Walking; whether the child had done any continuous walks of at least 5 minutes;
- Housework/gardening (aged 8 and over only); whether the child had done any 'housework or gardening that involved pulling or pushing, like Hoovering, cleaning a car, mowing grass or sweeping up leaves for at least 15 minutes; if so on how many days; and the total duration of Housework/gardening on each of these days;
- Sports and exercise activities; this category included activities such as swimming, football, tennis, gymnastics, and was intended to cover more 'organised' or structured sporting activities;
- Active play; defined as 'active things like ride a bike, kick a ball around, run about, play active games, jump around'.

The HSE 2002 also presented participation in the different types of activity summarised into a frequency-duration scale, by taking account of the average time spent participating in physical activities, and the number of active days in the last week. There are some limitations as no

activity intensity information was collected and therefore it is assumed that all occurrences of these activity types are of at least moderate intensity.

The summary physical activity levels categories are as follows:

- Group 3 'high': active for 60 minutes on 7 days in the last week. Assuming that all reported activities were of at least moderate intensity, this group refers to those children who met the recommended level of physical activity.
- Group 2 'medium': active for 30-59 minutes on 7 days in the last week. Group 2 represents those achieving the lower recommended level which is at least 30 minutes (but less than an hour) of at least moderate intensity per day. The same intensity assumption highlighted above applies here.
- Group 1 'low': active at a lower level or not active at all. This group refers to children who did not meet either of the physical activity guidelines.

In Chapter 5, [Table 5.2](#) presents the number of days children participated in each activity type, including those who reported that they did not participate in the given activity. Table 5.2 includes a summary category: 'Number of days any physical activities'. This adds together the number of days on which sports and exercise (any length), active play (any length), housework/gardening (at least 15 minutes) and walking (at least 5 minutes) was done. It should be noted that this summary would over-estimate the actual number of days on which a child was active, as it assumes that each activity was done on a different day. So, for example, if a child had done sports and exercise and active play on the same day, this would get counted as 2 days of activity in the summary category. For this reason, the number of days' participation was capped at 7. So, an informant who had participated in sports and exercise on 5 days and active play on 5 days (10 days in total) would be counted as having participated on 7 days when calculating the summary variable.

Active sport

The Department for Culture, Media and Sport Public Service Agreement (PSA) and the Taking Part Survey define the following as active sports: swimming or diving; BMX, cyclo-cross, mountain biking; cycling; bowls; tenpin bowling; health, fitness, gym or conditioning activities; keepfit, aerobics, dance exercise; judo; karate; taekwondo; other martial arts; weight training; weightlifting; gymnastics; snooker, pool, billiards; darts; rugby league and union; American football; football; Gaelic sport; cricket; hockey; archery; baseball/softball; netball; tennis; badminton; squash; basketball; table tennis; track and field athletics; jogging, cross-country, road running; angling or fishing; yachting or dingy sailing; canoeing; windsurfing or boardsailing; ice skating; curling; golf, pitch and putt, putting; skiing; horse riding; climbing/mountaineering; hill trekking or backpacking; motor sports; shooting; volleyball; orienteering; rounders; rowing; triathlon; boxing; waterskiing; lacrosse; yoga; fencing; and other types of sport for example roller-blading, street hockey, skateboarding, water polo, surfing, scuba diving, gliding, hang/paragliding, parachuting or parascending. Also included are in the valid activities which are recorded in the 'other sports' category. Walking is excluded from the active sport target

Moderate intensity sport

Moderate intensity level sport, includes all of the activities listed under active sports except snooker, pool, billiards; darts; archery; angling or fishing; shooting; and yoga. This target also includes recreational walking. The definition of moderate intensity is also used by the DCMS PSA target and the Taking Part Survey.

Fruit and Vegetable portions

Fruit and vegetable consumption is measured in portions, using guidelines specified in the '5 a day' programme. The Government recommends that people should eat 5 portions of fruit and vegetables a day. Five portions are defined as 400g of fruit and vegetables per day, an average of 80g per portion. A variety of foodstuffs represent a portion, including vegetables (fresh, frozen, canned), vegetables in composite dishes, salads, pulses, fruit (fresh, frozen, canned, dried), fruit in composites and fruit juice. Below is a table showing different portions of fruit and vegetables:

Food item	Portion size
Vegetables (fresh, raw, tinned and frozen)	3 tablespoons
Pulses	3 tablespoons
Salad	1 cereal bowl
Vegetables in composites, such as vegetable chilli	3 tablespoons
Very large, fruit such as melon	1 average slice
Large fruit, such as grapefruit	Half a fruit
Medium fruit, such as apples	1 fruit
Small fruit, such as plums	2 fruits
Very small fruit, such as blueberries	2 average handfuls
Dries fruit	1 tablespoon
Frozen fruit/ canned fruit	3 tablespoons
Fruit in composites, such as stewed fruit	3 tablespoons
Fruit juice	1 small glass (150ml)

Index of Multiple Deprivation

The overall Index of Multiple Deprivation 2004 (IMD2004) is a composite index of relative deprivation at small area level, based on seven domains of deprivation: income; employment; health deprivation and disability; education, skills and training; barriers to housing and services; crime and disorder; and living environment. The levels of deprivation are:

IMD2004: Index of multiple deprivation (quintiles)

- 1 Least deprived (0.55 - 9.015)
- 2 (9.016 – 14.148)
- 3 (14.148 – 21.169)
- 4 (21.173 – 33.532)
- 5 Most deprived (33.532 – 85.868)

Chapter 3 (Obesity among children) analyses the relationship between obesity and IMD, uses a combination of three year surveys. Please note that in 2002 the IMD focused on six characteristics, and in 2003 and 2004 it focused on seven. In 2002 these were income; employment; health deprivation and disability; education, skills and training; housing and geographical access to services. In 2003 and 2004 the characteristics were income; employment; health deprivation and disability; education, skills and training; barriers to housing and services; crime and living environment.

Blood pressure

The levels of blood pressure used to define hypertension in HSE 2003 are in accordance with the latest guidelines on hypertension management. To compute the prevalence of hypertension, adult informants were classified in one of four groups on the basis of their SBP (systolic blood

pressure) and DBP (diastolic blood pressure) readings and their current use of anti-hypertensive medication.

- Normotensive-untreated SBP<140 mmHg and DBP<90 mmHg , not currently taking drug specifically prescribed to treat their high blood pressure
- Normotensive-treated SBP<140 mmHg and DBP<90 mmHg, currently taking drug specifically prescribed to treat their high blood pressure
- Hypertensive-treated SBP_140 mmHg and DBP_90 mmHg, currently taking drug specifically prescribed to treat their high blood pressure
- Hypertensive-untreated SBP_140 mmHg and DBP_90 mmHg, not currently taking drug specifically prescribed to treat their high blood pressure

The last three categories together are considered as 'hypertensive' for the purpose of this report. The definition of hypertension used for clinical purpose talks about 'sustained' levels of high blood pressure, while HSE only measures blood pressure at one point in time. This needs to be taken into account when interpreting the results.

General Health Questionnaire

The General Health Questionnaire (GHQ12) is a measure of psychological well-being. This questionnaire consists of twelve questions concerning general level of happiness, depression, anxiety and sleep disturbance over the past few weeks. As in previous Health Surveys, a score of 4 or more was used as the threshold to identify informants with possible psychiatric disorder, and is referred to as a 'high GHQ score'.⁴ Perceived social support was measured by seven questions regarding the quality of relationships with family and friends. These were also asked in self-completion format.

Appendix C Government and NHS plans

Obesity

Public Service Agreement

- Halt the year-on-year rise in obesity among children aged under 11 by 2010 in the context of a broader strategy to tackle obesity in the population as a whole.

The target is jointly shared by the Department of Health, the Department for Culture Media and Sport and the Department for Education and Skills in recognition that delivery will depend upon a concerted, joined-up effort across government and at local level.

http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/Obesity/ObesityArticle/fs/en?CONTENT_ID=4133951&chk=RfCXNp

The obesity PSA is being delivered by a number of Government initiatives.

White Paper

The Government's White Paper Choosing Health: Making Healthier Choices Easier was published in November 2004. It set out how the Government will make it easier for people to make healthier choices by offering them practical help to adopt healthier lifestyles. Choosing Health laid out a challenge programme of practical action aimed at saving thousands of lives in years to come. Tackling health inequalities will be central to successful delivery and targeted support will be offered in communities with the worst health and deprivation.

The White Paper sets out a comprehensive plan of action on physical activity, diet, personalised support, information and curbs on marketing, which gives a strong foundation for tackling obesity. The White Paper delivery plan (Delivering Choosing Health), together with discrete plans focusing on nutrition (Choosing a Better Diet) and Physical Activity (Choosing Activity) set out how the White Paper commitments will be delivered.

<http://www.dh.gov.uk/assetRoot/04/10/57/13/04105713.pdf>

Obesity and Social Marketing Campaign

The Obesity Social Marketing Campaign was launched in Autumn 2006 and is aimed at improving the healthiness of people's lifestyles in the areas of diet and physical activity. It will be delivered in partnership with wide range of organisations including food and leisure industries.

The team responsible are currently developing a 10-year programme of national activity which will begin at the end of 2006. The 10-years are being divided in 3. The first 3-years, 2007-2010, will focus on children aged between 2-10, and importantly their parents and carers. The period 2010-2013 will use the platform of the 2012 Olympics to provide inspiration for a fitter Britain, and the final stage 2013-2016 is still under consideration.

NICE guidance (obesity)

The National Institute for Health and Clinical Excellence (NICE) and the National Collaborating Centre for Primary Care (NCC-PC) have recently published guidance on the prevention, identification, assessment, treatment and weight management of overweight and obesity in adults and children.

The guidance is intended to provide recommendations on the clinical management of overweight and obesity in the NHS. It will also provide guidance on primary prevention approaches aimed at supporting adults and children to maintain a healthy weight. The latter will include advice as to what can be done in schools, in the workplace and in the wider community.

The guidance was published December 2006 and can be accessed on the NICE website.

<http://www.nice.org.uk/guidance/CG43>

Obesity Bulletin (DH)

This bulletin updates on the Obesity PSA target and delivery strategy, and highlights good practice. The Obesity Bulletin will be published twice yearly as part of the government's obesity programme.

http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/Obesity/ObesityArticle/fs/en?CONTENT_ID=4134457&chk=FVby%2BI

Physical activity

Public Service Agreements

- Enhance the take-up of sporting opportunities by 5 to 16 year olds so that the percentage of school children in England who spend a minimum of two hours each week on high quality PE and school sport within and beyond the curriculum increases from 25% in 2002 to 75% by 2006 and to 85% by 2008, and to at least 76% in each School Sport Partnership by 2008. This is a joint target between Department for Education and Skills (DfES) Department for Culture, Media and Sport (DCMS).

- By 2008, increase the take-up of cultural and sporting opportunities by adults and young people aged 16 and above from priority groups, by:
 - Increasing the number who participate in active sports at least twelve times a year by 3%, and increasing the number who engage in at least 30 minutes of moderate intensity level sport, at least three times a week by 3%. Department for Culture, Media and Sport (DCMS) PSA target.

Choosing activity: a physical activity action plan

Choosing activity: a physical activity action plan was published in March 2005 and sets out Government's plans to encourage and co-ordinate the action of a range of departments and organisations to promote increased participation in physical activity across England. It is a summary of the Government will deliver the commitments on physical activity presented in the public health white paper Choosing Health: making healthier choices easier. It brings together all the commitments relating to physical activity in Choosing Health as well as other action across government, which will contribute to increasing levels of physical activity. These include school PE and sport and local action to encourage activity through sport, transport plans, the use of green spaces and by the NHS providing advice to individuals on increasing activity through the use of pedometers.

<http://www.dh.gov.uk/assetRoot/04/10/57/10/04105710.pdf>

National Service Framework for Coronary Heart Disease

The National Service Framework for Coronary Heart Disease (NSF CHD), published in March 2000, set out a strategy to modernise CHD services over ten years. It details 12 standards for improved prevention, diagnosis, treatment and rehabilitation and goals to secure fair access to high quality services. The NSF CHD required that all NHS bodies will have agreed and be contributing to the delivery of a local programme of effective policies on increasing physical activity.

http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/CoronaryHeartDisease/CoronaryArticle/fs/en?CONTENT_ID=4108602&chk=nf93gd

NICE guidance

In March 2006 the National Institute for Health and Clinical Excellence (NICE) published physical activity public health intervention guidance concerning four common methods used to increase individual physical activity levels. On the basis of its review of the available evidence, NICE recommended that primary care practitioners should take the opportunity, whenever possible, to identify inactive adults and advise them to aim for 30 minutes of moderate activity on 5 days of the week (or more).

<http://www.nice.org.uk/guidance/PHI2/?c=296726>

Diet

Choosing Health? Choosing a Better Diet

'Choosing Health? Choosing a Better Diet' was published in Spring 2004 and sets out nutritional priorities in England. Improving health and narrowing health inequalities are priorities for the Government. However, although there is much Government can do to maximise opportunities for people to enjoy better health, these are issues for society as a whole. The NHS and other public

bodies, local government, the voluntary and community sector, individuals, communities, the food industry, employers and the media all have a role to play.

The nutritional priorities, for the population of England as a whole, are:

- increase average consumption of a variety of fruit and vegetables to at least 5 portions per day (currently 2.8 portions per day);
- increase the average intake of dietary fibre to 18 grams per day (currently 13.8 grams per day);
- reduce average intake of salt to 6 grams per day (currently 9.5 grams per day);
- reduce average intake of saturated fat to 11% of food energy (currently at 13.3%);
- maintain the current trends in reducing average intake of total fat to 35% of food energy (currently at 35.3%); and
- reduce the average intake of added sugar to 11% of food energy (currently 12.7%).

http://www.dh.gov.uk/Consultations/ClosedConsultations/ClosedConsultationsArticle/fs/en?CONTENT_ID=4084430&chk=IRO27F

Improving diet and nutrition

Poor nutrition leads to low birth weight and poor weight gain in the first year of life, which in turn contributes to the later development of disease, particularly heart disease. Increasing fruit and vegetable consumption is considered the second most effective strategy to reduce the risk of cancer, after reducing smoking, and it has major preventive benefits for heart disease too. Eating at least five portions of fruit and vegetables a day could lead to estimated reductions of up to 20% in overall deaths from chronic diseases. In the UK, average consumption is only about three portions a day, and a fifth of children eat no fruit in a week. Information is important, but the food choices people can make are shaped by the availability and affordability of food locally.

People make their own choices about what to eat. The role of Government is to ensure people have information and proper access to healthy food wherever they live. Government priority is to reduce the level of saturated fat and salt in the diet to maintain a balance between energy intake and expenditure and to increase the consumption of dietary fibre and fruit and vegetables. Several programmes are being undertaken to improve the nutritional quality of the diet such as working with industry to reformulate processed foods to reduce levels of saturated fat and salt, the 5 A DAY campaign to increase the consumption of fruit and vegetables and restricting the promotion of foods high in fat, salt and sugar to children and strategies to maintain energy balance.

http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAmpGBrowsableDocument/fs/en?CONTENT_ID=4112374&MULTIPAGE_ID=5207943&chk=BZ5O%2BP

Our objective on diet is to meet the COMA (Committee on Medical Aspects of Food and Nutrition Policy) and SACN (Scientific Advisory Committee on Nutrition) recommendations – no more than 35% of energy from fat, no more than 11% from saturated fat, no more than 11% from non-milk extrinsic sugar and no more than 6g of salt per day.

School Food Trust

The School Food Trust was established by the Department for Education and Skills in September 2005. Its remit is to transform school food and food skills, promote the education and health of children and young people and improve the quality of food in schools.

<http://www.schoolfoodtrust.org.uk/index.asp>

Appendix D Editorial notes

For the purpose of clarity, figures in the bulletin are shown in accordance with the Information Centre publication conventions.

These are as follows:

- . not applicable
- .. not available
- zero
- 0 less than 0.5

Numbers greater than or equal to 0.5 are rounded to the nearest integer. Totals may not sum due to rounding.

Appendix E Further information

This new bulletin (published 20th December 2006) draws together statistics on obesity, physical activity and diet. It is expected the next bulletin will be published in 2007. This bulletin forms part of a suite of statistical reports. Other bulletins cover drug use among young people, alcohol and smoking.

Constructive comments on this bulletin would be welcomed. Any questions concerning any data in this publication, or requests for further information, should be addressed to:

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LS1 6AE
Telephone: 0845 300 6016
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Requests for hard copies of this publication can also be made from the Contact Centre.

This bulletin is available on the internet at:

www.ic.nhs.uk/pubs/obesity

Securing Good Health for the Whole Population

Derek Wanless' first report 'Securing our Future Health: Taking a Long-Term View' was published in April 2002. This identified three scenarios for meeting the long-term financial and resource needs of the NHS for the next two decades, to 2022. In its response to the report, the Government announced that it would address the 'fully engaged' scenario identified by Mr Wanless. Under this scenario the level of public engagement in relation to health is high, life expectancy goes beyond current forecasts, health status improves dramatically, use of resources is more efficient and the health service is responsive with high rates of technology uptake. The scenario envisaged delivery of better health outcomes at less cost than the others considered.

In April 2003, the Prime Minister, the Chancellor and the Secretary of State for Health asked Derek Wanless, ex-Group Chief Executive of NatWest, to provide an update of the challenges in implementing the fully engaged scenario set out in his report on long-term health trends. Derek Wanless' final report "Securing Good Health for the Whole Population" was published on 25th February 2004.

www.hm-treasury.gov.uk/consultations_and_legislation/wanless/consult_wanless04_final.cfm

Primary Care Management of Adult Obesity – Dr Foster

The aim of the report Primary Care Management of Adult Obesity, published by Dr Foster, is to examine the degree to which Primary Care Organisations (PCOs) across the UK are currently tackling the problem of obesity.

www.drfooster.co.uk/library/reports/obesityManagement.pdf

International Obesity TaskForce

The International Obesity TaskForce (IOTF) is a global network of expertise, a research-led think tank and advocacy arm of the IOTF. The IOTF is working to alert the world to the growing health crisis threatened by soaring levels of obesity. It works with the World Health Organization, other NGOs and stakeholders to address this challenge.

www.iotf.org

Association for the Study of Obesity

The Association for the Study of Obesity (ASO) was founded in 1967 and is the UK's foremost organisation dedicated to the understanding and treatment of obesity. The ASO has three key objectives:

- To promote professional awareness of obesity and its impact on health.
- To educate and disseminate recent research on the causes, consequences, treatment, and prevention of obesity
- To prioritise obesity and provide opinion leadership in the UK.

<http://www.aso.org.uk/portal.asp>

Scientific Advisory Committee on Nutrition

The Scientific Advisory Committee on Nutrition (SACN) is an advisory Committee of independent experts that provides advice to the [Food Standards Agency](#) and [Department of Health](#) as well as other Government Agencies and Departments. Its remit includes matters concerning nutrient content of individual foods, advice on diet and the nutritional status of people.

www.sacn.gov.uk/

World Health Organisation

The World Health Organisation (WHO) have created a global database on BMI. This database provides both national and sub-national adult underweight, overweight and obesity prevalence rates by country, year of survey and gender. The information is presented interactively as maps, tables, graphs and downloadable documents.

www.who.int/bmi/index.jsp

The General Household Survey 2002

The General Household Survey (GHS) is a multi purpose continuous survey carried out by the Office of National Statistics (ONS) which collects information on a range of topics from people living in households in Great Britain. The survey started in 1971. The General Household Survey 2002 module Sport and leisure contains further useful information on the participation of adults (aged 16 and over) in a wide range of sport and leisure activities.

www.statistics.gov.uk/LIB2002/default.asp

Tackling child obesity

This report is based on a joint study conducted by the Audit Commission, the Healthcare Commission and the National Audit Office, one of a series that looks at the “delivery chains” between important national policy intentions (set out in government departments’ Public Service Agreement targets agreed with HM Treasury) and local delivery.

www.nao.org.uk/publications/nao_reports/05-06/0506801.pdf

Annual Report of the Chief Medical Officer

Over the last 150 years, annual reports have been published by the Chief Medical Officer, almost every year. These reports provide an important record of the nation's health and the major challenges faced by government in tackling the main problems. In the last twenty years or so, the annual report has also provided detailed accounts of a wide range of initiatives taken by the government on public health and in the National Health Service.

www.dh.gov.uk/PublicationsAndStatistics/Publications/AnnualReports/AnnualReportsBrowsableDocument/fs/en?CONTENT_ID=4094860&MULTIPAGE_ID=4872600&chk=nk2/wx

Food Standards Agency

The Food Standards Agency (FSA) is an independent Government department set up by an Act of Parliament in 2000 to protect the public's health and consumer interests in relation to food. The FSA provides advice and information to the public and Government on food safety from farm to fork, nutrition and diet. It also protects consumers through effective food enforcement and monitoring. Although the FSA is a Government agency, it works at 'arm's length' from Government because it doesn't report to a specific minister and is free to publish any advice it issues.

<http://www.food.gov.uk/>

5-a-day

The 5-a-day website provides lots of useful information and resources for health professionals as well as the general public about healthy eating and fruit and vegetable consumption

<http://www.5aday.nhs.uk/>

School fruit and vegetable scheme

Under the Scheme, all four to six year old children in LEA (Local Education Authority) maintained infant, primary and special schools are now entitled to a free piece of fruit or vegetable each school day. It was introduced after the NHS Plan 2000 included a commitment to implement a national school fruit scheme by 2004.

http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4002830&chk=DT%2BQpP

SEPHO

The South East Public Health Observatory (SEPHO) is one of nine regional Observatories throughout England and Wales and is a member of the Association of Public Health Observatories (PHO). SEPHO's aim is to improve health and reduce inequalities in the South East region by providing information and support to local organisations, partners and stakeholders.

As part of the PHO Choosing Health series, the report Choosing Health in the South East: Obesity defines obesity and overweight, its causes and impacts on health, and looks at this issue as it varies with geography, age, gender, ethnicity, etc. It also discusses obesity and overweight in children and interventions.

<http://www.sepho.org.uk/Download/Public/9783/1/SEPHO%20obesity%20report%20Nov%2005.pdf>

<p>Statistics on Obesity, Physical Activity and Diet: England, 2006 Price: Free</p>	<p>Published by the Information Centre Part of the Government Statistical Service</p> <p>ISBN: 1-84636-094-3 Bulletin: N/A</p> <p>This publication may be requested in large print or other formats. For further information contact: online: www.ic.nhs.uk telephone: 0845 300 6016 email: enquiries@ic.nhs.uk</p> <p>Copyright © 2006, The Information Centre, Lifestyle Statistics. All rights reserved</p>
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