



Health Survey for England

2011

Health, social care and lifestyles

Summary of key findings

A survey carried out on behalf of the Health and Social Care Information Centre

Joint Health Surveys Unit

NatCen
Social Research that works for society



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2 **Introduction**

5 **Social care**

7 **Health and lifestyle factors among adults**

7 Cardiovascular disease

8 Hypertension

10 Diabetes and hyperglycaemia

11 Chronic pain

12 Drinking patterns

13 Drinking diary

14 Anthropometric measures, overweight and obesity

16 Well-being

17 Healthy Foundations segmentation

19 **Obesity among children**

19 BMI, overweight and obesity

20 Perceptions of children's weight

21 **Contact points**

Introduction

The Health Survey for England

The Health Survey for England (HSE) is part of a programme of surveys commissioned by the Health and Social Care Information Centre. It has been carried out since 1994 by the Joint Health Surveys Unit of NatGen Social Research and the Research Department of Epidemiology and Public Health at UCL (University College London). The study provides regular information that cannot be obtained from other sources on a range of aspects concerning the public's health and many of the factors that affect health. The series of Health Surveys for England was designed to monitor trends in the nation's health, to estimate the proportion of people in England who have specified health conditions, and to estimate the prevalence of certain risk factors and combinations of risk factors associated with these conditions. The survey is also used to monitor progress towards selected health targets.

Each survey in the series includes core questions and measurements (such as blood pressure, anthropometric measurements and analysis of blood and saliva samples), as well as modules of questions on specific issues that vary from year to year. In some years, the core sample has also been augmented by an additional boosted sample from a specific population subgroup, such as minority ethnic groups, older people or children; there was no boost in 2011.

This is the twenty first annual Health Survey for England. All surveys have covered the adult population aged 16 and over living in private households in England. Since 1995, the surveys have included children who live in households selected for the survey; children aged 2-15 were included from 1995, and infants under two years old were added in 2001. Those living in institutions were outside the scope of the survey. This should be borne in mind when considering survey findings, since the institutional population is likely to be older and less healthy than those living in private households.

The HSE in 2011 provided a representative sample of the population at both national and regional level. 8,992 addresses were randomly selected in 562 postcode sectors, issued over twelve months from January to December 2011. Where an address was found to have multiple dwelling units, a random selection was made and a single dwelling unit was included. Where there were multiple households at a dwelling unit, again one was selected at random.

All adults and children in selected households were eligible for inclusion in the survey. Where there were three or more children aged 0-15 in a household, two of the children were selected at random to limit the respondent burden for parents. A nurse visit was arranged for all participants who consented.

A total of 8,610 adults and 2,007 children were interviewed. A household response rate of 66% was achieved. 5,715 adults and 1,257 children had a nurse visit. It should be noted that, for the first time for several years, there was no child boost sample in 2011. Thus the scope for analyses of some data for children may be limited by relatively small sample sizes.

Topics covered in the 2011 Health Survey

Topic coverage is shown in Figure 1. A major new core topic of social care was introduced in the HSE in 2011. There was also a focus on cardiovascular disease (CVD), with questions on associated conditions, hypertension and diabetes. Additional modules of questions were also included, covering chronic pain, attitudes to personal health and lifestyle (to derive the Healthy Foundations segmentation), well-being, and dental health. Core topics

Figure 1

Health Survey for England 2011: Contents

Household data									
Household size, composition and relationships	Household income								
Accommodation tenure and number of bedrooms	Type of dwelling and area								
Economic status/occupation of Household Reference Person	Smoking in household								
	Car ownership								
Individual level information	Age								
	0-1	2-3	4	5-7	8-10	11-12	13-15	16+	
Interviewer visit									
General health, longstanding illness, limiting longstanding illness, acute sickness	●	●	●	●	●	●	●	●	
Personal care plans								●	
Self-reported height and weight								●	
Cardiovascular disease, including doctor-diagnosed hypertension and diabetes								●	
Chronic pain								●	
Dental health								●	
Social care								●	
Fruit and vegetable consumption				●	●	●	●	●	
Smoking					● ^a	● ^a	● ^a	● ^b	
Drinking (heaviest drinking day last week, regular drinking)					● ^a	● ^a	● ^a	● ^b	
Economic status/occupation, educational achievement								●	
Ethnic origin	●	●	●	●	●	●	●	●	
Height measurement		●	●	●	●	●	●	●	
Weight measurement	●	●	●	●	●	●	●	●	
Reported birth weight	●	●	●	●	●	●	●		
Consent to linkage to NHS Central Register/Hospital Episodes Statistics								●	
Self completion									
Attitudes to personal health and lifestyle								●	
Warwick Edinburgh mental well-being scale								●	
EQ-5D								●	
Happiness							●	●	
Perception of weight					●	●	●		
Sexual orientation, religion								●	
Strengths and difficulties, including parent perception of child's weight			● ^c						
Drinking diary									
Drinking diary								● ^d	
Nurse visit									
Immunisations	●								
Prescribed medicines and vitamin supplements	●	●	●	●	●	●	●	●	
Nicotine replacement products								●	
Waist and hip circumference						●	●	●	
Blood pressure				●	●	●	●	●	
Saliva sample (cotinine)			●	●	●	●	●	●	
Blood sample								●	

^a This module was administered by self-completion.

^b This module was administered by self-completion for those aged 16-17 and some aged 18-24.

^c This questionnaire was administered by self-completion to parents of children aged 4-15.

^d The drinking diary was left with participants aged 18 and over to complete in the week following the interview; young people aged 16-17 were asked to complete the diary retrospectively during the nurse visit.

on general health and lifestyles were continued from previous years, with usual questions on drinking supplemented by further questions on regular drinking, and a drinking diary.

Children aged 13-15 were interviewed themselves, and parents of children aged 0-12 were asked about their children, with the interview including questions on general health and fruit and vegetable consumption. For children aged 8-15 and some young adults, details of drinking and smoking were also collected by self-completion.

Height was measured for participants aged 2 and over, and weight was measured for all participants. Nurses measured waist and hip circumference among those aged 11 and over and blood pressure among those aged 5 and over. Non-fasting blood samples were collected from adults aged 16 and over, and saliva samples for cotinine analysis were collected from adults aged 16 and over and children aged 4-15. Nurses obtained written consent before taking samples from adults, and parents gave written consent for their children's samples. Consent was also obtained to send results to their GPs if participants wished.

Results

This booklet presents findings for adults and children from the 2011 Health Survey for England. All 2011 data in this report are weighted; weighting for adults corrects for non-response, and weighting for children corrects for selection differences and non-response. Both weighted and unweighted bases are given in each table in the main report. The unweighted bases show the number of participants involved. The weighted bases show the relative sizes of the various sample elements after weighting, reflecting their proportions in the population in England.

The full report consists of two volumes, published as a set as 'The Health Survey for England 2011':

Volume 1: Health, social care and lifestyles

Volume 2: Methods and documentation.

The second volume, Methods and documentation, provides details of the survey design, methods and response.

Social care

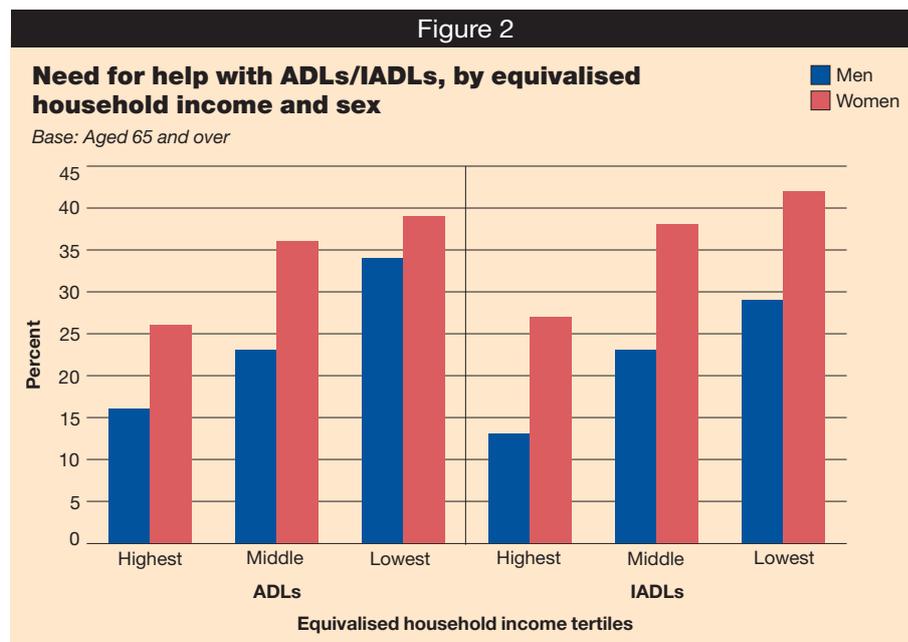
Social care involves provision of help with personal care and domestic tasks to enable people to live as independently as possible. It affects the daily lives of several million people in England, with more than 1 million people receiving publicly funded social care, and around 5 million people providing informal care to family and friends. The Health Survey for England included questions to older people about their need for care, receipt of care and payment for care; and questions to all adults about their provision of informal care.

Need for and receipt of care among people aged 65 and over

Older people were asked about a range of Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs). Just over a quarter of men reported a need for help with at least one ADL and/or at least one IADL, (27% and 26% respectively). Over a third of women reported such need (36% and 38%). The ADL for which help was needed most often was getting up and down stairs. The need for help increased with age. For instance, 13% of men and 12% of women aged 65-69 needed help with stairs, compared with 38% and 48% respectively aged 85 and over.

Among men, 15% received help with at least one ADL and 19% with at least one IADL. Among women, the proportions were 16% and 34% respectively. Some people did not receive help. Fewer men than women had unmet need for at least one ADL (21% and 31% respectively) and for at least one IADL (14% and 17% respectively).

Men and women in the lowest third of the income distribution were more likely to need help and receive help than those in the highest third.



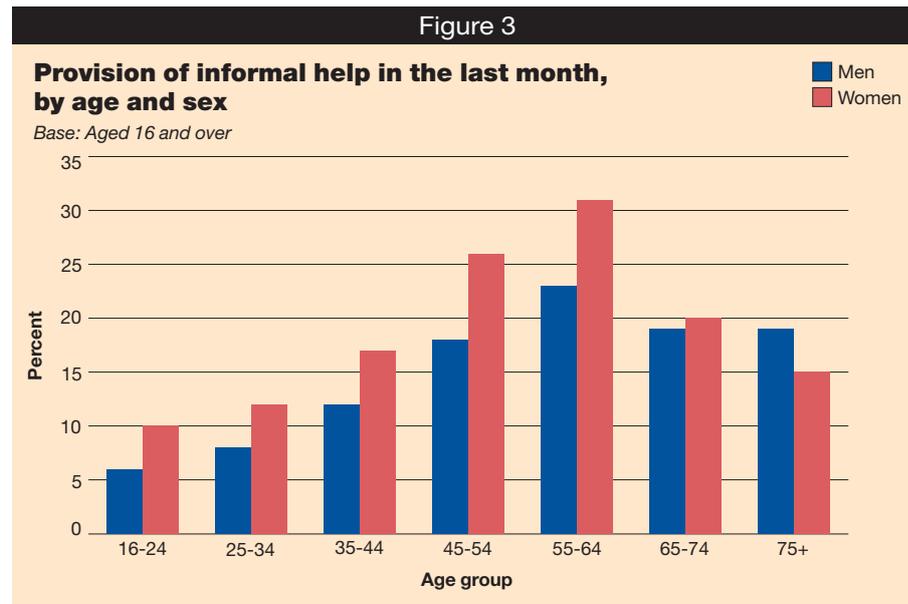
The majority of those aged 65 and over who received help with ADLs or IADLs in the last month were helped by an informal helper (a family member, friend, neighbour or volunteer) rather than a formal helper. Only 17% of men and women who were receiving help had no help from an informal helper for ADLs, while 86% and 81% respectively had no help from a

formal helper. The most frequently cited informal helper for ADLs was a spouse/partner, and daughters and sons were the next most frequently mentioned.

Relatively few older people were receiving formal care, or substantial numbers of hours of informal care. Results from this small group indicate that the majority reported no local authority involvement in arranging their care.

Provision of care

Overall, more women than men reported that they had provided informal help or support to anyone in the last month because of long-term physical or mental ill-health, a disability or problems relating to old age (19% and 14% respectively). The proportion providing care increased significantly with age up to the age group 55-64, and then dropped back slightly in the older age groups, as shown in Figure 3.



Of those who provided help or support in the last month, almost half (45% of male carers and 47% of female carers) provided help or support to one or more parents/parents-in-law. However, carers aged 65 and over most commonly cared for their spouse or partner (49% of men and 35% of women).

Half of all carers (51% of men and 49% of women) provided help or support for one to nine hours in the last week. 28% of male carers and 33% of female carers provided ten or more hours of care in the last week, while 19% and 22% respectively provided 20 or more hours.

61% of male carers and 52% of female carers reported that their own health in the last three months had not been affected by caring for others. Among those whose health had been affected, the most frequently reported effects were feelings of stress, feeling tired, feeling short tempered or suffering from disturbed sleep. Women were more likely than men to mention all of these effects.

Most carers aged 16-64 reported that their employment status had not been affected by their caring activities. 6% of men and women reported they worked fewer hours because of the help or support they gave, while 5% of men and 6% of women had left employment altogether.

Health and lifestyle factors among adults

A number of topics were covered by the HSE in 2011, including cardiovascular disease and associated conditions, chronic pain, alcohol consumption, obesity, well-being and the Healthy Foundations segmentation. Key results on these topics are summarised here.

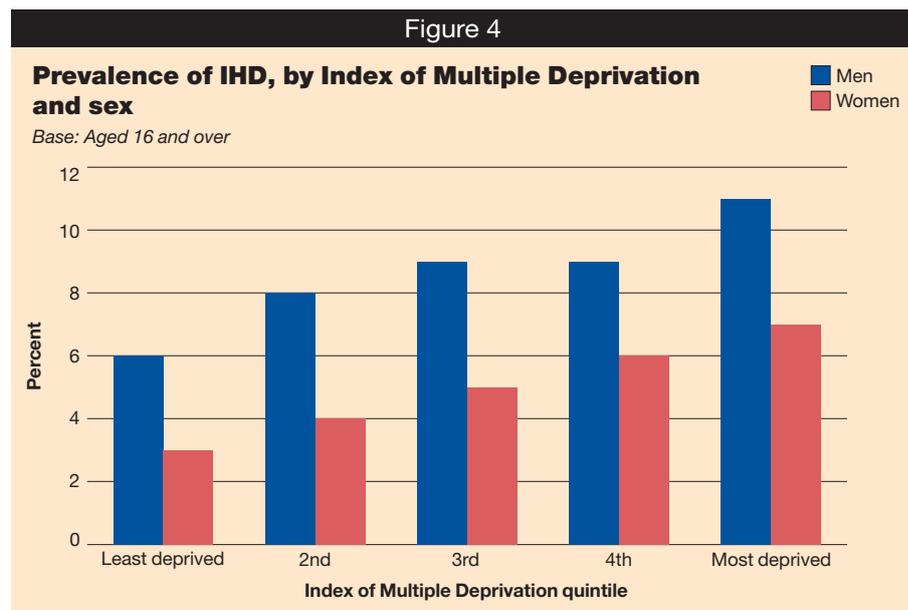
Cardiovascular disease

Cardiovascular disease (CVD) is one of the leading contributors to the global disease burden. Despite a reduction in deaths from CVD in England over recent years, CVD remains the most common cause of death and still causes a large proportion of ill health in this country. In England and Wales in 2011, CVD accounted for 29% of all deaths.

Doctor-diagnosed cardiovascular disease (CVD) includes heart attack, angina, heart murmur, abnormal heart rhythm or stroke. The single most common cardiovascular disease is ischaemic heart disease (IHD), which includes heart attacks and angina.

13.9% of men and 13.4% of women reported having been diagnosed with a cardiovascular condition. Significantly more men than women suffered from IHD (5.7% and 3.5% respectively) and from IHD and/or stroke (7.5% and 5.0% respectively). The prevalence of any CVD condition increased with age, ranging from 3.3% of men and 4.8% of women aged 16-24 to 53.8% and 31.1% respectively aged 85 and over. The increase with age was much steeper in men than in women.

For men and women aged 35 and over, the prevalence of CVD varied by two measures of deprivation: equivalised household income and the area level Index of Multiple Deprivation.¹ Prevalence of IHD was lowest in the highest fifth of the income distribution (5% in men, 2% in women) compared with 11% and 5% respectively in each of the lowest



¹The Index of Multiple Deprivation 2010 (IMD) combines a number of indicators, chosen to cover a range of economic, social and housing issues, into a single deprivation score at the small area level in England.

two fifths. Similarly, prevalence of IHD increased from 6% of men and 3% of women in the least deprived areas to 11% and 7% respectively in the most deprived, as shown in Figure 4.

The prevalence of IHD and stroke in those with diagnosed diabetes was more than twice as high as in the population without this diagnosis. Prevalence of IHD was 13% in both men and women with diabetes, compared with 5% and 3% respectively in those without. For stroke the equivalent proportions were 4% in men and 7% in women with diabetes, and 2% in both men and women without.

In both men and women there was an increase in prevalence of IHD between 1994 and 1998, but levels have generally fallen since then to 5.7% in men and 3.5% in women in 2011. Prevalence of stroke in women increased between 1994 and 1998 (from 1.6% to 2.1%), and has remained fairly constant since then, while in men the prevalence of stroke continued to increase between 1994 and 2011, from 1.8% to 2.7%.

Cholesterol levels

Total cholesterol comprises three components: LDL cholesterol (low density lipoprotein); VLDL cholesterol (very low density lipoprotein), and HDL cholesterol. The majority of the cholesterol in the blood is carried as LDL cholesterol, which contributes to atherosclerosis ('furring' of the arteries). HDL cholesterol is beneficial, as it carries cholesterol away from the arteries back to the liver where it can be excreted. High levels of total and LDL cholesterol as well as low HDL cholesterol are widely documented as risk factors for CVD.

Since 1998 there has been a significant fall in mean total cholesterol levels of 0.5mmol/L in both sexes to 5.1mmol/L in men and 5.2mmol/L in women. Total cholesterol levels were higher for men than for women in the younger age groups, but among adults aged 55 and over, women had higher total cholesterol levels than men.

44% of men and 43% of women had total cholesterol levels below 5mmol/L, the maximum level suggested for those with CVD, diabetes or hypertension who are on drug treatment. Only 14% and 12% respectively had levels below 4mmol/L, the current target for the same group.

Treatment with lipid-lowering drugs (particularly statins) enables effective reduction in total cholesterol levels, with resulting reductions in CVD incidence. 79% of men and 72% of women aged 35 and over with IHD or stroke were taking lipid-lowering drugs, and 64% and 60% respectively were taking anti-platelet drugs.

Having a low level of the beneficial HDL cholesterol is a risk factor for CVD. The mean level of HDL cholesterol was significantly lower in men than women (1.3mmol/L and 1.6mmol/L respectively), and the proportion with low levels was much greater in men than women (13% and 4% respectively). Both men and women from lower income households were more likely to have low HDL cholesterol levels than those from higher income households.

Hypertension

Hypertension is a major preventable risk factor for premature death. High blood pressure is strongly associated with an increased risk of stroke and ischaemic heart disease (IHD) including heart attack and heart failure, as well as the onset of chronic kidney disease and cognitive decline. National guidance from the National Institute for Health and Clinical Excellence acknowledges the wide array of modifiable risk factors for the clinical management of hypertension. It advises a healthy and balanced diet, smoking abstinence, regular physical exercise and a reduction in alcohol, caffeine and sodium intake.

The 2011 report looked at blood pressure, the prevalence of hypertension, and rates of detection, treatment and control. Hypertension is defined in the HSE as having systolic blood pressure of 140mmHg or above or diastolic blood pressure of 90mmHg or above, or taking medication specifically prescribed to treat high blood pressure. The prevalence of hypertension defined this way was 31% of men and 28% of women in 2011.

The prevalence of hypertension has remained unchanged between 2003 and 2011, at close to one third of the population. Although the total prevalence of hypertension has remained

Figure 5

Hypertension categories, by survey year and sex

Base: Aged 16 and over with survey-defined hypertension

■ Hypertensive untreated
■ Hypertensive uncontrolled
■ Hypertensive controlled



constant, the clinical management of hypertension has shifted. The prevalence of untreated hypertension has fallen significantly over the period from 20% of men and 16% of women in 2003, down to 14% of men and 11% of women in 2011. Correspondingly, the prevalence of controlled hypertension has increased significantly over the period from 5% of men and 6% of women in 2003, to 11% of men and 10% of women in 2011. There has been little change over the period in the proportion with treated but uncontrolled hypertension, as shown in Figure 5.

The burden of survey-defined hypertension was greatest among individuals from low-income households and those living in deprived areas. The prevalence of survey-defined hypertension increased from 26% of men and 23% of women in the least deprived quintile of the Index of Multiple Deprivation, to 34% and 30% respectively in the most deprived quintile.

The proportion of participants with survey-defined hypertension who reported doctor-diagnosed hypertension increased with age. Overall, hypertension had been diagnosed in 61% of men and 66% of women with survey-defined hypertension. Detection rates have improved for men since 2006 but not for women, so that levels were similar by 2011. Despite this improvement among men, hypertension remained undetected in around one third of all cases.

Treatment rates were defined as the proportion of participants with survey-defined hypertension who were receiving treatment for high blood pressure at the time of the survey. Since 2006, treatment rates have increased significantly only among men, rising from 42% of men and 54% of women in 2006 to 54% of men and 59% of women in 2011.

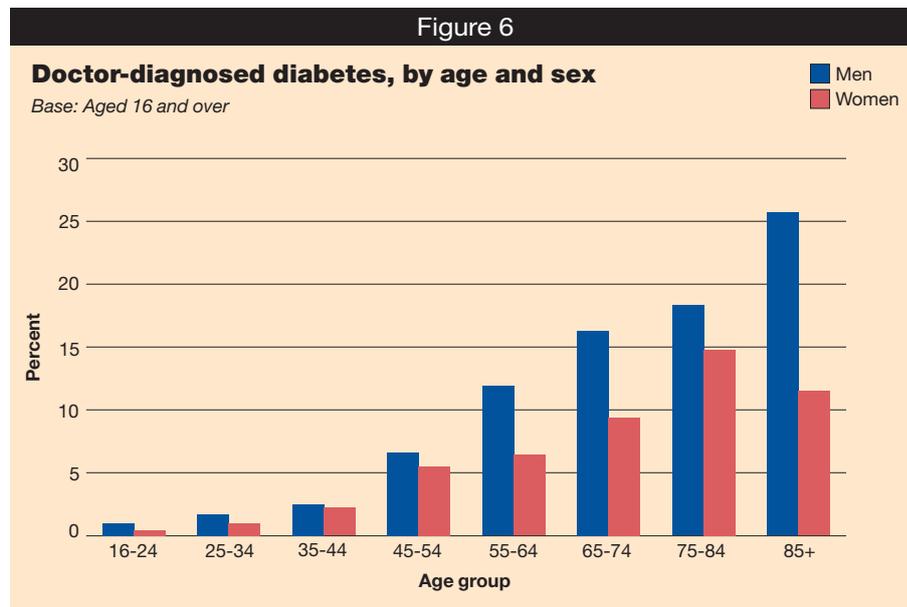
In 2011 almost two fifths of men and women receiving treatment for hypertension were unsuccessful in reducing their blood pressure to a level below 140/90mmHg. Nevertheless, the prevalence of controlled hypertension among those on treatment has increased among both men and women since 2006, rising from 52% of each sex in 2006 to 63% of men and 61% of women in 2011.

Diabetes and hyperglycaemia

Diabetes is characterised by high blood glucose levels (hyperglycaemia). Untreated, hyperglycaemia is associated with damage to and possible failure of many organs, especially the eyes, kidneys, nerves, heart, and blood vessels. Diabetes substantially increases the risk of CVD, and tends to worsen the effect of other risk factors for CVD such as dyslipidaemia (abnormal levels of blood fats), hypertension, smoking and obesity.

In 2011, 7.0% of men and 4.9% of women aged 16 and over had doctor-diagnosed diabetes, the prevalence among men being significantly greater than among women. Since it was first assessed in the HSE in 1994, the proportion of people with diagnosed diabetes has increased substantially: among men it has increased from 2.9% to 7.0%, and among women from 1.9% to 4.9%.

Diagnosed diabetes increased with age, as shown in Figure 6. It rose from fewer than 3% of men and women aged under 45, up to 26% of men aged 85 and over, and to 15% of women aged 75-84, and 12% aged 85 and over.



Diagnosed diabetes was highest among those with the lowest household income. 11.0% of men and 5.9% of women in the lowest quintile of equivalised household income had diabetes, compared with 4.7% of men and 3.7% of women in the highest quintile. Doctor-diagnosed diabetes was also highest among those in the most deprived areas: 9.1% of men and 7.3% of women living in areas in the most deprived quintile of the Index of Multiple Deprivation had diabetes, compared with 4.9% of men and 2.3% of women in areas in the least deprived quintile.

The association between obesity and diabetes was very strong: obese adults aged 25-64 were more likely to have diabetes than non-overweight adults two decades older. For example, 21% of obese men aged 55-64 had diabetes, compared with 15% of men aged 75 and over who were not overweight. Similarly 14% of obese women aged 55-64 had diabetes, compared with 9% of women aged 75 and over who were not overweight.

Glycated haemoglobin was measured in the blood sample taken from adults. This is a validated tool for monitoring hyperglycaemia. Raised levels of glycated haemoglobin (indicating diabetes) followed the same pattern as diagnosed diabetes: it was more prevalent among men than women; among older than younger adults; higher among those in lower income households; and highest among obese people.

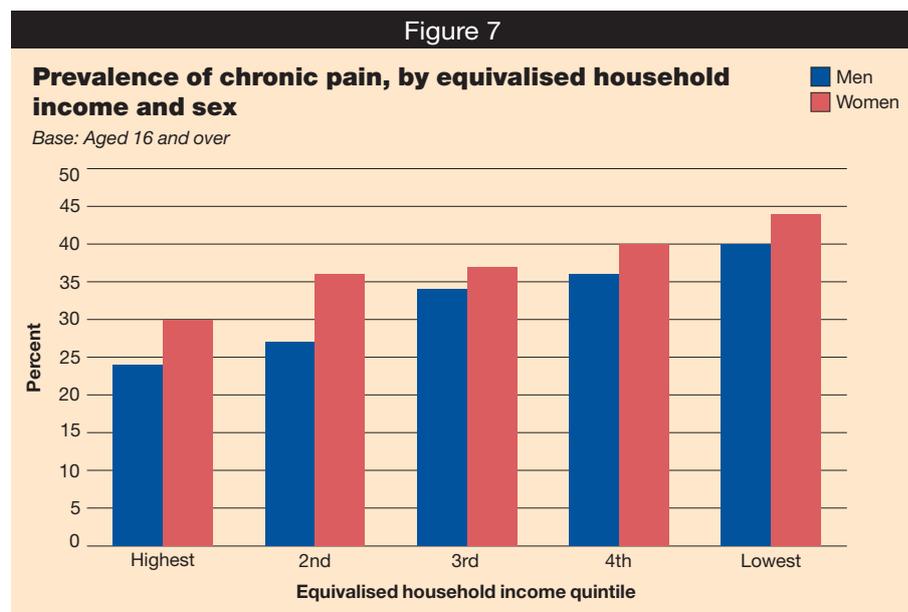
Some people had raised glycated haemoglobin without a diagnosis of diabetes. In 2011, 2.3% of men and 2.2% of women aged 16 and over had undiagnosed diabetes. Among men, this was highest in the 55-64 age group (4.8%) while among women, undiagnosed diabetes was highest among those aged 75 and over (8.2%).

Chronic pain

Chronic pain is defined in this report as pain or discomfort that troubles a person all of the time or on and off for more than three months. It has been shown to be associated with a number of negative outcomes including depression, job loss, reduced quality of life, impairment of function and limiting daily activities. Pain is one of the most common reasons for which people seek medical treatment. It is estimated that those in chronic pain consult their doctor up to five times more frequently than others.

More women than men reported chronic pain (37% and 31% respectively). The prevalence of chronic pain increased with age, from 14% of men and 18% of women aged 16-34 to 53% of men and 59% of women aged 75 and over.

Those living in the lowest income quintile of equivalised household income were more likely to report having chronic pain (40% of men and 44% of women) than those in the highest income quintile (24% and 30% respectively), as Figure 7 shows. Similarly, those living in the most deprived quintile of the Index of Multiple Deprivation (IMD) were more likely to report having chronic pain (36% of men and 42% of women) than those in the least deprived quintile (31% and 34%).



58% of men and women reporting chronic pain said they had pain in their arms, hands, hips, legs or feet. Back pain was the next most commonly reported site of pain. Older people were more likely than younger people to report having chronic pain in more than one site.

Adults were assigned a Chronic Pain Grade based on their ratings of their pain level and the extent to which their pain interfered with their usual activities. Grades I and II indicate low interference pain at low and high intensity, while grades III and IV indicate pain with moderate and high levels of restriction to usual activities. The majority of both men and women with chronic pain had grade I or II pain (70% of men and 68% of women). Older people were more likely than younger people to have more limiting pain at grades III or IV (39% of men and 44% of women aged 75 and over, compared with 22% and 21% respectively aged 16-34). Those in the lowest income quintile were also more likely to have grade III or IV pain, and less likely to have lower intensity pain (grade I), than those in the highest quintile

Participants with the more limiting pain grades III and IV had poorer health than those with less limiting pain. A higher proportion with the higher grades described their health in general as bad or very bad, and reported having at least one longstanding illness.

Drinking patterns

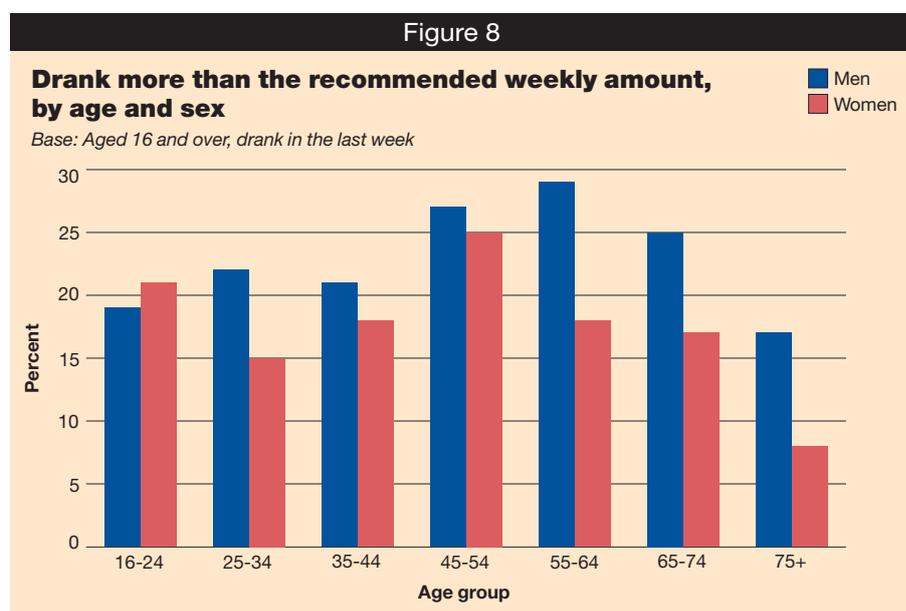
The likelihood that those with chronic pain had seen professionals at a specialist pain service increased with the severity of Chronic Pain Grade. 61% of men and 54% of women with severely limiting chronic pain (grade IV) reported having seen a professional at a specialist pain service, compared with 25% of men and 24% of women with the least limiting pain grade (grade I).

Drinking alcohol is an enjoyable activity for many in Britain, with most adults drinking at least occasionally. However there is growing concern in the public arena from policy makers, health professionals and the general public due to the harm caused by excessive drinking. Following a wide-ranging review of the current extent and nature of alcohol-related harms in 1995, successive governments have considered strategies for promoting sensible drinking and reducing alcohol-related harm. These have been set out in the *Alcohol Harm Reduction Strategy for England* in 2004, *Safe. Sensible. Social. The next steps in the national alcohol strategy* in 2007, and more recently the government's *Alcohol Strategy* published in 2012, as well as being highlighted in the Chief Medical Officer's *Annual Health Report for 2012*.

Based on interview data, 87% of men and 81% of women had drunk alcohol at least occasionally in the last year. 18% of men drank alcohol on five or more days in the previous week, compared with 10% of women. The frequency of drinking increased with age and this increase was greater for men than women. 29% of men aged 75 and over had drunk on five or more days in the last week. Among women, the highest prevalence of drinking on five or more days in the last week was found among those aged 65 to 74 years (19%).

Among men, 39% drank above the recommended levels on at least one day in the last week, including 22% who drank more than twice the recommended amount at least once. The corresponding proportions among women were 27% and 13%. Focusing only on those who drank alcohol in the last week, over half exceeded recommended limits on at least one day in the previous week (56% of men, 52% of women), while over a quarter drank more than twice the recommended limit (31% of men, 25% of women). Men drank an average of 7.7 units and women an average of 5.0 units on the day they drank the most in the last week.

The estimated weekly consumption of the majority of men and women was within the levels recommended by the NHS. 64% of men drank some alcohol but no more than 21 units, and 63% of women drank some alcohol but no more than 14 units. 23% of men and 18% of women had an estimated weekly consumption of more than the recommended levels, as shown in Figure 8. This includes 6% of men and 4% of women whose consumption put them in the higher risk category of more than 50 units a week for men or 35 units for women.



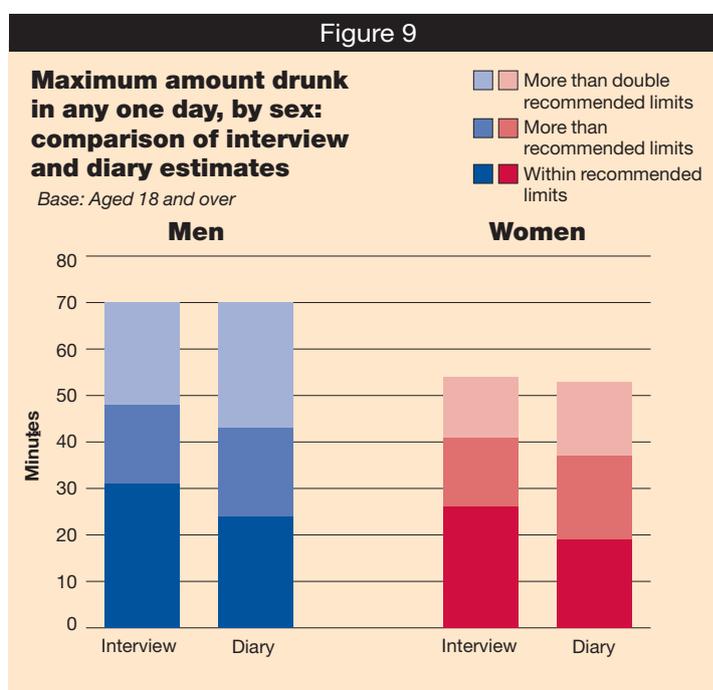
Drinking diary

Since its inception, the HSE has collected information on alcohol consumption as part of the main survey interview. In 2011, men and women aged 18 and over were also invited to complete a drinking diary over the following seven days. This allows comparisons between the two methods.

Survey measures of alcohol consumption are generally acknowledged to underestimate consumption. There are several reasons why this is so. The two most important are believed to be the under-representation of heavy drinkers in survey samples, and the difficulty of accurately recalling amounts drunk, particularly where drinking is in informal settings. A number of studies have explored the effect of questionnaire design on alcohol consumption, and have found that diary-type measures tend to produce the highest estimates. The phrasing of questions is also important; for instance reference to the amount 'usually drunk' can normalise certain consumption levels. Consumption estimates are higher in surveys with beverage-specific questions and those which take into account drink size. The HSE drinking diary combined various attributes designed to encourage honest and accurate reporting.

Estimates of drinking frequency were very similar whether from interview or diary data. According to the diary, 70% of men and 54% of women drank alcohol in an average week, the same proportions of adults aged 18 and over who reported this in the interview. The average (mean) number of drinking days in the week recorded in the diary was 3.4 for men and 2.9 for women, compared with 3.2 and 2.8 days respectively reported in the interview. 20% of men and 10% of women had drunk alcohol on five or more days in the diary week, compared with 18% of men and 10% of women who drank on five or more days in the week preceding the interview.

The diary recorded a higher proportion than the interview of those drinking at more than recommended levels during the week of measurement, as shown in Figure 9. The interview recorded 39% of men aged 18 and over drinking more than four units on at least one day in the last week, compared with 46% in the diary, while 28% of women reported drinking more than three units on one day in the week before the interview, compared with 35% during the diary week.



The mean amounts recorded on the heaviest drinking day by those who drank during the measured week were higher in the diary than in the interview. On average men aged 18 and over reported 7.7 units in the interview, and 8.4 units in the diary. For women the equivalent amounts were 5.1 units (interview) and 5.9 units (diary). This was true for most groups, but not for young men.

Estimates of weekly consumption levels measured by the interview and the diary were very similar. The proportion of men aged 18 and over who consumed 21 units or less was 64% from the interview and 63% from the diary; for women, the proportions consuming 14 units or less in an average week were 62% from the interview and 65% from the diary.

Mean weekly consumption was recorded as higher in the diary than in the interview. Men's mean consumption in a week was 17.4 units according to the interview but 20.3 according to the diary. The equivalent amounts for women were 9.5 units (interview) and 12.5 units (diary).

Only very small proportions regularly drank at levels that placed them at particular risk of harm, that is more than 50 units a week for men, or more than 35 units a week for women. The interview recorded 6% of men and 4% of women drinking at this level, compared with 5% and 2% respectively in the diary.

Anthropometric measures, overweight and obesity

Obesity

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Obesity is associated with an increased risk for a number of common causes of disease and death including diabetes, cardiovascular diseases and some cancers. For individuals classified as obese, the risk of poor health increases sharply with increasing BMI.

Successive governments have introduced a number of initiatives to tackle obesity in England. In October 2011 the government published *A call for action on obesity in England* which renewed their commitment to reduce the level of excess weight by working with a range of partners on prevention and treatment.

The prevalence of overweight and obesity is indicated by body mass index (BMI) as a measure of general obesity, and/or waist circumference as a measure of abdominal obesity. BMI, defined as weight in kilograms divided by the square of the height in metres (kg/m^2) was calculated in order to group people into the following categories:

BMI (kg/m^2)	Description
Less than 18.5	Underweight
18.5 to less than 25	Normal
25 to less than 30	Overweight
30 or more	Obese

Mean BMI was similar in men and women, at $27.2\text{kg}/\text{m}^2$ and $27.1\text{kg}/\text{m}^2$ respectively. Around a quarter of adults were obese (24% of men and 26% of women), and 65% of men and 58% of women were overweight or obese. Among both sexes, generally mean BMI and the prevalence of obesity and overweight increased with age up to the age of 65-74, but dropped back slightly among those aged 75 and over, as shown in Figure 10.

There has been a marked increase in the proportion who were obese between 1993 and 2011. 13% of men were categorised as obese in 1993, compared with 24% in 2011, and 16% of women were obese in 1993 compared with 26% in 2011. The rate of increase in obesity prevalence has been slower in the second half of the period than the first half, and there are indications that the trend may be flattening out over recent years, as shown in Figure 11. However, obesity in women in 2010 and 2011 was at its highest level since 1993.

Self-reported estimates

Part of the challenge in encouraging healthy lifestyles is the extent to which people are able to judge whether their own weight is healthy. Many large-scale epidemiological studies rely on self-reported BMI for monitoring and estimating prevalence of obesity. In 2011 the HSE provided both the usual interviewer measurements for height and weight, and participants' self-reported estimates. Comparisons show that self-reported measures of mean height and mean weight reflected similar patterns to the interviewer measures. However, mean height estimates were consistently higher, and mean weight estimates consistently lower than interviewer-measured estimates. This leads to under-estimation of BMI. Almost a

Figure 10

Prevalence of overweight and obesity, by age and sex: interviewer measured

Base: Aged 16 and over with valid height and weight measurements

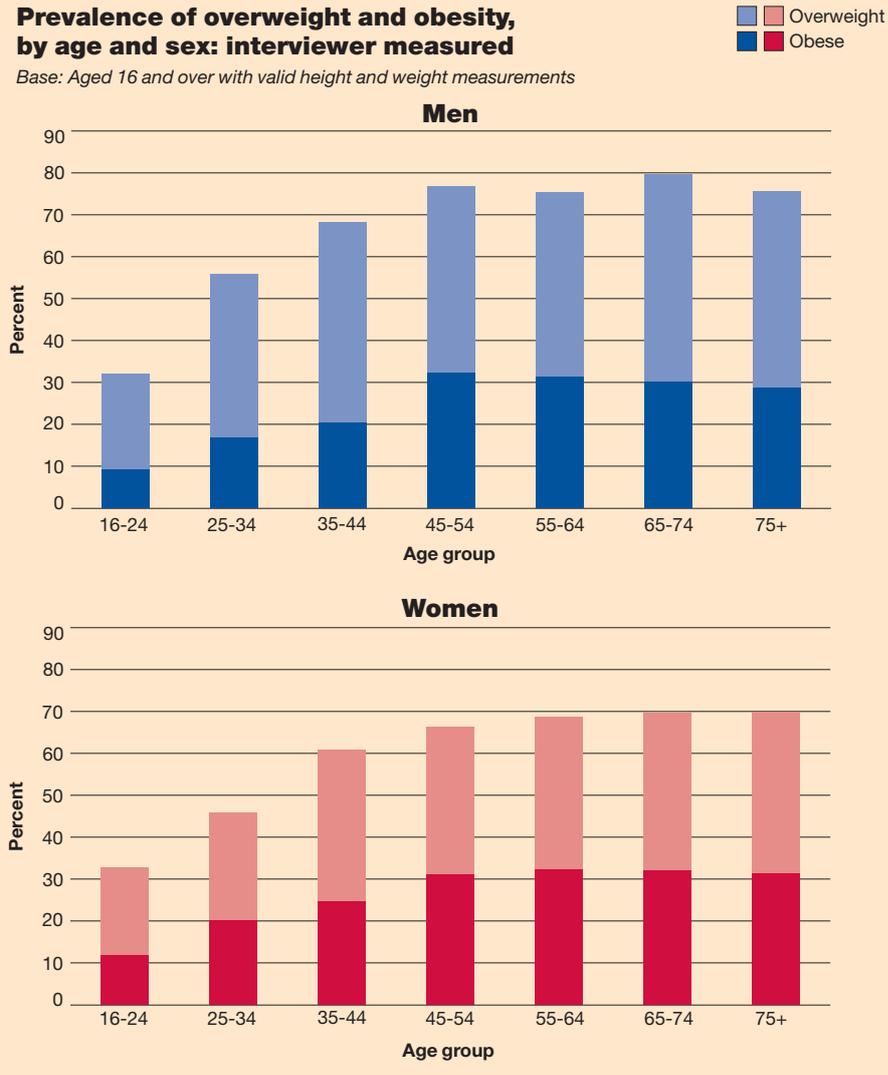
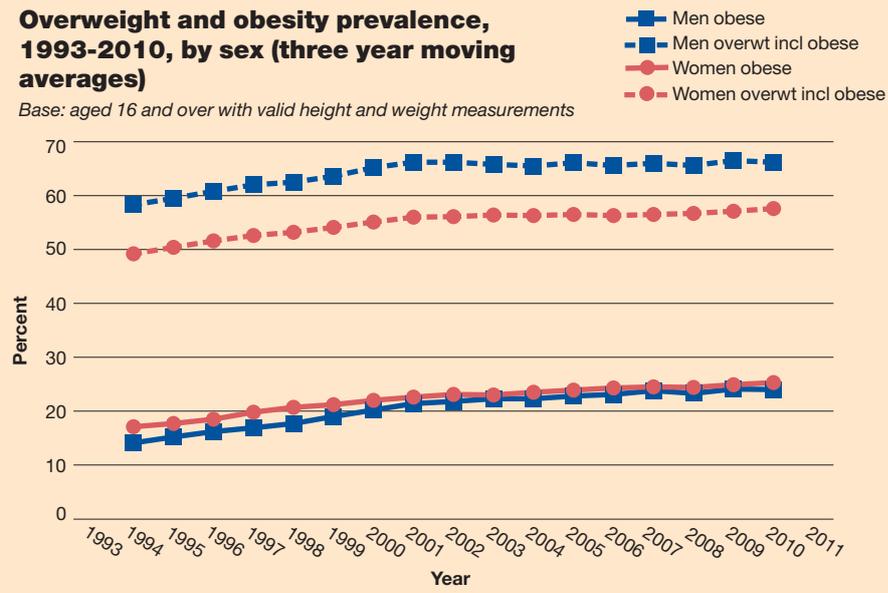


Figure 11

Overweight and obesity prevalence, 1993-2010, by sex (three year moving averages)

Base: aged 16 and over with valid height and weight measurements



quarter of overweight men and a third of overweight women would have been in the 'normal' category by their own height and weight estimates, while a third of obese men and a quarter of obese women would have been in the overweight category.

Waist circumference

A raised waist circumference is defined as greater than 102cm in men, and greater than 88cm in women. Mean waist circumference was 97.1cm in men and 88.5cm in women. A higher proportion of women than men had a raised waist circumference (47% and 34% respectively). Prevalence of a raised waist circumference increased substantially between the age groups 16-24 and 65-74 among both men and women.

Health risk from obesity

National Institute for Health and Clinical Excellence (NICE) guidelines recommend a combination of BMI and waist circumference to assess health risks from obesity. The guidelines define low, high and very high waist measurements for men and women. A high or very high waist circumference is associated with increased health risks for those with a BMI below 35kg/m²; health risks are very high for those with a BMI of 35 kg/m² or more regardless of waist circumference.

Using the NICE classification based on both BMI and waist circumference, 18% of men were at increased risk, 15% at high risk and 21% at very high risk. The equivalent proportions for women were 15% at increased risk, 18% at high risk and 26% at very high risk.

Well-being

In recent years there has been growing interest in using well-being measures for designing and evaluating policies. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) was developed to capture a broad concept of positive mental well-being, including psychological functioning, cognitive-evaluative dimensions and affective-emotional aspects of well-being. The scale is based on 14 statements, for each of which participants are asked to tick the box that best describes their experience over the previous two weeks. Responses are aggregated to form the Well-being Index, which ranges from 14 (those who answer 'none of the time' on every statement) to 70 (those who answer 'All of the time' to all statements). Quite small differences in well-being score may indicate significant differences between different groups.

Well-being was examined in relation to a number of health measures in the 2010 and 2011 reports, and findings are briefly summarised here.

- Men and women had the same mean well-being score, 52. Scores were skewed towards the positive end of the scale, and around a third had scores between 50 and 56.
- The lowest scores for both men and women were in the middle age groups (50 for men aged 35-44 and women aged 45-54), while scores were highest in the 65-74 age group (53 for men and 52 for women).²
- For both men and women, the mean well-being score increased with equivalised household income, from 48 for men and 47 for women in the lowest quintile to 53 for both men and women in the highest quintile.²

There was a very strong association between WEMWBS scores and self-reported general health and mental health.

- Those who rated their health as very good had a mean WEMWBS score of 54, while those who rated their health as bad had a mean of 41 (with the small numbers who rated their health very bad even lower than this).²
- People with a high General Health Questionnaire (GHQ12) score of at least 4³ had a WEMWBS score around 14 points lower than those scoring zero on the GHQ12 (40 compared with 54 for both men and women).²

Well-being was generally lower among people with the health conditions covered in the 2011 survey.

- People without CVD had higher mean well-being scores (52 for both men and women) than those with cardiovascular disease (49 and 50 respectively among participants with

²These results are from the 2010 report.

³A GHQ12 score of 4 or more indicates probable psychological disturbance or mental ill health.

any CVD). Those with IHD or stroke scored more than 5 points less than those with no CVD.

- Mean well-being scores were slightly lower among those with hypertension (52 for men, 50 for women) than for those without (53 and 52 respectively). Scores were lowest among both men and women who were classified as having controlled hypertension (49 for men and 47 for women), and there was little variation between those with no hypertension, undetected hypertension, or with uncontrolled hypertension.
- Adults aged 35 and over with diabetes had a lower mean well-being score (49 for men, 48 for women) than adults of that age without diabetes (52 for both men and women).
- Mean well-being scores were 53 for both men and women with no chronic pain, and decreased within each subsequent Chronic Pain Grade, from 52 for men and women in grade I down to 45 for men and 43 for women in grade IV.

Healthy Foundations segmentation

The Healthy Foundations segmentation was developed for the Department of Health to provide insights for social marketing to improve the effectiveness of health policy, campaigns and interventions. The analysis identifies distinct segments of the population, taking into account the relationships between personal motivation, material deprivation and physical and mental well-being. The report examines this segmentation in relation to health status, lifestyle behaviours and well-being.

There are five Healthy Foundations segments:

- Unconfident Fatalists
- Live for Todays
- Balanced Compensators
- Health Conscious Realists
- Hedonistic Immortals

Unconfident Fatalists and **Live for Todays** did not feel positive about their health, feeling that a healthy lifestyle would be difficult to achieve and would not be enjoyable.

Unconfident Fatalists tended to have low esteem and to feel that they were not in control of their health; while they knew that they should change, they were not motivated to do so.

Live for Todays took a short term view of their health and life in general, and were somewhat resistant to change.

Balanced Compensators and **Health Conscious Realists** had the most positive attitudes to health, valuing their health, enjoying a healthy lifestyle and feeling that they were in control of their health. Health Conscious Realists were distinguished from Balanced Compensators in being more risk averse.

Hedonistic Immortals, with a younger age profile than other segments, knew that their health was important but felt quite positive about it at the moment, and did not think that they would become ill in the near future. They said they intended to lead a healthy lifestyle, but were prepared to take some risks in the shorter term, for instance with smoking and drinking.

Health status

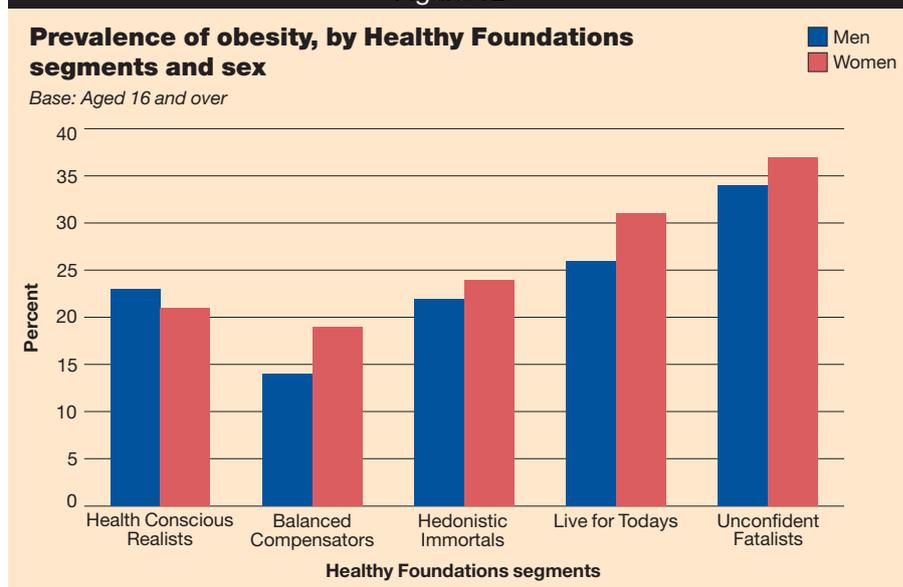
Unconfident Fatalists were much more likely than the other four segments to report bad or very bad general health. Similarly, they were the most likely to have one or more longstanding illnesses or conditions. Balanced Compensators were the most likely to report having very good general health, and to have no long standing illness.

Looking at specific health conditions, Unconfident Fatalists were the most likely to be obese (34% of men, 37% of women), while Balanced Compensators were the least likely (14% and 19% respectively), as shown in Figure 12. Prevalence of cardiovascular disease and diabetes followed the same pattern, and it was also broadly similar for hypertension though there were some differences between men and women.

Lifestyle behaviours

Lifestyle behaviours also varied across the segments. Live for Todays and Unconfident

Figure 12



Fatalists were the most likely to have a poor diet (in terms of fruit and vegetable consumption), and to smoke. There was a slightly different pattern for alcohol consumption; among men, Hedonistic Immortals and Live for Todays were more likely to drink above recommendations than the Balanced Compensators, Health Conscious Realists or Unconfident Fatalists. There was little variation across the segments in alcohol consumption among women.

Well-being

Unconfident Fatalists had a much lower mean well-being score than other segments (45 among both men and women), while Balanced Compensators had the highest score (56 for both sexes).

Following a similar pattern, Unconfident Fatalists were much more likely to report anxiety and depression than the other four segments. Just over half did so (52% of men and 53% of women), compared with a quarter or fewer in the other four segments.

Obesity among children

BMI, overweight and obesity

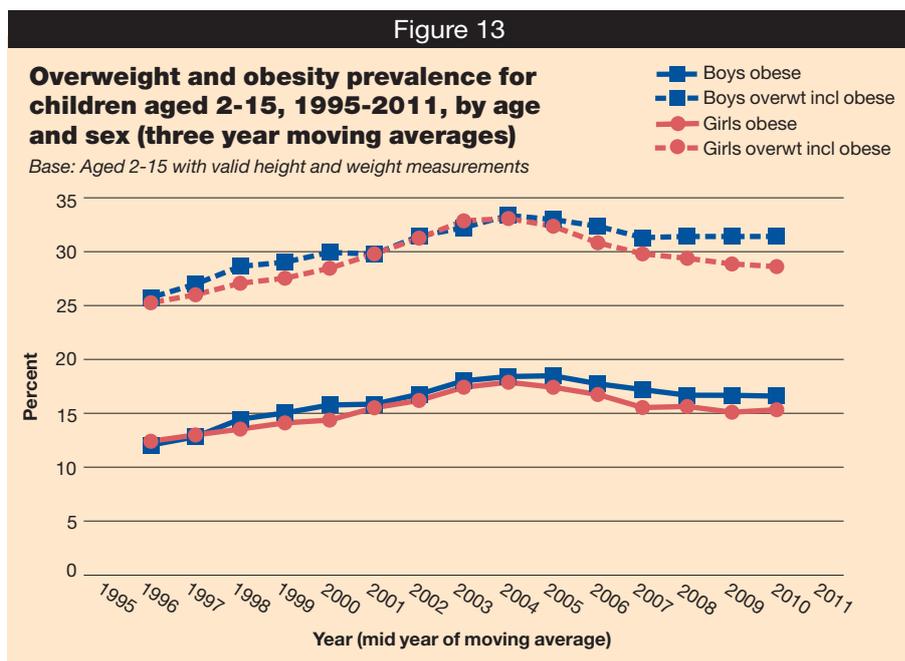
There is considerable evidence that childhood overweight and obesity can be linked with numerous long-term and immediate health risks. Childhood and adolescent obesity can persist into adulthood, where the direct health risks of obesity are severe and well established. Childhood and adolescent overweight/obesity have been linked directly to middle-age mortality and morbidity.

In addition to the increased risk for health problems in later life, children face immediate health consequences of obesity, including increased risks for an abnormal lipids profile and elevated blood pressure. Associations between childhood obesity and increased asthma prevalence and incidence of Type 2 diabetes mellitus have been reported. Being overweight or obese can also have psychological effects.

The prevalence of obesity and overweight was similar among girls and boys aged 2-15: 17% of boys and 16% of girls were classed as obese, and 31% of boys and 28% of girls were classed as either overweight or obese. Older children were more likely than younger children to be obese (24% of boys and 17% of girls aged 11-15, compared with 10% and 12% respectively among children aged 2-7).

There was evidence of inequalities according to socio-economic status. Obesity levels were highest among boys in the lowest quintile of equivalised income (25%), and among girls in the third and lowest income quintiles (22% and 19% respectively). Similarly, the proportion of children who were obese was higher among those living in the most deprived quintile of the Index of Multiple Deprivation (29% of boys and 22% of girls) than those living in the least deprived quintile (11% of boys and 10% of girls).

Figure 13 shows trends in obesity and overweight between 1995 and 2011. The prevalence of obesity among boys aged 2-15 increased by 6 percentage points (from 11% to 17%), and by 4 percentage points (from 12% to 16%) among girls aged 2-15. However, the



pattern has not been one of uniform increase during that period. The prevalence of obesity increased steadily in most years up to around 2004 and 2005, and since then the pattern has been slightly different for boys and girls. Among boys, the proportion that was obese has remained at a similarly high level, between 16% and 19%, since 2001. Among girls, there was a significant decrease in obesity between 2005 and 2006, and levels have been maintained at this slightly lower level since then.

The lack of significant change in the proportion of children who were obese in the most recent five to six years suggests that the trend in obesity is flattening out. It will be important to continue to monitor the trends in future, using HSE data to confirm whether this plateau is maintained, or whether there may be the beginning of a downward trend if government ambitions are realised.

Perceptions of children's weight

Overall, 60% of boys and 53% of girls aged 8-15 felt that they were about the right weight, while 11% of boys and 14% of girls felt that they were too heavy, and 10% of boys and 5% of girls thought they were too light (19% of boys and 28% of girls were not sure). The majority of children who thought themselves too heavy were obese (68%). Of those children who thought of themselves as about the right weight, 30% were overweight or obese.

Parents of children aged 4-15 were asked whether they felt their child was about the right weight or too heavy or too light. The majority of parents thought that their child was about the right weight (78% for both boys and girls), while around one in ten parents thought their child was too heavy (8% for boys, 10% for girls). Parents were more likely to consider children aged 11-15 to be too heavy than those aged 4-10. 91% of parents who thought their child was too heavy were correct. However, almost half of parents whose child was obese misjudged them to be about the right weight (47%), and similarly the majority of parents whose child was overweight thought they were about the right weight (84%).

The majority of children aged 8-15 said that they were not trying to change their weight (64% of boys and 60% of girls), while 25% of boys and 35% of girls said they were trying to lose weight. Among those who said they were trying to lose weight, 20% were overweight and 50% were obese while 30% were neither overweight nor obese.

Reports on the 2011 Health Survey

This booklet is a summary of the findings from the 2011 Health Survey for England: Craig R, Mindell J (eds). *Health Survey for England 2011: Health, social care and lifestyles*.

Volume 1: Health, social care and lifestyles

Volume 2: Methods and documentation.

Health and Social Care Information Centre, Leeds, 2012.

Full results are available in the survey report at www.ic.nhs.uk/pubs/hse11report, and also in an anonymised data file lodged with the UK Data Service at the University of Essex.

Reports and data files from earlier surveys are similarly available.

Tables showing selected trends from 1993 to 2011 will be found on the Health and Social Care Information Centre website at www.ic.nhs.uk/pubs/hse11trends or at the address below.

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The Research Department of Epidemiology and Public Health, chaired by Professor Richard Watt, is a leading centre for research into the social determinants of health. The department has a strong interdisciplinary structure. The Department houses 180 staff in 12 main research groups, including the Joint Health Surveys Unit, part of the Health and Social Surveys Research Group. Collaborative research is conducted through the International Institute for Society and Health and across UCL. The Department's research programme is concerned particularly with social factors in health and illness and inequalities in these, including national cross-sectional surveys of health and behaviour (such as diet), longitudinal studies of cardiovascular disease (Whitehall studies) and the English Longitudinal Study of Ageing (ELSA); international studies of cardiovascular disease and diabetes; socio-dental indicators of need; and the socio-economic and policy implications of an ageing population.



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