

# Welsh Health Survey 2008



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## Foreword

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This is the latest in the series of annual reports providing key findings from the Welsh Health Survey. The report provides an authoritative insight into the health of the Welsh population. The role of information in developing an evidence-based approach to our work is crucial and the Welsh Health Survey makes a major contribution.

The survey is a major source of information about the health of people living in Wales, the way they use health services and the things that can affect their health. It meets a range of important needs, including the provision of data for monitoring health and health-related lifestyles and measuring progress towards targets. It also provides evidence for informing policies and underpinning strategies for promoting better health. Furthermore, it provides a direct measurement of need for health care resource allocation in Wales.

The survey was established in 2003 and runs all year round. It is designed to be nationally representative of people of different ages, sex and geographic area. This report focuses on the findings for 2008 and shows some comparisons with earlier years.

I welcome this valuable report and would particularly like to express my thanks to all of the people who have given up their time to participate in this important study.



A handwritten signature in black ink that reads "Tony Jewell". The signature is written in a cursive style with a long horizontal line extending from the start of the name.

Dr Tony Jewell

Chief Medical Officer for Wales

## Editors' acknowledgements

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We would like to thank everyone who contributed to the survey and the production of this report.

Our thanks go to:

- the National Centre for Social Research (NatCen), in particular Melanie Doyle, Katharine Sadler, Marie Sanchez, David Hussey and their colleagues, and Pauline Burge, Emma Fenn, Karen Hawkes and their team
- all the interviewers who worked on the survey
- NHS Direct Wales, who provided a helpline on the survey
- all those who reviewed chapters of this report, or who contributed to the development of the survey.

Finally, we would like to thank all those members of the public who gave their time and co-operation in responding to the survey.

*Ben Crudge, Anne Kingdon, Cath Roberts*

September 2009



## 1 Key facts

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This report presents the latest information available from the Welsh Health Survey (WHS). The WHS is a source of information about the health of people in Wales, the way they use health services, and the things that can affect people's health.

The findings are based on data from the 2008 Welsh Health Survey, which is based on a sample of the general population living in private households in Wales. Initial results were published earlier in the year, and this report now provides more detailed information.

The main chapters of the report focus on:

- health status, illnesses, and other conditions
- health-related lifestyle
- health service use
- health of children.

This summary presents key findings from the main chapters of the report. For further information, chapters 3 to 6 each begin with a detailed summary of the main findings presented in the body of the text.

### Health status, illnesses, and other conditions

- 16% of adults reported that their health in general was excellent, 34% very good, 29% good, 15% fair, and 6% poor.
- 19% of adults reported currently being treated for high blood pressure, 13% for a respiratory illness, 13% for arthritis, 9% for a heart condition (other than high blood pressure), 9% for a mental illness, and 6% for diabetes.
- 27% of adults reported having a limiting long-term illness.
- 28% of adults reported having fewer than 21 teeth, 15% of adults reported having difficulty with their hearing, and 6% with their eyesight.

### Health-related lifestyle

- 24% of adults reported that they currently smoked.
- 23% of adult non-smokers reported being regularly exposed to other people's tobacco smoke indoors, and 34% indoors or outdoors.
- 45% of adults reported drinking above the guidelines on at least one day in the past week, including 28% who reported binge drinking.
- 36% of adults reported eating five or more portions of fruit and vegetables the previous day.
- 30% of adults reported meeting the guidelines for physical activity in the past week.
- 57% of adults were classified as overweight or obese, including 21% obese.

## Health service use

- 17% of adults reported that they had talked to a GP about their own health in the past two weeks.
- 31% of adults reported attending a hospital outpatient department in the past twelve months, and 10% reported staying in hospital as an inpatient (overnight or longer).
- 70% of adults reported using a dentist in the past twelve months, 69% a pharmacist and 49% an optician.
- 50% of adults reported being on regular prescribed medication.

## Health of children

- 69% of children were reported to have very good general health, 25% good, and 5% fair.
- 19% of children were reported as having a long-standing illness, including 6% with a limiting long-standing illness.
- 58% of children were reported as eating fruit every day, and 51% vegetables.
- 53% of children were reported as exercising for at least an hour on five or more days of the previous week, including 35% who did so every day.
- 33% of children were estimated to be overweight or obese, including 16% obese.
- For 13% of children, it was reported that a GP had been consulted about their health in the past two weeks.





## 2 Introduction

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### 2.1 Background

The Welsh Health Survey is a source of information about the health of people living in Wales, the way they use health services, and the things that can affect their health. It was developed to meet a range of needs, including providing estimates of health status, health-related lifestyle and health service use at national (Wales) level, for population sub-groups (such as age, sex, socio-economic group) and for local authorities. It also provides a direct measurement of need for health care for NHS resource allocation in Wales. The survey was established in October 2003 and runs all year round. This report presents results from the 2008 survey, relating to data collected between January and December 2008.

### 2.2 Overview of survey design

The survey was based on a representative sample of people living in private households in Wales. A random sample of addresses from the Postcode Address File (PAF) was selected and the sample was stratified by local authority. The smaller local authorities were oversampled to allow the production of survey estimates at this level following the collection of two years' data. At each household, all adults and a maximum of two children were eligible for inclusion in the survey. The small proportion of people not covered by the PAF, including those living in institutions, were not covered by the survey. It should be noted that people in institutions are likely to be, on average, in poorer health than those in private households – this should be kept in mind when considering the results from this survey.

Information was collected at two levels: household (through a short interview, offered in English or Welsh) and individual (through English or Welsh self-completion questionnaire). First, a short interview with a responsible adult in the household was conducted to enumerate the household, and to record brief demographic information for each household member and the socio-economic classification of the household reference person. Self-completion questionnaires were then left for completion by each adult aged 16 years and over in the household, for later collection by the interviewer. In households with children, a maximum of two children were randomly selected for inclusion in the survey. For selected children, questionnaires were left for completion (with older children completing their own questionnaires) and height and weight measurements were taken by the interviewer. The survey relies on a self-completion questionnaire. The results, therefore, reflect people's own understanding of their health rather than a clinical assessment of their medical condition, and their own interpretation of the health services they have used.

The survey results were weighted to take account of unequal selection probabilities, and for differential non-response, i.e. to ensure that the age and sex distribution of the responding sample matched that of the population of Wales.

During the period covered by this report, a household interview was obtained with 74% of eligible households in the sample. Self-completion questionnaires were obtained for 78% of adults and 76% of selected children in participating households, and height and weight measurements were obtained for 59% of eligible children in those households. During this period, around 13,000 adults and 3,000 children participated fully in the survey.

Further details of the survey methodology and response are given later in this report (chapter 7). Information about the survey and its outputs is also available on the Statistics for Wales website<sup>1</sup>.

### 2.3 The content of this report

This report is based on data from the 2008 Welsh Health Survey. Initial results<sup>2</sup> were published earlier in the year, and this report now provides more detailed information.

The report is divided into seven chapters. Following the two introductory chapters, chapters 3-5 present the survey findings for adults in more detail, including breakdowns by age and sex. For a selection of key measures, socio-demographic breakdowns are also shown, along with comparisons with earlier years. Chapter 6 presents the survey findings for children. Methods and definitions are shown at the start of each section, tables are included at the end of each chapter. The remaining chapter (chapter 7) covers technical aspects of the survey. Local authority / health board breakdowns for 2007 + 2008 combined are provided in a separate report<sup>3</sup>.

The chapters are:

*Chapter 1 Key facts*

This chapter presents a summary of the key findings.

*Chapter 2 Introduction*

This chapter provides an introduction to the survey, with notes to results.

*Chapter 3 Health status, illnesses, and other conditions*

This chapter presents the survey findings for general health status (including the SF-36 set of questions), a range of reported illnesses, and other conditions (such as eyesight or hearing difficulty).

*Chapter 4 Health-related lifestyle*

This chapter presents the survey findings on reported lifestyle behaviours, including smoking, drinking, fruit and vegetable consumption, physical activity, and body mass index.

*Chapter 5 Health service use*

This chapter presents the survey findings on reported use of a range of health services. It also includes information about medicines.

*Chapter 6 Health of children*

This chapter presents the survey findings on the general health, health-related lifestyle and service use of children.

## Chapter 7 *Technical summary*

This chapter includes technical information about the survey, including information on the sample design, response, and weighting. A more detailed technical report<sup>4</sup> is published by the National Centre for Social Research (NatCen), who carried out the survey on behalf of the Welsh Assembly Government.

### *Appendices*

Appendix A is the glossary. Appendix B contains a copy of the survey questionnaires.

## 2.4 Availability of unpublished data

Enquiries about the information in this report may be addressed to: Health Statistics and Analysis Unit, Statistical Directorate, Welsh Assembly Government, Cathays Park, Cardiff CF10 3NQ; tel 029 2082 6710 (029 2082 3471 in Welsh); e-mail [stats.healthinfo@wales.gsi.gov.uk](mailto:stats.healthinfo@wales.gsi.gov.uk). Some statistical bulletins on specific topics in the survey may also be produced at a later date and will be available through the Statistics for Wales website<sup>1</sup>. Some additional summaries may be produced on request, subject to the availability of resources, data quality and robustness, and provided the confidentiality of respondents is preserved.

A copy of the anonymised dataset will be deposited with the UK Data Archive at the University of Essex<sup>5</sup> and may be made available through them for specific research projects.

## 2.5 Key quality information

- a) Interpretation of the results should take account of the questionnaire design, as the mode of collection (self-reporting on paper) and the questions themselves affect the information collected. The adult and child questionnaires can be found in Appendix B.
- b) Survey results are weighted to take account of unequal selection probabilities, and for differential non-response, i.e. to ensure that the age and sex distribution of the responding sample matches that of the Welsh population.
- c) The following conventions have been used in all tables:
  - percentages greater than zero but less than 0.5%
  - 0 a genuine zero, that is, no observations.
- d) Rounding of percentages may result in columns of some tables summing to 99% or 101%.
- e) Missing answers occur for several reasons, including refusal or inability to answer a particular question, and cases where the question is not applicable to the informant. Missing answers have been omitted from all tables and analyses.
- f) The last column of each table provides unweighted base numbers of respondents to the Welsh Health Survey. In some tables, base numbers vary due to varying response levels between different survey questions. In those tables, sample sizes are provided, serving as an upper limit for the base numbers of the table.

## Introduction

- g) It should be noted that the design of the survey means that the effective sample sizes will be somewhat smaller than actual sample sizes (base numbers), so these should be interpreted as a guide to precision only.

## References and notes

1. Statistics for Wales website  
**[www.wales.gov.uk/statistics](http://www.wales.gov.uk/statistics)**
2. Welsh Health Survey 2008: Initial Headline Results. See link above.
3. Welsh Health Survey: 2007+ 2008 Local Authority / Health Board Results. See link above.
4. NatCen (2009) *Welsh Health Survey 2008 Technical Report*. See link above.
5. **[www.data-archive.ac.uk](http://www.data-archive.ac.uk)**



## 3 Health status, illnesses, and other conditions

---

### 3.1 Introduction

This chapter focuses on general health status, illnesses and other conditions among adults (such as eyesight or hearing difficulty).

Broad figures for Wales are provided along with age and sex breakdowns. For a selection of key measures, information is provided by socio-economic group and area deprivation. Some comparisons with earlier years are also shown. Local authority / health board breakdowns for 2007 + 2008 combined are provided in a separate report<sup>1</sup>.

The Welsh Health Survey relies on a self-completion questionnaire. The results, therefore, reflect people's own understanding of their health rather than a clinical assessment of their medical condition.

This chapter includes information on:

- health status (3.3)
- illnesses (3.4)
- other conditions (3.5)
- key measures by socio-demographic factors (3.6)
- trends for key measures (3.7).

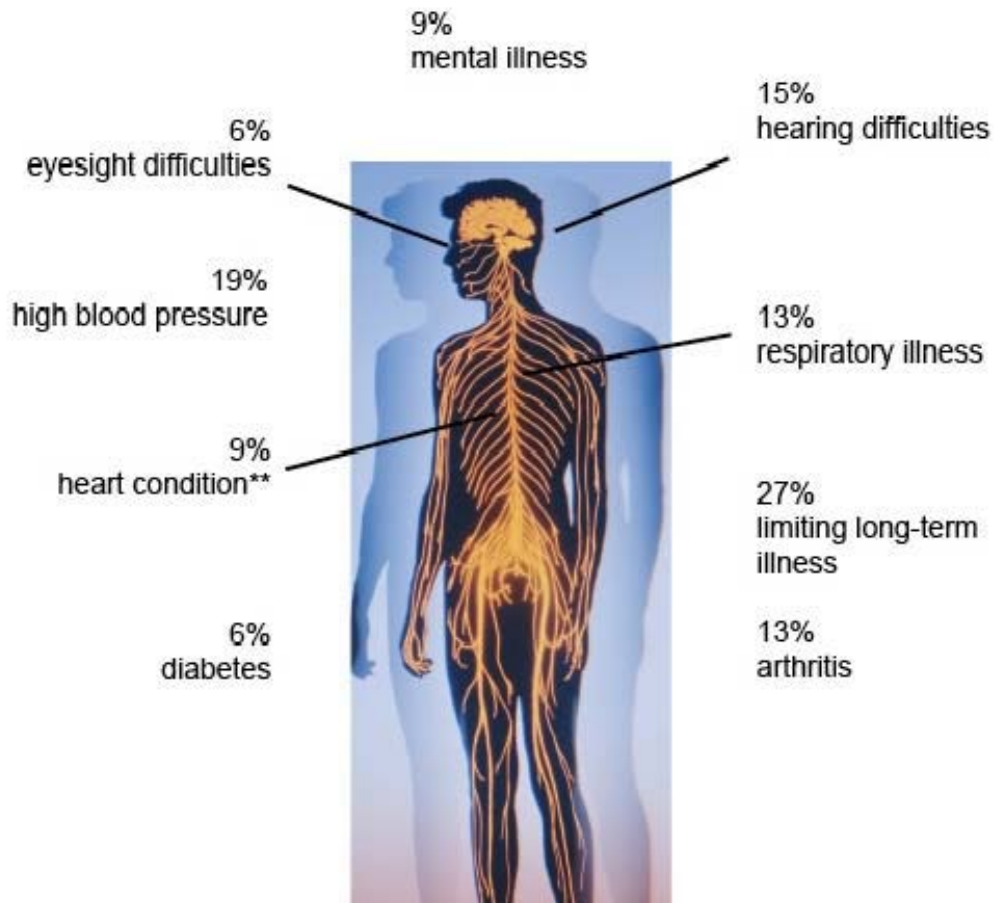
### 3.2 Summary

- 16% of adults reported that their health in general was excellent, 34% very good, 29% good, 15% fair, and 6% poor.
- Health status scores (using SF-36) were lower for women than for men, indicating worse health and well-being among women.
- 19% of adults reported currently being treated for high blood pressure, 13% for a respiratory illness, 13% for arthritis, 9% for a heart condition (other than high blood pressure), 9% for a mental illness, and 6% for diabetes.

#### Figure 3a

- In general a higher percentage of women than men reported being treated for specified illnesses, but not for heart conditions or diabetes.
- The percentage who reported being treated for specified illnesses generally increased with age, but not for asthma and mental illness.
- 27% of adults reported having a limiting long-term illness, with an increase in the percentage with age.
- 28% of adults reported having fewer than 21 teeth, 15% of adults reported having difficulty with their hearing, and 6% with their eyesight.
- Levels of ill-health increased with area deprivation. In general, those in the most deprived areas reported the worst health.
- There was little change in the rates of most illnesses over the first five years of the survey.

**Figure 3a: Percentage of adults who reported being treated for selected illnesses, or having certain conditions\***



\* With the exception of eyesight and hearing difficulties the figures show the percentage of adults who reported currently being treated.

\*\* Excludes high blood pressure

### 3.3 Health status

#### 3.3.1 Methods and definitions

The Welsh Health Survey adult questionnaire included a standard set of 36 health status questions known as SF-36 (version 2). SF-36 questions asked respondents about their own perception of their physical and mental health and the impact it has on their daily lives.

#### ***SF-36 general health question***

The SF-36 questions include a question asking respondents to rate their own general health on a five-point scale ranging from excellent to poor.

#### ***SF-36 component scores***

Responses can be combined to produce eight scores for the following aspects of health and well-being:

- physical functioning
- role-physical
- bodily pain
- general health
- vitality
- social functioning
- role-emotional
- mental health.

All scores above or below 50 can be interpreted as above or below the general population norm. See the glossary at Appendix A for further information.

#### ***SF-36 summary scores***

The eight components can be combined to produce two summary measures of physical and mental health - the Physical Component Summary (PCS) and Mental Component Summary (MCS) scores. Higher scores indicate better health.

#### 3.3.2 Results

#### ***SF-36 general health question***

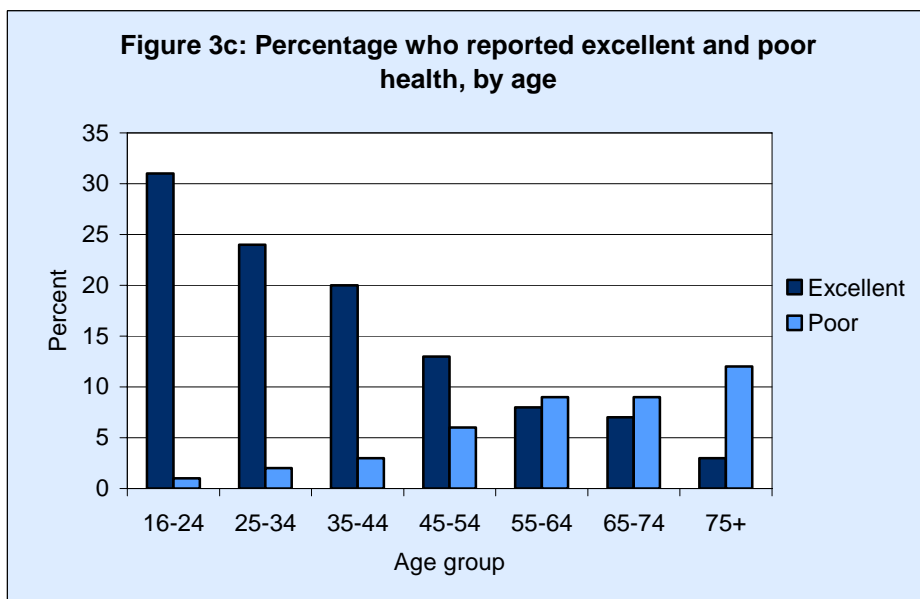
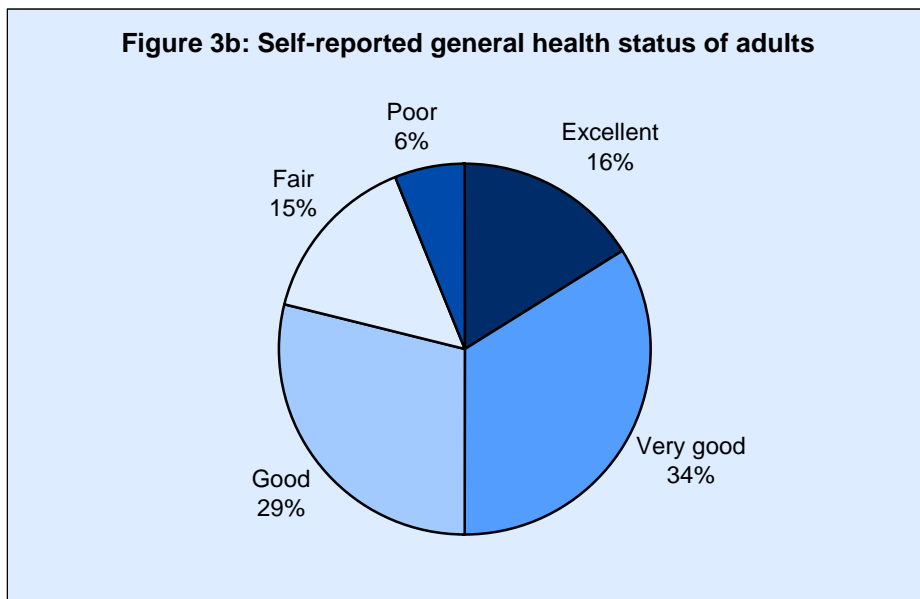
As figure 3b shows:

- 16% of adults reported that their health in general was excellent, 34% very good, and 29% good
- 15% of adults reported that their health in general was fair, and 6% poor.

Figure 3c shows that the percentage who reported excellent health decreased with age, while the percentage who reported poor health increased with age.

A higher percentage of men than women reported being in excellent health, more notably in the younger age-groups.

Table 3.1, figures 3b, 3c

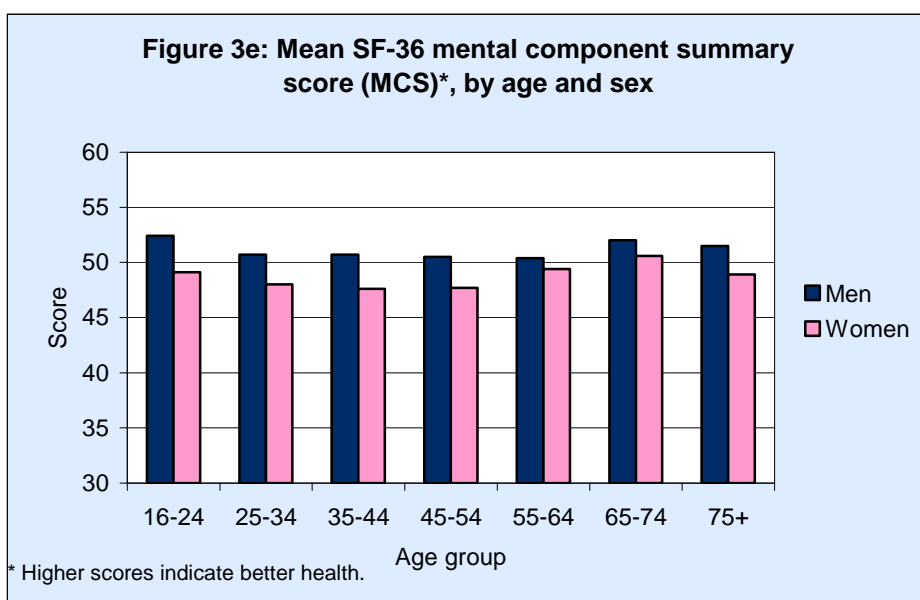
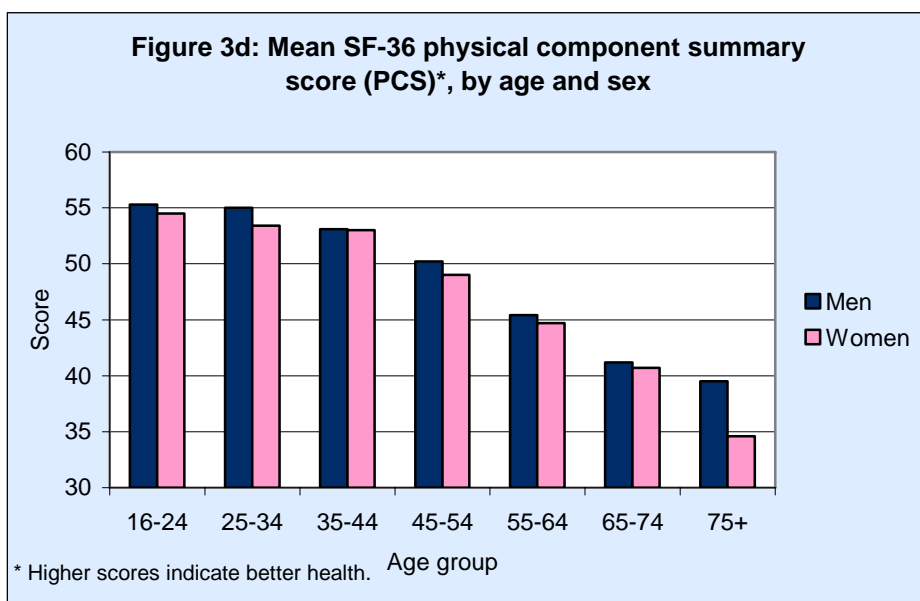


**SF-36 component and summary scores**

Figures 3d and 3e indicate that the mean physical and mental component scores for women were lower than those for men, indicating poorer health and well-being for women.

The physical component score decreased with age, that is health worsened with age. For the MCS there was no clear pattern with age. This is shown in figures 3d and 3e.

Table 3.2, figures 3d, 3e



## 3.4 Illnesses

### 3.4.1 Methods and definitions

The survey asked adults aged 16 years and over whether they were currently being treated for a range of illnesses. For heart attack, stroke and cancer they were asked whether they had ever been treated for the condition. Information was also collected regarding limiting long-term illness, not specifying whether or not the illness was treated.

#### ***Any heart condition***

Adult respondents were classified as having any heart condition if they reported ever having been treated for a heart attack, or currently being treated for angina, heart failure or 'another heart condition'. Text or tables in this report indicate

where the definition includes or excludes high blood pressure (hypertension). Results for both definitions are shown because high blood pressure is a risk factor for heart disease rather than an actual heart condition.

### ***Any respiratory illness***

Adult respondents were classified as having any respiratory illness if they reported currently being treated for asthma, pleurisy, bronchitis, or 'another respiratory illness'.

### ***Any mental illness***

Adult respondents were classified as having any mental illness if they reported currently being treated for depression, anxiety, or 'another mental illness'.

### ***Diabetes***

Adult respondents were asked whether they were currently being treated for diabetes, making no distinction between type 1 and type 2 diabetes. If they responded positively, they were asked how their diabetes was controlled (by injection, tablets or diet).

### ***Another chronic illness***

Following questions on specific illnesses in the adult questionnaire, the survey asked if the adult was currently being treated for 'any other chronic or long-term illness', and asked to specify the main illness. Answers were subsequently coded according to a coding frame similar to that used by the General Household Survey and Health Survey for England. The categories into which respondents' answers were coded were collapsed into broad groups approximate to the chapter headings of the International Classification of Diseases (ICD10). See the glossary at Appendix A for more details.

### ***Any illness***

Adult respondents were classified as having 'any illness' if they reported currently being treated for any of the illnesses specified in the questionnaire (see Appendix A), or another chronic illness (see above).

### ***Limiting long-term illness***

The questionnaire asked if the adult has 'any long-term illness, health problem or disability' which limits their daily activities or the work they can do. Adults were asked to include problems due to old age and, if responding positively, asked for the main cause of this limitation. Answers were coded according to the ICD 10 codes (see above).

Limiting long-term illness is widely used as a measure of health status and has been shown to be an accurate predictor of early mortality, psychological health and hospital utilisation<sup>2</sup>. The survey used the same limiting long-term illness question as that used in the 2001 Census.

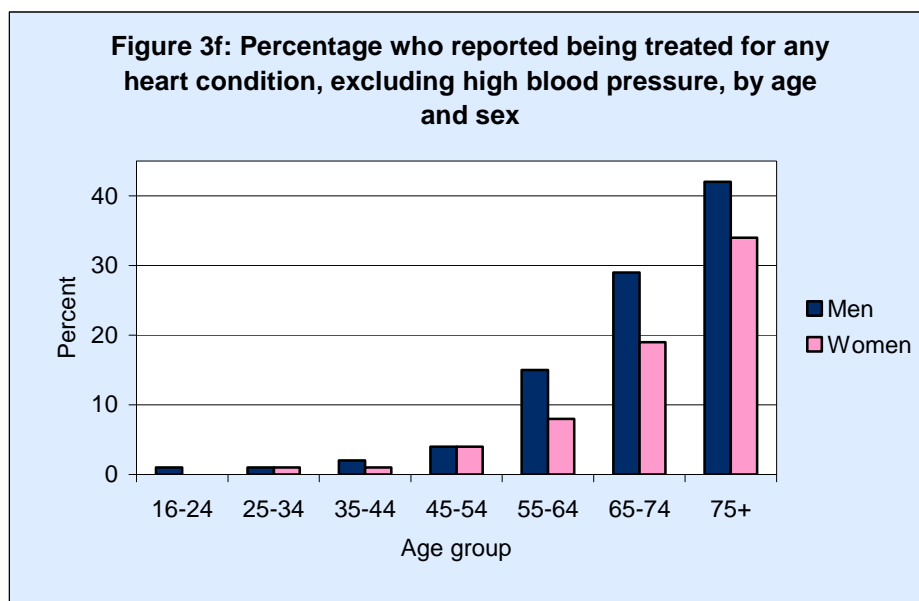
### 3.4.2 Results

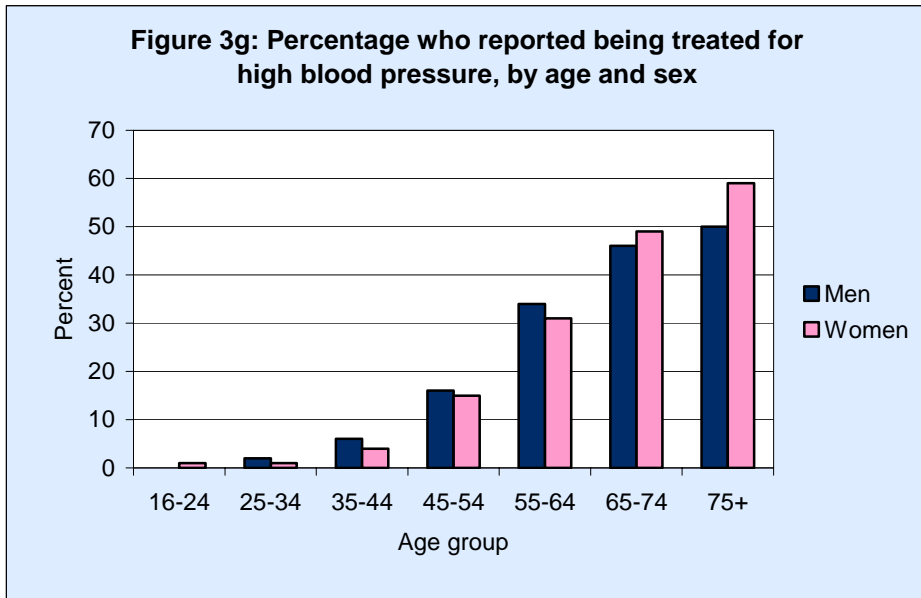
#### **Heart conditions**

- 4% of adults reported ever having been treated for a heart attack.
- 19% of adults reported currently being treated for high blood pressure.
- 4% of adults reported currently being treated for angina, 1% for heart failure, and 4% for another heart condition.
- 9% of adults reported being treated for any heart condition, excluding high blood pressure.
- 23% of adults reported being treated for any heart condition, including high blood pressure.

The proportion of adults who reported being treated for a heart condition and for high blood pressure rose with age, as shown in figures 3f and 3g. A slightly higher percentage of men (10%) than women (8%) reported being treated for a heart condition (but not for high blood pressure).

**Table 3.3, figures 3f, 3g**



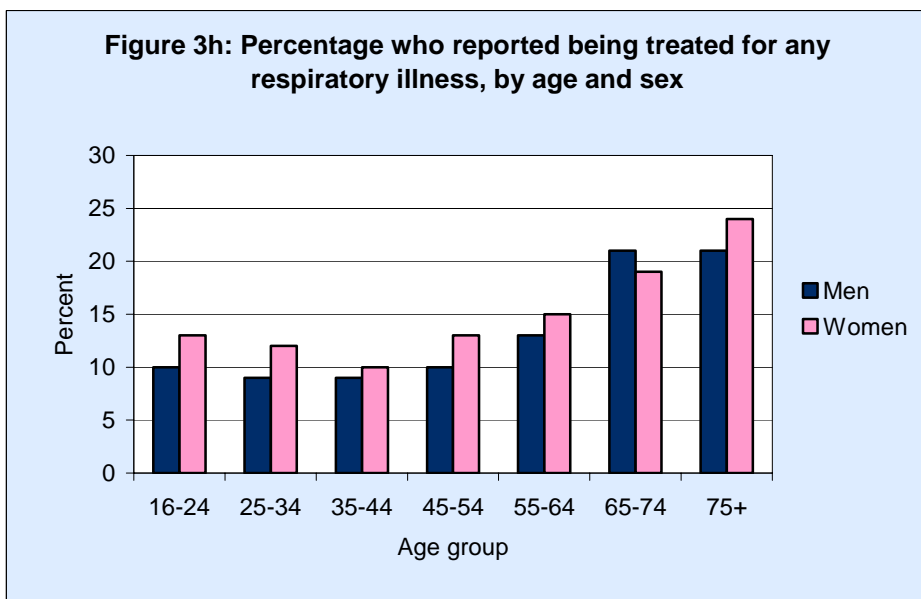


**Respiratory illnesses**

- 10% of adults reported currently being treated for asthma.
- 2% of adults reported currently being treated for bronchitis, 1% for emphysema and 3% for another respiratory illness.
- 13% of adults reported being treated for any respiratory illness.

The percentage of adults who reported being treated for a respiratory illness increased with age (although not for asthma). Figure 3h shows this increase. A slightly higher proportion of women (14%) than men (12%) reported being treated for respiratory illness.

Table 3.4, figure 3h



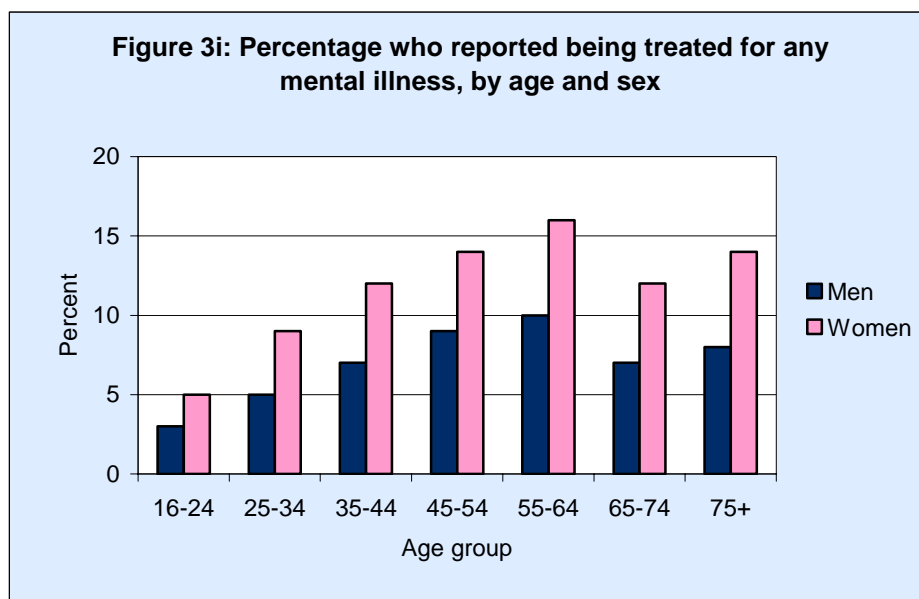
### **Mental illnesses**

- 7% of adults reported currently being treated for depression, 5% for anxiety, and 1% for another mental illness.
- 9% of adults reported currently being treated for any mental illness.

The percentage of adults who reported being treated for depression and for anxiety increased towards middle age before decreasing in retirement age. This pattern was replicated in the percentage who reported being treated for any mental illness, as shown in figure 3i.

A higher percentage of women (12%) than men (7%) reported being treated for a mental illness. This pattern applies to all age groups (shown in figure 3i).

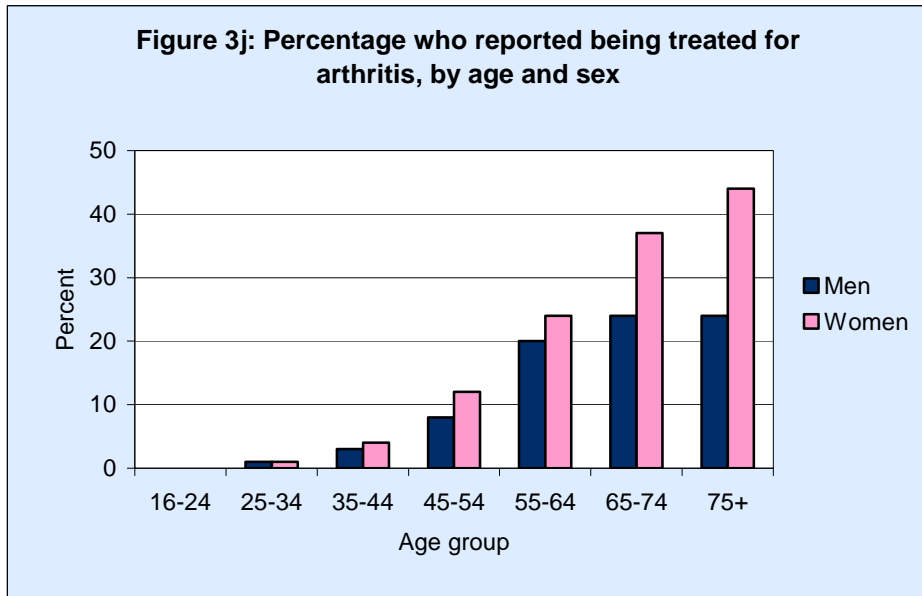
**Table 3.5, figure 3i**



### **Other illnesses**

- 2% of adults reported ever having been treated for a stroke.
- 13% of adults reported currently being treated for arthritis.
- 12% of adults reported currently being treated for back pain.
- 6% of adults reported currently being treated for diabetes.

The percentage of adults who reported ever having been treated for a stroke increased with age (note that this measure represents an individual's accumulated experience of illness over their lifetime). The percentage of adults who reported being treated for the other specified illnesses increased with age. A higher percentage of women than men reported being treated for arthritis and back pain. Arthritis in particular showed a steep increase with age and a big difference between men and women (figure 3j).



As reported above, 6% of adults reported being treated for diabetes. They were asked how their diabetes was controlled, and given a list of options to 'tick all that apply'. Of those who reported being treated for diabetes, 23% reported that they control the disease by injection, 61% by tablets, and 52% by diet (not shown in table).

Table 3.6, figure 3j

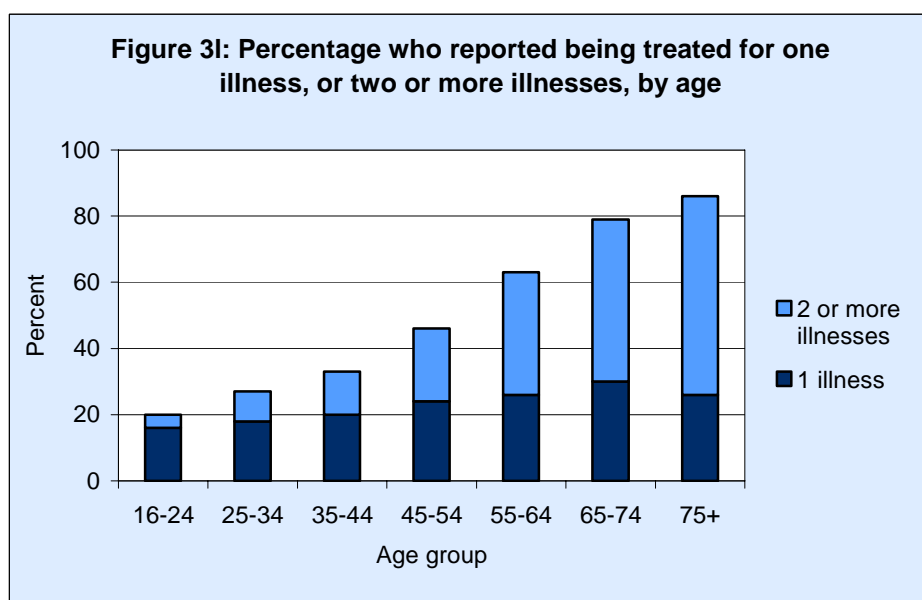
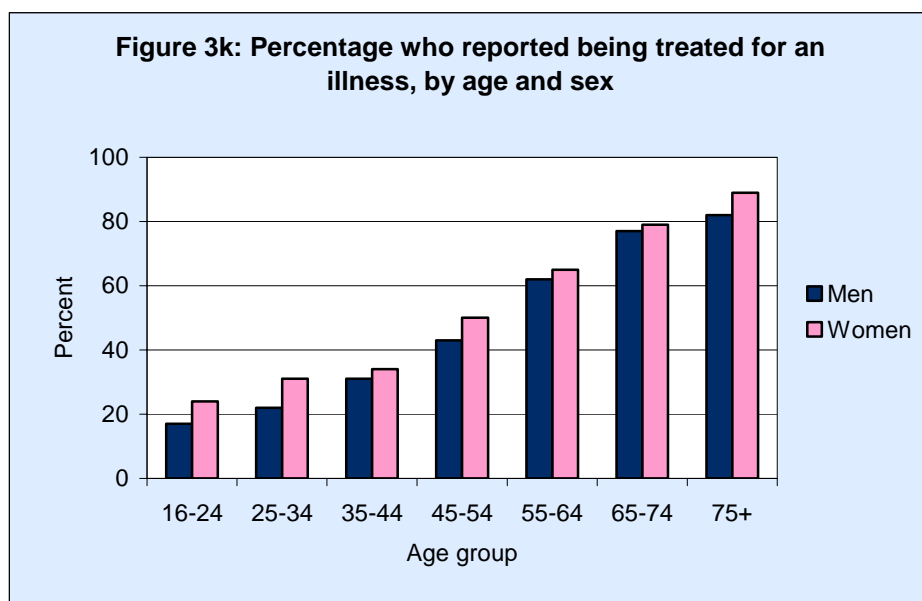
**Any Illness**

- 48% of adults reported currently being treated for an illness (as defined in section 3.4.1).

Figure 3k shows an increase with age in the percentage who reported being treated for an illness. Overall, women (52%) were more likely than men (44%) to report being treated for an illness.

In terms of the number of illnesses reported, 23% of adults reported being treated for one illness only, and 25% reported being treated for two or more illnesses. Figure 3l shows these proportions by age. The percentage who reported two or more illnesses increased with age.

Table 3.7, figures 3k, 3l



### Limiting long-term illness

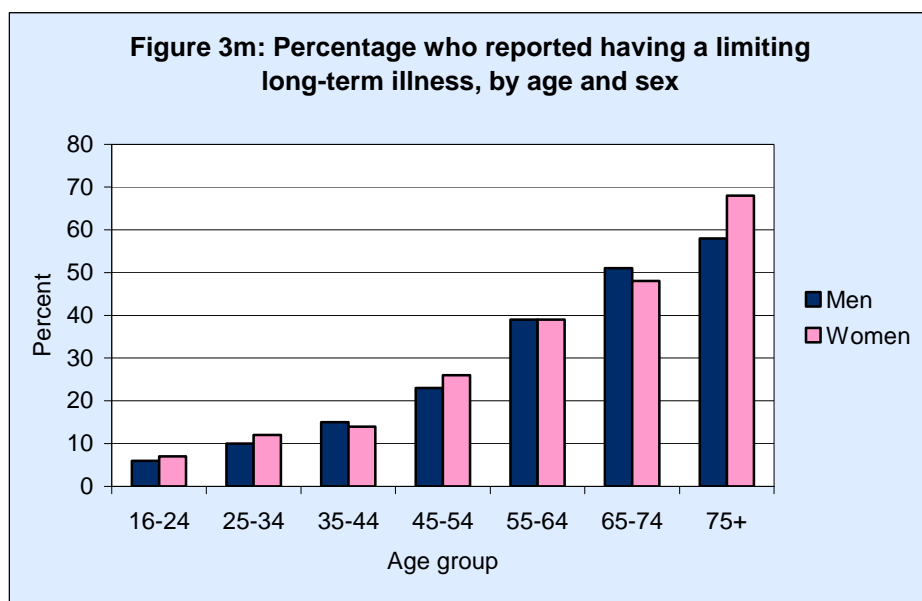
- 27% of adults reported having a limiting long-term illness.

This is consistent with the result from the 2001 Census, where limiting long-term illness was reported for 27% of adults in Wales.

Figure 3m shows an increase with age in the percentage reported as having a limiting long-term illness, with little difference between males and females for most age groups although rates were higher for women aged 75 and over.

As explained in section 3.4.1, adults who reported having a limiting long-term illness were asked to specify the illness which was the main cause of their limitation. By far the most common group of illnesses mentioned here was musculoskeletal problems (49% of those with a limiting long-term illness), followed by diseases of the heart and circulatory system (not shown in table).

**Table 3.7, figure 3m**



## 3.5 Other conditions

### 3.5.1 Methods and definitions

The survey also asked adults about eyesight, hearing, and teeth.

#### **Eyesight**

The survey asked adults whether their eyesight was good enough to see the face of someone across a room, with glasses or contact lenses if they usually wore them. They were able to answer 'yes', 'yes, with difficulty' or 'no'. In this report, those answering 'yes, with difficulty' or 'no' are classified as having an eyesight difficulty.

#### **Hearing**

Respondents were asked whether they had any difficulty with their hearing, without a hearing aid if they usually wore one. If they answered yes, they were asked about the use and effectiveness of hearing aids.

#### **Teeth**

The survey asked adults how many of their own natural teeth they had, with filled and capped teeth counting as their own, but not false teeth nor dentures. Answers were restricted to '21 or more' of their own teeth, or 'less than 21 OR mainly false teeth or dentures'.

### 3.5.2 Results

#### **Eyesight**

- 6% of adults reported having difficulty with their eyesight.

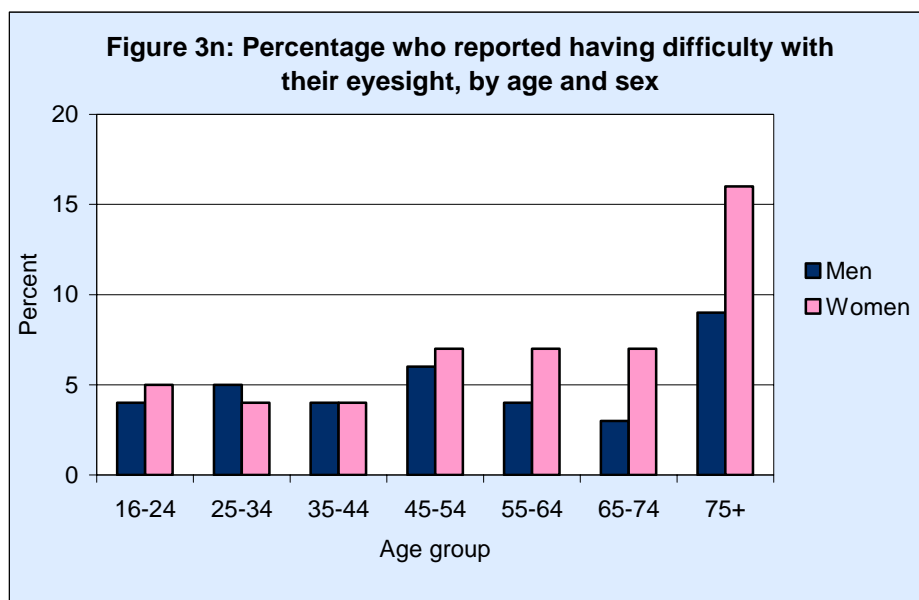
Figure 3n shows that there was a steep increase in the percentage who reported having difficulty with their eyesight for those aged 75 and over. Women were

## Health status, illnesses, and other conditions

more likely to report difficulty with their eyesight than men, particularly the older age groups.

Overall, 3% of adults reported difficulty in being able to see the face of someone across a room, and 3% reported not being able to see the face of someone across a room (not shown in table).

Table 3.8, figure 3n



### Hearing

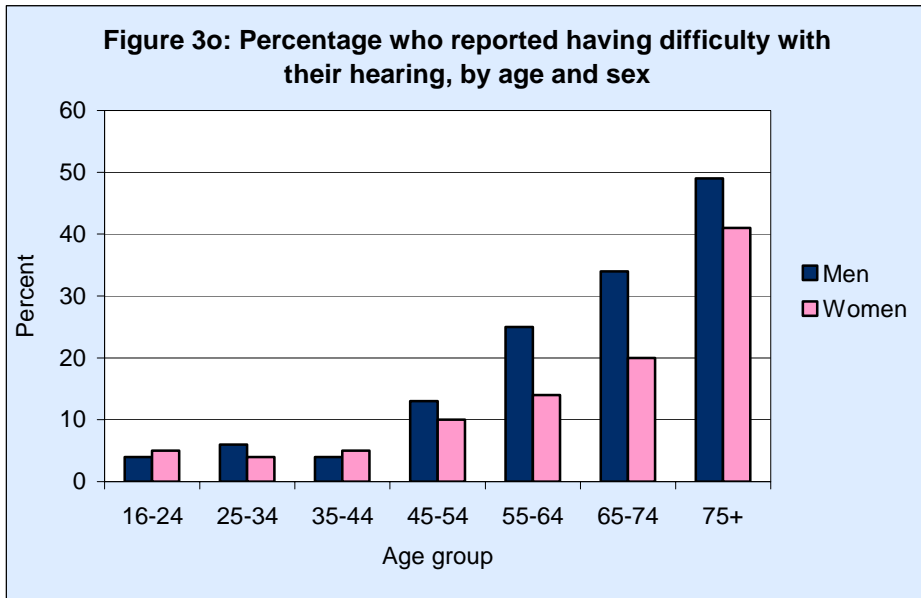
- 15% of adults reported having difficulty with their hearing.

The rate increased with age (figure 3o), and around a third of those aged 65 and over reported a hearing difficulty. Men were more likely than women to report having difficulty with their hearing.

Of those adults who reported having difficulty with their hearing, 57% reported that they did not wear a hearing aid, 9% reported that they did not wear a hearing aid but had tried one, 13% reported wearing a hearing aid some of the time, and 21% reported wearing a hearing aid most of the time (not shown in table).

Of those adults who reported wearing a hearing aid some or most of the time, 44% reported having difficulty with their hearing while wearing the aid (not shown in table).

Table 3.8, figure 3o

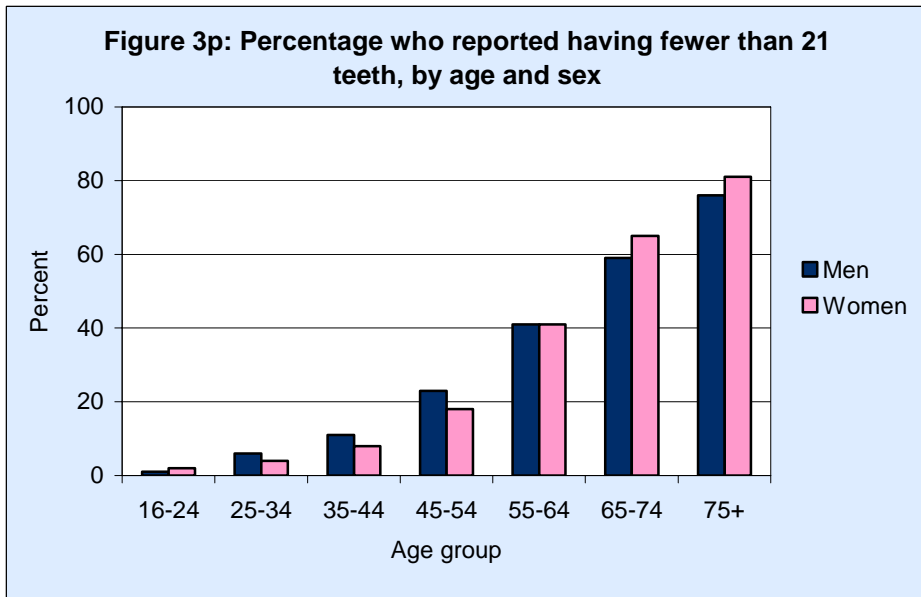


### Teeth

- 28% of adults reported having fewer than 21 of their own teeth, or having mainly false teeth or dentures.

The percentage who reported having fewer than 21 teeth increased with age, shown in figure 3p. There was little difference between men and women.

Table 3.8, figure 3p



## 3.6 Key measures by socio-demographic factors

### 3.6.1 Methods and definitions

For some key variables, information is shown by socio-economic group and area deprivation. Observed and age-standardised rates or means are shown. Age-standardisation removes the effect of age from comparisons between groups, in

this case between different categories of socio-economic group and area deprivation. See the glossary (Appendix A) for further details.

### **Socio-economic group**

The socio-economic classification in use in this report is the 3-class version of the National Statistics Socio-Economic Classification (NS-SEC) of the Household Reference Person (HRP). See the glossary (Appendix A) for further details.

### **Area deprivation**

Area deprivation is based on the Welsh Index of Multiple Deprivation 2008 (WIMD). WIMD gives deprivation scores for small areas in Wales. These small areas were split into five groups (“fifths”) of deprivation according to overall WIMD scores and each respondent to the Welsh Health Survey was allocated to the relevant fifth. See the glossary (Appendix A) for further details.

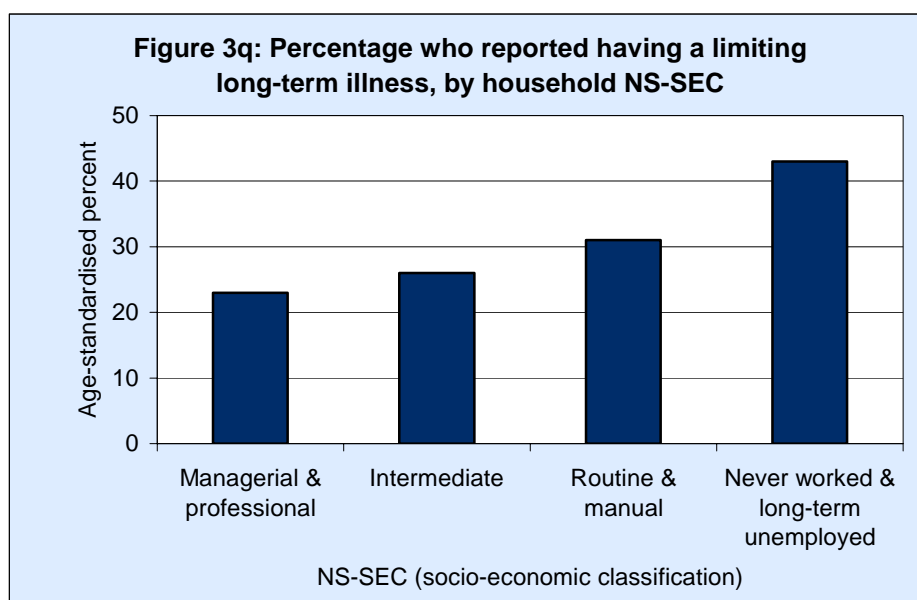
## **3.6.2 Results**

### **Socio-economic group (NS-SEC)**

Overall, levels of ill-health increased from managerial and professional households through to routine and manual households. This general pattern is shown for limiting long-term illness by NS-SEC in figure 3q.

In general, adults in households headed by someone who had never worked or was long-term unemployed were in worst health. (It should be noted that this group includes people unable to work because of long-term sickness or disability.) 43% of adults in these households reported having a limiting long-term illness, compared with 27% overall.

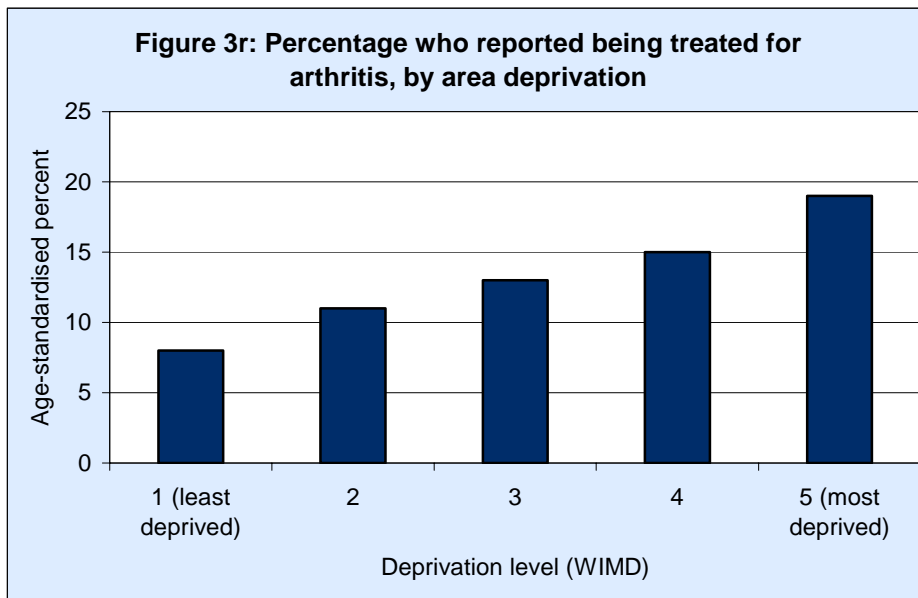
**Table 3.9, figure 3q**



### Area deprivation (WIMD)

In general, levels of ill-health increased with area deprivation. Those in the most deprived fifth showed the highest rates for each of the illnesses covered. This general pattern is shown for arthritis in figure 3r.

Table 3.10, figure 3r



## 3.7 Trends for key measures

### 3.7.1 Methods and definitions

For some key variables, information is shown for the first five years of the survey.

### 3.7.2 Results

For most of the measures shown, there was little change during this time period.

Table 3.11

## References and notes

1. Welsh Health Survey: 2007 + 2008 Local Authority / Health Board Results. [www.wales.gov.uk/statistics](http://www.wales.gov.uk/statistics)
2. Arber, S. (1997) Comparing inequalities in women's and men's health: Britain in the 1990s. *Social Science & Medicine*, 44:773-787.

## Tables

Table 3.1 Adults' reported general health status, by age and sex

Per cent

	Excellent	Very good	Good	Fair	Poor	Unweighted base
<b>Men aged:</b>						
16-24	38	39	19	4	1	709
25-34	25	44	25	5	2	665
35-44	21	41	27	8	3	957
45-54	13	37	32	12	6	993
55-64	9	29	33	19	10	1,162
65-74	8	25	33	24	10	934
75+	4	23	34	28	12	635
16-44	28	41	24	6	2	2,331
45-64	11	33	33	16	8	2,155
65+	6	24	34	25	11	1,569
<b>Men aged 16+</b>	<b>18</b>	<b>35</b>	<b>29</b>	<b>13</b>	<b>6</b>	<b>6,055</b>
<b>Women aged:</b>						
16-24	25	42	27	6	1	788
25-34	24	40	26	9	2	833
35-44	19	41	29	8	3	1,182
45-54	13	34	31	15	6	1,119
55-64	8	31	32	21	7	1,325
65-74	7	25	35	26	8	1,015
75+	3	14	31	39	13	868
16-44	22	41	27	7	2	2,803
45-64	11	33	32	18	7	2,444
65+	5	19	33	33	10	1,883
<b>Women aged 16+</b>	<b>14</b>	<b>33</b>	<b>30</b>	<b>17</b>	<b>6</b>	<b>7,130</b>
<b>All aged:</b>						
16-24	31	40	23	5	1	1,497
25-34	24	42	25	7	2	1,498
35-44	20	41	28	8	3	2,139
45-54	13	36	32	14	6	2,112
55-64	8	30	33	20	9	2,487
65-74	7	25	34	25	9	1,949
75+	3	18	32	35	12	1,503
16-44	25	41	26	7	2	5,134
45-64	11	33	32	17	7	4,599
65+	5	21	33	30	11	3,452
<b>All aged 16+</b>	<b>16</b>	<b>34</b>	<b>29</b>	<b>15</b>	<b>6</b>	<b>13,185</b>

**Table 3.2 Adults' reported SF-36 summary scores, by age and sex (a)**

*Mean*

	Physical component summary score	Mental component summary score	Unweighted base
<b>Men aged:</b>			
16-24	55.3	52.4	676
25-34	55.0	50.7	629
35-44	53.1	50.7	931
45-54	50.2	50.5	941
55-64	45.4	50.4	1,085
65-74	41.2	52.0	815
75+	39.5	51.5	505
16-44	54.4	51.3	2,236
45-64	47.8	50.4	2,026
65+	40.5	51.8	1,320
<b>Men aged 16+</b>	49.8	51.1	5,582
<b>Women aged:</b>			
16-24	54.5	49.1	746
25-34	53.4	48.0	801
35-44	53.0	47.6	1,126
45-54	49.0	47.7	1,062
55-64	44.7	49.4	1,201
65-74	40.7	50.6	838
75+	34.6	48.9	654
16-44	53.6	48.2	2,673
45-64	46.9	48.5	2,263
65+	37.7	49.8	1,492
<b>Women aged 16+</b>	48.2	48.6	6,428
<b>All aged:</b>			
16-24	54.9	50.8	1,422
25-34	54.2	49.3	1,430
35-44	53.1	49.1	2,057
45-54	49.6	49.1	2,003
55-64	45.1	49.9	2,286
65-74	41.0	51.3	1,653
75+	36.6	49.9	1,159
16-44	54.0	49.7	4,909
45-64	47.4	49.5	4,289
65+	39.0	50.7	2,812
<b>All aged 16+</b>	48.9	49.8	12,010

(a) See definitions at 3.3.1 and glossary at Appendix A for explanation of SF-36. Higher scores indicate better health or well-being.

**Table 3.3 Adults who reported being treated for heart disease, by age and sex***Per cent*

	Ever treated for:		Currently being treated for:					<i>Unweighted base (b)</i>
	Heart attack	Angina	Heart failure	High blood pressure	Another heart condition	Any heart condition excluding high blood pressure (a)	Any heart condition including high blood pressure (a)	
<b>Men aged:</b>								
16-24	0	0	0	-	1	1	1	697
25-34	-	0	0	2	1	1	3	658
35-44	1	-	-	6	1	2	7	953
45-54	3	1	1	16	2	4	18	972
55-64	8	6	2	34	7	15	40	1,136
65-74	16	14	4	46	11	29	56	899
75+	24	20	9	50	17	42	66	605
16-44	-	-	-	3	1	1	4	2,308
45-64	5	4	1	25	4	9	29	2,108
65+	19	17	6	47	14	34	60	1,504
<b>Men aged 16+</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>18</b>	<b>4</b>	<b>10</b>	<b>23</b>	<b>5,920</b>
<b>Women aged:</b>								
16-24	-	0	-	1	-	-	1	780
25-34	-	-	-	1	-	1	2	822
35-44	-	-	-	4	1	1	4	1,162
45-54	1	2	-	15	2	4	18	1,078
55-64	2	4	1	31	3	8	35	1,257
65-74	6	10	2	49	7	19	55	951
75+	10	19	6	59	14	34	70	816
16-44	-	-	-	2	-	1	2	2,764
45-64	1	3	1	23	3	6	26	2,335
65+	8	15	4	54	11	26	63	1,767
<b>Women aged 16+</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>20</b>	<b>3</b>	<b>8</b>	<b>24</b>	<b>6,866</b>
<b>All aged:</b>								
16-24	-	0	-	-	-	1	1	1,477
25-34	-	-	-	1	1	1	2	1,480
35-44	1	-	-	5	1	1	6	2,115
45-54	2	1	1	15	2	4	18	2,050
55-64	5	5	1	32	5	11	37	2,393
65-74	11	12	3	47	9	24	55	1,850
75+	15	19	7	55	15	37	69	1,421
16-44	-	-	-	2	1	1	3	5,072
45-64	3	3	1	24	3	8	28	4,443
65+	13	15	5	51	12	30	62	3,271
<b>All aged 16+</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>19</b>	<b>4</b>	<b>9</b>	<b>23</b>	<b>12,786</b>

(a) See definitions at 3.4.1.

(b) Bases vary: those shown are for 'any heart condition including high blood pressure'.

**Table 3.4 Adults who reported currently being treated for respiratory illnesses, by age and sex***Per cent*

	Asthma	Emphysema	Pleurisy	Bronchitis	Another respiratory illness	Any respiratory illness (a)	Unweighted base (b)
<b>Men aged:</b>							
16-24	8	0	0	-	1	10	700
25-34	8	-	-	1	1	9	659
35-44	7	-	0	1	1	9	950
45-54	8	-	-	1	2	10	971
55-64	8	2	-	3	5	13	1,108
65-74	14	5	-	4	8	21	857
75+	10	4	-	5	11	21	557
16-44	8	-	-	1	1	9	2,309
45-64	8	1	-	2	3	11	2,079
65+	12	4	-	4	9	21	1,414
<b>Men aged 16+</b>	9	1	-	2	3	12	5,802
<b>Women aged:</b>							
16-24	12	0	-	-	1	13	780
25-34	11	-	-	1	2	12	825
35-44	9	-	-	1	2	10	1,166
45-54	10	1	-	2	2	13	1,095
55-64	10	1	-	3	5	15	1,248
65-74	14	3	1	4	6	19	904
75+	14	4	2	6	8	24	740
16-44	10	-	-	1	1	12	2,771
45-64	10	1	-	2	4	14	2,343
65+	14	3	1	5	7	21	1,644
<b>Women aged 16+</b>	11	1	-	2	3	14	6,758
<b>All aged:</b>							
16-24	10	0	-	-	1	11	1,480
25-34	9	-	-	1	1	11	1,484
35-44	8	-	-	1	1	9	2,116
45-54	9	1	-	1	2	11	2,066
55-64	9	2	-	3	5	14	2,356
65-74	14	4	-	4	7	20	1,761
75+	12	4	1	5	10	23	1,297
16-44	9	-	-	1	1	10	5,080
45-64	9	1	-	2	3	12	4,422
65+	13	4	1	5	8	21	3,058
<b>All aged 16+</b>	10	1	-	2	3	13	12,560

(a) See definitions at 3.4.1.

(b) Bases vary: those shown are for 'any respiratory illness'.

**Table 3.5 Adults who reported currently being treated for mental illnesses, by age and sex***Per cent*

	Depression	Anxiety	Another mental illness	Any mental illness (a)	Unweighted base (b)
<b>Men aged:</b>					
16-24	2	2	1	3	708
25-34	4	4	3	5	663
35-44	5	3	2	7	960
45-54	7	5	2	9	979
55-64	8	6	1	10	1,121
65-74	5	4	1	7	859
75+	5	3	1	8	578
16-44	4	3	2	5	2,331
45-64	7	6	1	9	2,100
65+	5	3	1	7	1,437
<b>Men aged 16+</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>7</b>	<b>5,868</b>
<b>Women aged:</b>					
16-24	4	3	1	5	784
25-34	8	5	2	9	828
35-44	10	7	2	12	1,177
45-54	13	9	1	14	1,106
55-64	13	10	1	16	1,247
65-74	9	8	1	12	916
75+	10	7	2	14	758
16-44	7	5	2	9	2,789
45-64	13	9	1	15	2,353
65+	10	8	1	13	1,674
<b>Women aged 16+</b>	<b>10</b>	<b>7</b>	<b>1</b>	<b>12</b>	<b>6,816</b>
<b>All aged:</b>					
16-24	3	2	1	4	1,492
25-34	6	4	2	7	1,491
35-44	8	5	2	10	2,137
45-54	10	7	1	12	2,085
55-64	11	8	1	13	2,368
65-74	7	6	1	10	1,775
75+	8	6	2	11	1,336
16-44	6	4	2	7	5,120
45-64	10	7	1	12	4,453
65+	8	6	1	10	3,111
<b>All aged 16+</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>9</b>	<b>12,684</b>

(a) See definitions at 3.4.1.

(b) Bases vary: those shown are for 'any mental illness'.

**Table 3.6 Adults who reported being treated for a range of illnesses, by age and sex***Per cent*

	Ever treated for:	Currently being treated for:				<i>Unweighted base (b)</i>
	Stroke	Arthritis	Back pain	Diabetes (a)		
<b>Men aged:</b>						
16-24	-	-	3	-	714	
25-34	-	1	5	2	670	
35-44	-	3	8	2	966	
45-54	1	8	11	7	1,000	
55-64	4	20	16	11	1,177	
65-74	8	24	17	16	945	
75+	12	24	16	19	647	
16-44	-	2	6	1	2,350	
45-64	2	14	14	9	2,177	
65+	10	24	17	18	1,592	
<b>Men aged 16+</b>	3	10	10	7	6,119	
<b>Women aged:</b>						
16-24	-	-	3	-	793	
25-34	-	1	6	-	838	
35-44	1	4	9	1	1,188	
45-54	1	12	13	5	1,126	
55-64	2	24	19	7	1,334	
65-74	4	37	23	14	1,029	
75+	10	44	30	16	886	
16-44	1	2	6	1	2,819	
45-64	1	18	16	6	2,460	
65+	7	40	27	15	1,915	
<b>Women aged 16+</b>	2	16	14	6	7,194	
<b>All aged:</b>						
16-24	-	-	3	-	1,507	
25-34	-	1	5	1	1,508	
35-44	1	4	9	2	2,154	
45-54	1	10	12	6	2,126	
55-64	3	22	18	9	2,511	
65-74	6	31	20	15	1,974	
75+	11	36	24	17	1,533	
16-44	-	2	6	1	5,169	
45-64	2	16	15	8	4,637	
65+	8	33	22	16	3,507	
<b>All aged 16+</b>	2	13	12	6	13,313	

(a) See definitions at 3.4.1.

(b) Bases vary: those shown are for the whole sample.

**Table 3.7 Adults who reported having illnesses, or limiting long-term illness, by age and sex**

*Per cent*

	Any illness (a)	1 illness	2 or more illnesses	Limiting long-term illness (a)	Unweighted base (b)
<b>Men aged:</b>					
16-24	17	12	4	6	714
25-34	22	14	7	10	670
35-44	31	21	10	15	966
45-54	43	24	19	23	1,000
55-64	62	25	37	39	1,177
65-74	77	30	47	51	945
75+	82	28	54	58	647
16-44	23	16	7	11	2,350
45-64	53	25	28	31	2,177
65+	79	29	50	54	1,592
<b>Men aged 16+</b>	44	21	23	26	6,119
<b>Women aged:</b>					
16-24	24	19	5	7	793
25-34	31	22	10	12	838
35-44	34	19	15	14	1,188
45-54	50	25	25	26	1,126
55-64	65	27	38	39	1,334
65-74	79	29	50	48	1,029
75+	89	25	63	68	886
16-44	30	20	10	11	2,819
45-64	58	26	32	33	2,460
65+	84	27	57	58	1,915
<b>Women aged 16+</b>	52	24	28	29	7,194
<b>All aged:</b>					
16-24	20	16	4	7	1,507
25-34	27	18	9	11	1,508
35-44	33	20	13	15	2,154
45-54	47	24	22	25	2,126
55-64	64	26	37	39	2,511
65-74	78	30	49	49	1,974
75+	86	26	60	64	1,533
16-44	27	18	9	11	5,169
45-64	55	25	30	32	4,637
65+	82	28	54	56	3,507
<b>All aged 16+</b>	48	23	25	27	13,313

(a) See definitions at 3.4.1.

(b) Bases vary: those shown are for the whole sample.

**Table 3.8 Adults who reported other conditions, by age and sex (a)***Per cent*

	Eyesight difficulty	Hearing difficulty	Has fewer than 21 teeth	Unweighted base (b)
<b>Men aged:</b>				
16-24	4	4	1	714
25-34	5	6	6	670
35-44	4	4	11	966
45-54	6	13	23	1,000
55-64	4	25	41	1,177
65-74	3	34	59	945
75+	9	49	76	647
16-44	4	5	6	2,350
45-64	5	19	32	2,177
65+	6	40	66	1,592
<b>Men aged 16+</b>	<b>5</b>	<b>16</b>	<b>27</b>	<b>6,119</b>
<b>Women aged:</b>				
16-24	5	5	2	793
25-34	4	4	4	838
35-44	4	5	8	1,188
45-54	7	10	18	1,126
55-64	7	14	41	1,334
65-74	7	20	65	1,029
75+	16	41	81	886
16-44	4	5	5	2,819
45-64	7	12	29	2,460
65+	12	31	73	1,915
<b>Women aged 16+</b>	<b>7</b>	<b>13</b>	<b>29</b>	<b>7,194</b>
<b>All aged:</b>				
16-24	4	5	1	1,507
25-34	5	5	5	1,508
35-44	4	5	10	2,154
45-54	6	11	21	2,126
55-64	6	19	41	2,511
65-74	5	27	62	1,974
75+	13	44	79	1,533
16-44	4	5	6	5,169
45-64	6	15	31	4,637
65+	9	35	70	3,507
<b>All aged 16+</b>	<b>6</b>	<b>15</b>	<b>28</b>	<b>13,313</b>

(a) See definitions at 3.5.1.

(b) Bases vary: those shown are for the whole sample.

**Table 3.9 Adults who reported key illnesses or health status, by the National Statistics Socio-Economic Classification (NS-SEC) of the household reference person (a)**

Socio-economic classification of household reference person	Currently being treated for:					
	High blood pressure	Any heart condition excluding high blood pressure (b)	Any respiratory illness (b)	Any mental illness (b)	Arthritis	Diabetes (b)
	%	%	%	%	%	%
<b>Age-standardised</b>						
Managerial and professional	18	8	11	7	9	5
Intermediate	18	7	12	8	11	5
Routine and manual	21	10	15	11	16	8
Never worked and long-term unemployed	25	13	22	27	19	9
<b>Observed</b>						
Managerial and professional	17	8	11	8	9	5
Intermediate	19	8	12	8	12	6
Routine and manual	22	11	15	11	17	8
Never worked and long-term unemployed	24	13	21	26	18	8
<b>All aged 16+</b>	19	9	13	9	13	6

(a) See definitions at 3.6.1 and glossary at Appendix A for explanations of age-standardisation, National Statistics Socio-Economic Classification, and household reference person.

(b) See definitions at 3.4.1.

(c) See definitions at 3.3.1. Higher scores indicate better health or well-being.

(d) Bases vary: those shown are for the whole sample.

**Table 3.9 Adults who reported key illnesses or health status, by the National Statistics Socio-Economic Classification (NS-SEC) of the household reference person (a) (continued)**

Socio-economic classification of household reference person	Limiting long-term illness (b)	SF-36 Physical component summary score (c)	SF-36 Mental component summary score (c)	<i>Unweighted base (d)</i>
	%	<i>Mean</i>	<i>Mean</i>	
<b>Age-standardised</b>				
Managerial and professional	23	50.4	51.1	4,524
Intermediate	26	49.4	50.6	2,533
Routine and manual	31	47.6	48.9	5,495
Never worked and long-term unemployed	43	44.3	42.6	263
<b>Observed</b>				
Managerial and professional	23	50.4	51.1	4,524
Intermediate	27	49.1	50.6	2,533
Routine and manual	32	47.3	48.9	5,495
Never worked and long-term unemployed	41	45.8	42.4	263
<b>All aged 16+</b>	27	48.9	49.8	13,313

(a) See definitions at 3.6.1 and glossary at Appendix A for explanations of age-standardisation, National Statistics Socio-Economic Classification, and household reference person.

(b) See definitions at 3.4.1.

(c) See definitions at 3.3.1. Higher scores indicate better health or well-being.

(d) Bases vary: those shown are for the whole sample.

**Table 3.10 Adults who reported key illnesses or health status, by the Welsh Index of Multiple Deprivation (a)**

2008 Welsh Index of Multiple Deprivation quintile	Currently being treated for:					
	High blood pressure	Any heart condition excluding high blood pressure (b)	Any respiratory illness (b)	Any mental illness (b)	Arthritis	Diabetes (b)
	%	%	%	%	%	%
<b>Age-standardised</b>						
1 (least deprived)	17	8	11	6	8	5
2	19	8	10	8	11	6
3	19	9	14	9	13	6
4	20	9	14	11	15	7
5 (most deprived)	22	11	18	13	19	9
<b>Observed</b>						
1 (least deprived)	18	8	11	6	9	5
2	19	9	10	8	11	6
3	20	9	14	9	14	6
4	19	9	14	11	14	6
5 (most deprived)	20	10	18	13	17	9
<b>All aged 16+</b>	19	9	13	9	13	6

- (a) See definitions at 3.6.1. and glossary at Appendix A for explanations of age-standardisation and Welsh Index of Multiple Deprivation.
- (b) See definitions at 3.4.1.
- (c) See definitions at 3.3.1. Higher scores indicate better health or well-being.
- (d) Bases vary: those shown are for the whole sample.

**Table 3.10 Adults who reported key illnesses or health status, by the Welsh Index of Multiple Deprivation (a) (continued)**

2008 Welsh Index of Multiple Deprivation quintile	Limiting long-term illness (b) %	SF-36 Physical component summary score (c) <i>Mean</i>	SF-36 Mental component summary score (c) <i>Mean</i>	<i>Unweighted base (d)</i>
<b>Age-standardised</b>				
1 (least deprived)	23	50.8	51.1	2,579
2	25	49.6	50.8	2,772
3	28	48.9	50.0	2,999
4	29	48.3	49.2	2,583
5 (most deprived)	34	46.6	47.4	2,380
<b>Observed</b>				
1 (least deprived)	24	50.5	51.2	2,579
2	25	49.4	50.8	2,772
3	29	48.8	50.0	2,999
4	28	48.6	49.2	2,583
5 (most deprived)	32	47.2	47.5	2,380
<b>All aged 16+</b>	27	48.9	49.8	13,313

- (a) See definitions at 3.6.1 and glossary at Appendix A for explanations of age-standardisation and Welsh Index of Multiple Deprivation.
- (b) See definitions at 3.4.1.
- (c) See definitions at 3.3.1. Higher scores indicate better health or well-being.
- (d) Bases vary: those shown are for the whole sample.

**Table 3.11 Adults who reported key illnesses or health status, 2003/04-2008**

		2003/04	2004/05	2005/06	2007 (a)	2008
<b>Men aged 16+:</b>						
High blood pressure (b)	%	17	17	18	19	18
Any heart condition excluding high blood pressure (b)	%	11	10	10	11	10
Any respiratory illness (b)	%	12	13	13	13	12
Any mental illness (b)	%	7	7	7	7	7
Arthritis (b)	%	11	10	10	9	10
Diabetes (b)	%	5	6	7	6	7
Limiting long-term illness (c)	%	28	27	26	26	26
SF-36 Physical component summary score (d)	<i>Mean</i>	49.3	49.4	49.6	49.5	49.8
SF-36 Mental component summary score (d)	<i>Mean</i>	51.0	50.8	51.1	51.1	51.1
<b>Women aged 16+:</b>						
High blood pressure (b)	%	19	20	21	20	20
Any heart condition excluding high blood pressure (b)	%	9	9	8	8	8
Any respiratory illness (b)	%	14	14	15	15	14
Any mental illness (b)	%	11	12	11	12	12
Arthritis (b)	%	17	17	16	16	16
Diabetes (b)	%	5	4	5	6	6
Limiting long-term illness (c)	%	28	28	28	28	29
SF-36 Physical component summary score (d)	<i>Mean</i>	48.3	47.9	48.3	48.1	48.2
SF-36 Mental component summary score (d)	<i>Mean</i>	48.6	48.5	48.5	48.9	48.6
<b>All aged 16+:</b>						
High blood pressure (b)	%	18	19	20	20	19
Any heart condition excluding high blood pressure (b)	%	10	9	9	9	9
Any respiratory illness (b)	%	13	14	14	14	13
Any mental illness (b)	%	9	9	9	9	9
Arthritis (b)	%	14	14	13	13	13
Diabetes (b)	%	5	5	6	6	6
Limiting long-term illness (c)	%	28	27	27	27	27
SF-36 Physical component summary score (d)	<i>Mean</i>	48.8	48.6	48.9	48.8	48.9
SF-36 Mental component summary score (d)	<i>Mean</i>	49.8	49.6	49.8	50.0	49.8
<b>Unweighted bases (e)</b>						
<i>Men aged 16+</i>		7,486	7,437	6,691	6,418	6,119
<i>Women aged 16+</i>		8,812	8,598	7,614	7,499	7,194
<i>All aged 16+</i>		16,298	16,035	14,305	13,917	13,313

(a) From 2007 the fieldwork runs on a calendar year basis.

(b) Currently being treated for illness; see definitions at 3.4.1.

(c) See definitions at 3.4.1.

(d) See definitions at 3.3.1. Higher scores indicate better health or well-being.

(e) Bases vary: those shown are for the whole sample.



## 4 Health-related lifestyle

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### 4.1 Introduction

This chapter focuses on the reported health-related lifestyles of adults.

Broad figures for Wales are provided along with age and sex breakdowns. For a selection of key measures, information is provided by socio-economic group and area deprivation. Some comparisons with earlier years are also shown. Local authority / health board breakdowns for 2007 + 2008 combined are provided in a separate report<sup>1</sup>.

The survey asked adults (aged 16 and over) about their lifestyle, including questions about their exposure to other people's tobacco smoke. In addition, respondents were asked to provide their height and weight.

The survey relies on a self-completion questionnaire, so care should be taken when making comparisons with results from other surveys, for example, when making comparisons of levels of obesity with those from surveys where height and weight is measured by an interviewer or nurse.

This chapter includes information on:

- smoking (4.3)
- alcohol (4.4)
- fruit and vegetable consumption (4.5)
- physical activity (4.6)
- body mass index (4.7)
- key measures by socio-demographic factors (4.8)
- trends for key measures (4.9).

## 4.2 Summary

- 24% of adults reported that they currently smoked.
- 23% of adult non-smokers reported being regularly exposed to other people's tobacco smoke indoors, and 34% indoors or outdoors.
- 45% of adults reported drinking above the guidelines on at least one day in the past week, including 28% who reported binge drinking.
- 36% of adults reported eating five or more portions of fruit and vegetables the previous day.
- 30% of adults reported meeting the guidelines for physical activity in the past week.
- 57% of adults were classified as overweight or obese, including 21% obese.
- In general, men were more likely to drink alcohol above the guidelines and be overweight (but not obese) than women, but also more likely to meet guidelines for physical activity. A slightly higher percentage of women met guidelines for consuming fruit and vegetables. There was little difference in the proportion of men and women smokers.
- Overall, the percentage of smokers and of those drinking alcohol above guidelines decreased with age, as did the percentage who met guidelines for physical activity. The percentage of adults who were overweight or obese, and the percentage of those who met guidelines for consumption of fruit and vegetables showed some increase with age before peaking and declining for older people.
- In general, adults in the least deprived areas reported healthier lifestyles than those in the most deprived areas, but not for alcohol consumption or physical activity. Smoking rates showed the most variation.
- Smoking rates remained unchanged between 2007 and 2008, slightly lower than in previous years of the survey.
- There was little change in physical activity over the five years of the survey. Levels of overweight and obesity remained unchanged between 2007 and 2008, following a slight increase in earlier years.

## 4.3 Smoking

### 4.3.1 Method and definitions

The survey asked adults whether they smoked (daily or occasionally), used to smoke (daily or occasionally), or had never smoked. Those who reported smoking were asked where they had smoked in the last 7 days, if they had tried to or wanted to give up, and their reasons for wanting to give up.

It also asked whether respondents were regularly exposed to other people's tobacco smoke in a range of places.

#### **Question change**

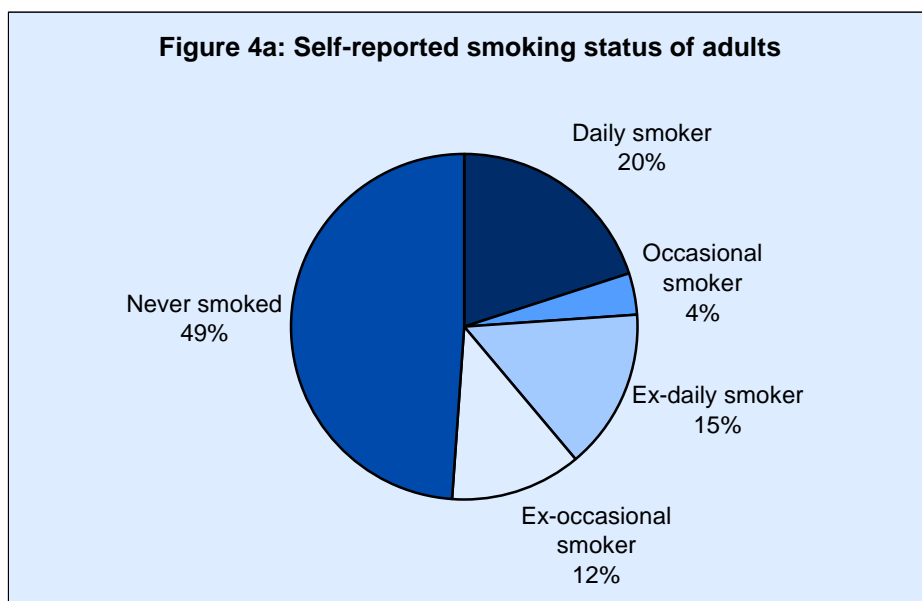
Questions on smoking location and exposure to others' smoke were revised to reflect the ban on smoking in enclosed public places (implemented in April 2007)<sup>2</sup>. Locations where smoking is no longer permitted were removed from the existing questions on where people smoke and are exposed to smoke, and additional changes made as a result of testing the new questions. Results for earlier years are therefore not comparable.

### 4.3.2 Results

#### **Smoking status**

Figure 4a shows the reported smoking behaviour of adult respondents.

- 24% of adults reported that they currently smoked.
- 28% of adults reported that they had given up smoking.
- 49% of adults reported that they had never smoked.

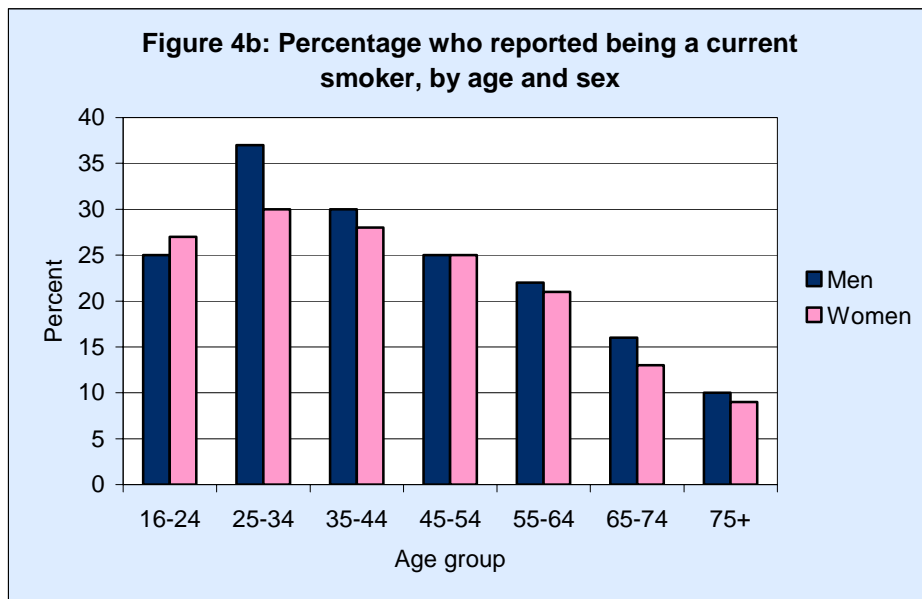


Overall, there was little difference between men and women in the proportion who reported smoking. As shown in figure 4b, the proportion

## Health-related lifestyle

of smokers peaked among 25-34 year olds, particularly for men, and then decreased with age.

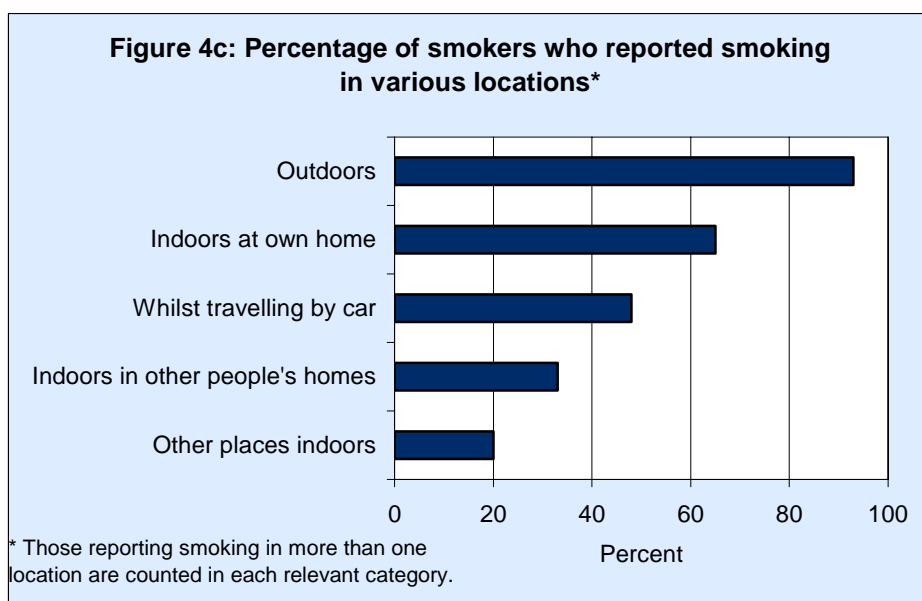
Table 4.1, figures 4a, 4b



### Where people smoked

- 65% of smokers reported smoking in their own home in the last 7 days, 33% in other people's homes, 48% whilst travelling by car and 20% in other places indoors (respondents were allowed to record more than one smoking location). Overall, 79% of smokers reported smoking indoors, 93% outdoors.

Table 4.2, figure 4c



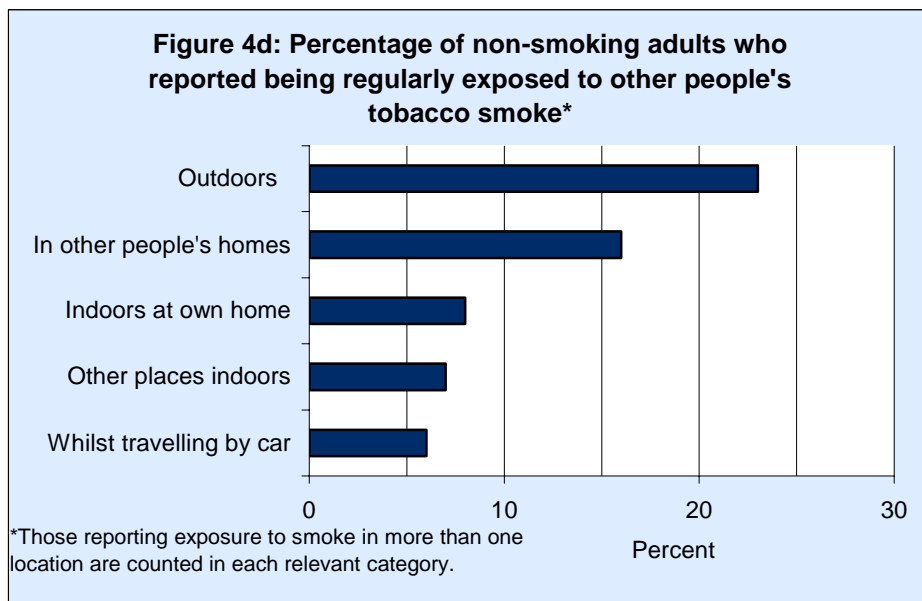
### ***Giving up smoking***

69% of smokers reported that they would like to give up and 40% had tried to give up in the last year (not shown in tables). The main reason for wanting to give up was for better health.

### ***Exposure to other people's smoke***

- Overall, 23% of adult non-smokers reported being regularly exposed to other people's tobacco smoke indoors, and 34% indoors or outdoors.

Figure 4d shows the percentage of non-smoking adults who reported being regularly exposed to other people's tobacco smoke in a range of places.



Of all adult non-smokers, 16% reported being exposed to other people's smoke in other people's homes, 8% in their own homes, 6% whilst travelling by car, and 7% in other places indoors. Adults' reported exposure to other people's smoke decreased with age, and this applied for all the places specified.

**Table 4.3, figure 4d**

### ***Children living in households where adults smoke***

As well as questions about smoking, the Welsh Health Survey asks about the composition of the household. It is therefore possible to identify households containing children and look at the smoking behaviour of adults in these households. 42% of children lived in households where at least one adult smoked daily or occasionally, and 21% in households where at least one adult had smoked in the home in the past seven days.

## 4.4 Alcohol

### 4.4.1 Method and definitions

The survey asked adults a set of questions about their alcohol consumption. Respondents were asked how often, on average, they drank alcohol and, if never, whether they had always been a non-drinker.

Respondents were asked to indicate how many measures of each type of alcohol they had consumed on their heaviest drinking day the previous week. The following table was used to calculate the units drunk on that day:

Type of drink	Measure	Alcohol units
Normal strength beer, lager, stout, cider or shandy	Pints	2
	Large cans or bottles	2
	Small cans or bottles	1.5
Strong beer, lager, stout or cider	Pints	4
	Large cans or bottles	3
	Small cans or bottles	2
Wine	Large glass (250ml)	3
	Standard glass (175ml)	2
	Small glass (125ml)	1.5
	Bottles (750ml)	9
Spirits or liqueurs	Measures or shots (single measure)	1
Fortified wines	Small glass	1
Alcopops	Small can or bottle	1.5

The Department of Health guidelines about sensible drinking<sup>3</sup> are that men should not drink more than 3 - 4 units of alcohol per day, and women no more than 2 - 3 units.

For the purpose of this report, the following definitions of drinking are used, based on the heaviest drinking day in the past week:

Description	Maximum daily alcohol consumption in the past week
None	Did not drink in the last seven days
Sensible	Drank something; men drinking no more than 4 units, women no more than 3 units
Within guidelines	Includes those who did not drink, and men drinking no more than 4 units, women no more than 3 units
Above guidelines, less than binge	Men drinking more than 4 and up to and including 8 units, women more than 3 and up to and including 6 units
Binge	Men drinking more than 8 units, women more than 6 units
Above guidelines	Men drinking more than 4 units, women more than 3 units

### Question change

The alcohol questions were reviewed and subsequently changed for the 2008 survey<sup>2</sup>. Results for 2008 are therefore not comparable with previous years.

The question change was partly to address concerns that the existing questions (which required respondents to calculate total units consumed) placed too high a burden on respondents. By reducing this burden, it was hoped that the data quality and accuracy would be improved.

In addition, the change took account of recommendations from ONS regarding changing glass sizes and alcoholic strengths of drinks<sup>4</sup>. Experience in other surveys suggests that this change will lead to a substantial increase in estimates of alcohol consumption (particularly for women), but that this apparent increase does not reflect a real change in drinking among the population.

The question on drinking frequency was revised for consistency with the Health Survey for England.

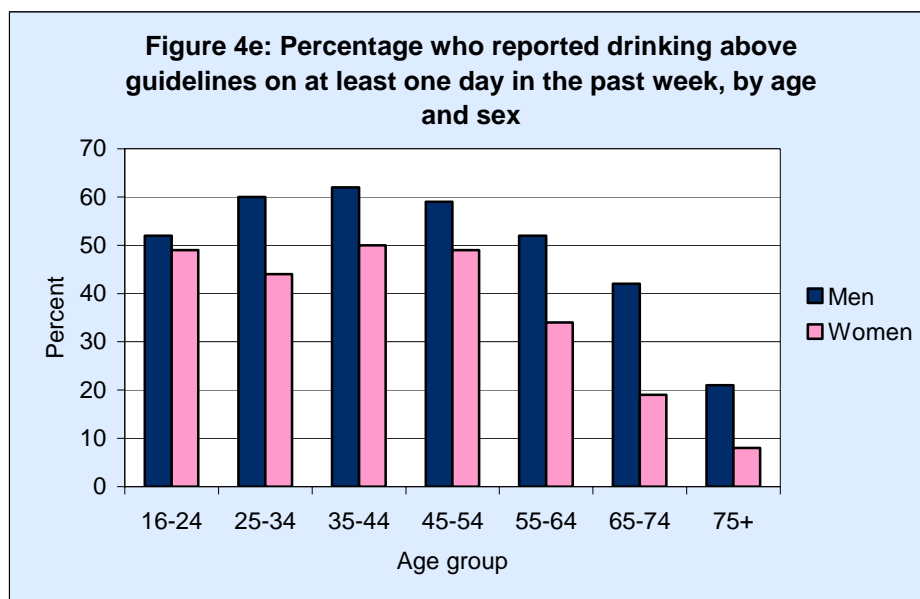
#### 4.4.2 Results

- 12% of adults reported that they were non-drinkers.
- 45% of all adults (i.e. including non-drinkers) reported drinking above the recommended guidelines on at least one day in the past week, including 28% who reported binge drinking.

Men were more likely than women to report drinking above the recommended guidelines in the past week (52% of men compared with 38% of women), and to report binge drinking (35% of men, 22% of women). This pattern applied to all age groups.

Drinking above guidelines was less common in older people, as seen in figure 4e.

Tables 4.4, 4.5, figure 4e



## 4.5 Fruit and vegetable consumption

### 4.5.1 Method and definitions

The survey asked adults questions about a range of food items to determine the overall amounts of fruit, vegetables and pulses consumed the previous day. The questionnaire could be completed on any day of the week.

For each food item, respondents were asked how much they had consumed, and to write "0" if none eaten. Everyday measures were given for each food item: for example, tablespoons of vegetables, small bowls of salad, or medium sized fruit (such as apples). Each question provided a definition of which foods were to be included. Guidelines<sup>5, 6</sup> recommend eating at least five portions of a variety of fruit and vegetables each day. To conform with these guidelines, the questions and analysis were based on the concept of portions of 80g each and the information collected was converted into standard portions at the analysis stage.

The table below shows portion sizes for the different food items included in the questionnaire.

<b>Food item</b>	<b>Portion size</b>
Vegetables (fresh, frozen or tinned)	3 tablespoons
Pulses	3 tablespoons
Salad	1 small bowl
Dishes made mainly from vegetables or pulses	3 tablespoons
Very large fruit, such as melon	1 average slice
Large fruit, such as grapefruit	Half a fruit
Medium fruit, such as apples, bananas, oranges	1 fruit
Small fruit, such as plums, satsumas	2 fruits
Very small fruit, such as grapes, berries	2 average handfuls
Dried fruit, such as raisins, apricots	1 average handful
Frozen/tinned fruit	3 tablespoons
Dishes made mainly from fruit such as fruit salad or fruit pies	3 tablespoons
Fruit juice	1 small glass

At the analysis stage, rules for certain foods were applied: respondents could obtain no more than one portion of their daily intake from fruit juice, one portion from pulses, and one portion from dried fruit. These restrictions are in line with guidelines, which emphasise that a variety of fruit and vegetables should be consumed.

## Question change

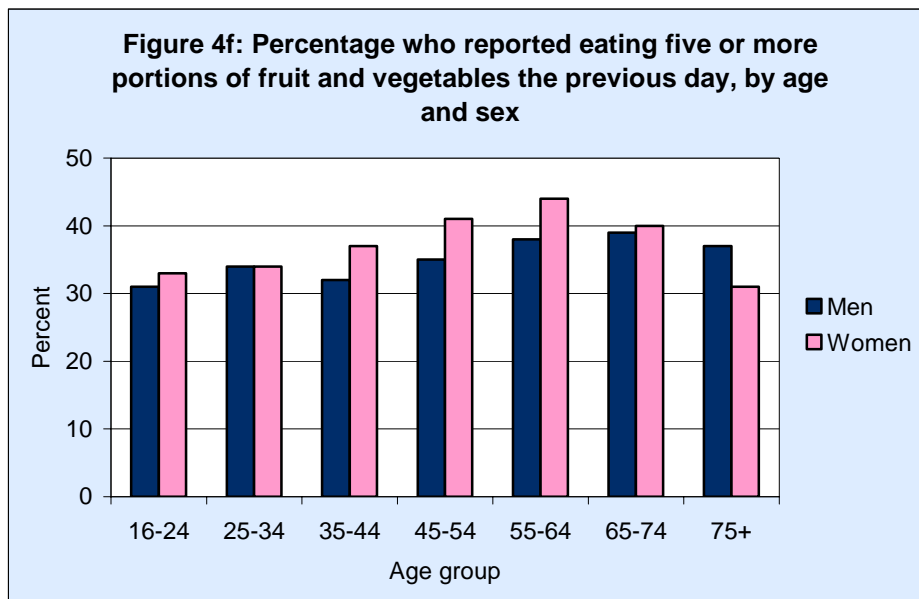
Analysis of previous years' responses on fruit and vegetable consumption showed overall consumption to be higher than expected (compared with other UK surveys). Questions were tested and, as a result of recommendations, a number of changes were made to address the issue<sup>2</sup>. The new questions have resulted in lower estimates for 2008, which are not comparable with those from previous years.

### 4.5.2 Results

- 36% of adults reported eating five or more portions of fruit and vegetables the previous day.
- 7% of adults reported that they ate no fruit and vegetables at all the previous day.

As shown in figure 4f, the proportions of both men and women who reported eating the recommended five or more portions a day fluctuated with age. For women, rates increased with age until age 55-64 and then fell. For men, there was less variation but rates tended to be higher for middle aged and older men. Overall, a slightly higher proportion of women (37%) than men (35%) reported eating five or more portions.

Table 4.6, figure 4f



## 4.6 Physical activity

### 4.6.1 Method and definitions

Department of Health guidelines<sup>7</sup> currently recommend that adults do at least 30 minutes of at least moderate intensity physical activity, on five or more days a week.

The survey asked adults on which days in the past week they did at least 30 minutes of light, moderate, and vigorous exercise or physical activity.

## Health-related lifestyle

Blocks of activity lasting more than 10 minutes, which were done on the same day, count towards the full 30 minutes. Respondents were asked to include physical activity which is part of their job. Examples of each type of activity are:

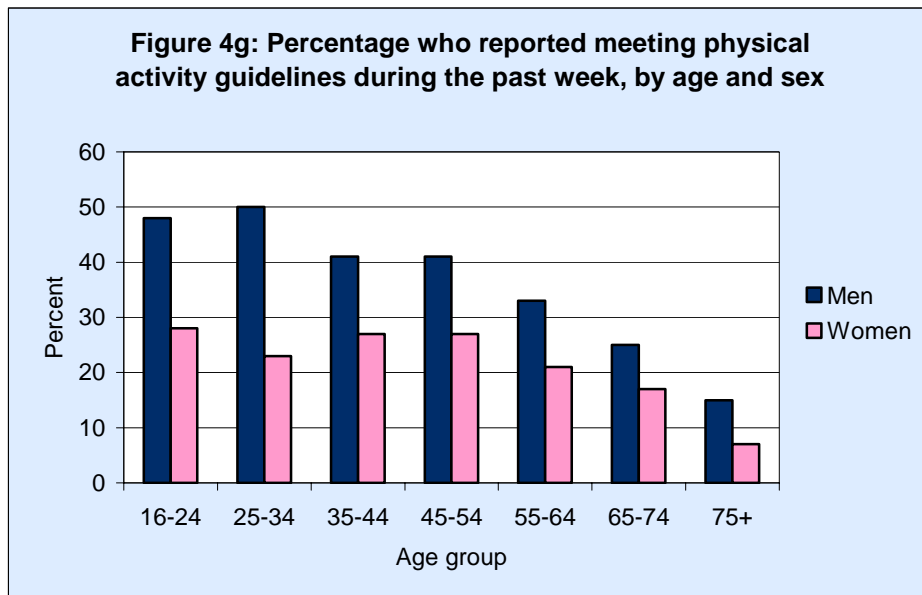
- light activity - housework or golf
- moderate activity - heavy gardening or fast walking
- vigorous activity - running or aerobics.

### 4.6.2 Results

- 30% of adults reported meeting the guidelines for physical activity in the past week.

A higher proportion of men (38%) than women (22%) met the guidelines. Figure 4g illustrates that this pattern was seen within each age group, and that the proportion meeting guidelines decreased with age.

Table 4.7, figure 4g



Some adults (12%) reported that they had done no exercise or physical activity in the past week, and a further 22% had done no more than light activity (not shown in table).

## 4.7 Body Mass Index

### 4.7.1 Method and definitions

The survey asked adults to report their height and their weight. In order to define overweight or obesity, a measurement is required which allows for differences in weight due to height. The Body Mass Index (BMI) is calculated as weight (kg) divided by squared height (m<sup>2</sup>). However, BMI does not distinguish between mass due to body fat and mass due to muscular physique, nor does it take account of the distribution of fat.

BMI was calculated for all respondents, excluding pregnant women, with valid height and weight measurements and classified into the following BMI groups<sup>8</sup>:

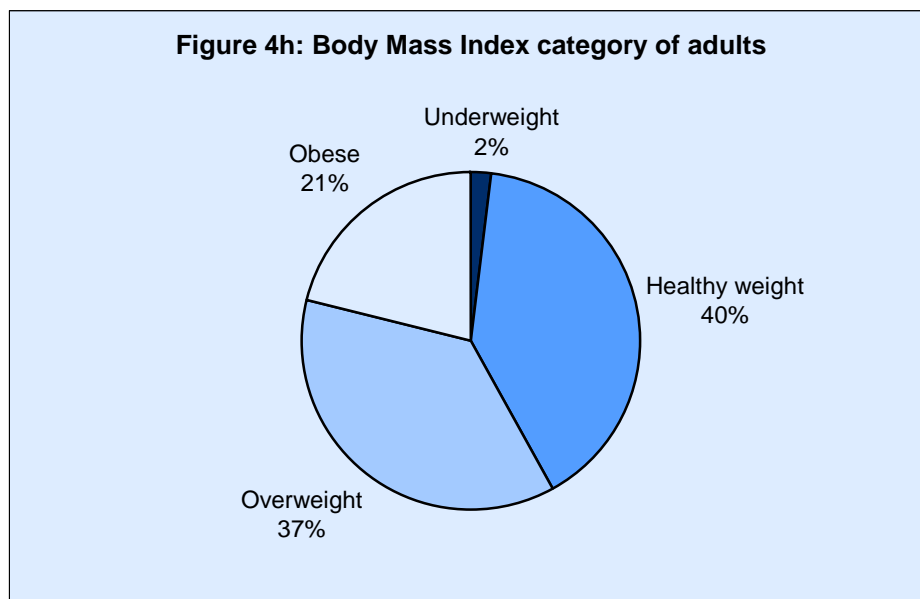
BMI (kg/m <sup>2</sup> )	Description
Less than 18.5	Underweight
18.5 to under 25	Healthy weight
25 to under 30	Overweight
30 and over	Obese

Height and weight of respondents are self-reported, and there is evidence to show that some people tend to under-report weight and/or over-report height, resulting in an under-estimation of the prevalence of overweight and obesity (Roberts, 1995<sup>9</sup>).

#### 4.7.2 Results

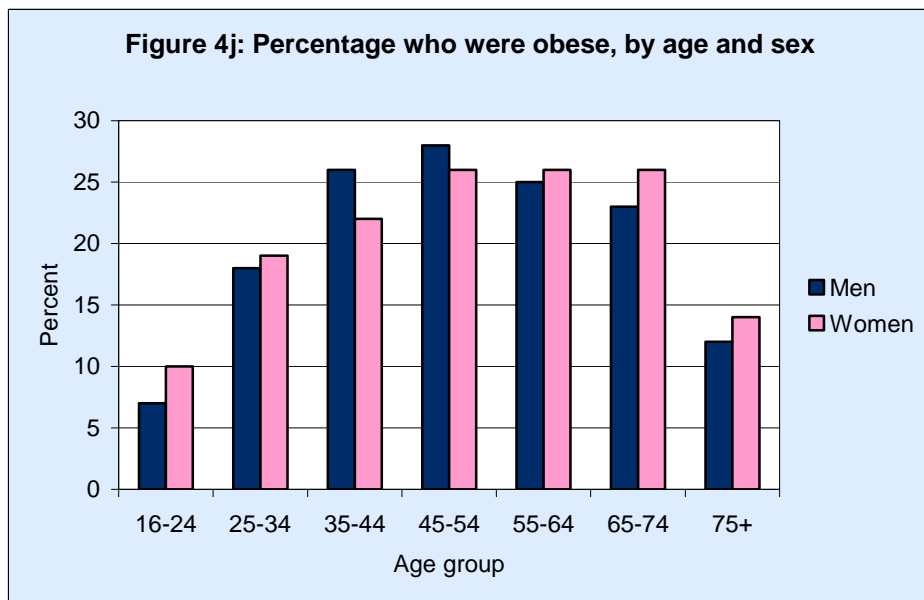
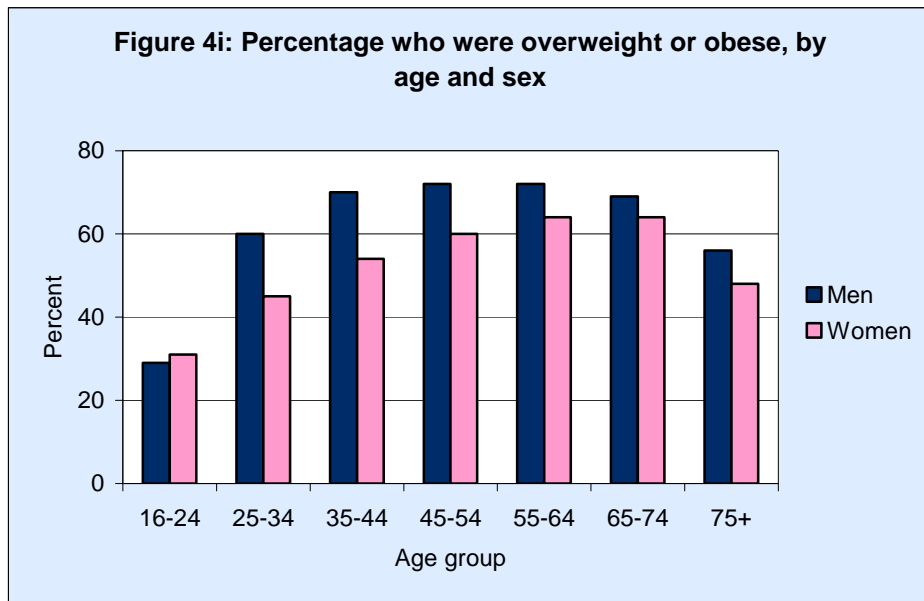
- In total, 57% of adults were classified as overweight or obese, including 21% obese.

The proportion of adults falling into each of the BMI categories is shown in Figure 4h.



Men were more likely to be overweight than women, but there was little difference in the proportions who were obese. Figure 4i illustrates that for men, the proportion overweight or obese was fairly constant in the age range 35-74 and was lower for younger and older men. For women, levels were highest in the age range 45-74 and were lower for younger and older women. Figure 4j illustrates that the proportion classified as obese was highest among men aged 45-54 and women aged 45-74.

**Table 4.8, figures 4h, 4i, 4j**



On average, men were 5ft 10in (177cm) tall and weighed 13st 2lb (84kg). For women the equivalent figures were 5ft 4in (162cm) and 10st 12lb (69kg) (not shown in table).

## 4.8 Key measures by socio-demographic factors

### 4.8.1 Methods and definitions

For some key variables, information is shown by socio-economic group and area deprivation. Observed and age-standardised rates are shown. Age-standardisation removes the effect of age from comparisons between groups, in this case between different categories of socio-economic group and area deprivation. See the glossary (Appendix A) for further details.

### ***Socio-economic group***

The socio-economic classification in use in this report is the 3-class version of the National Statistics Socio-Economic Classification (NS-SEC) of the Household Reference Person (HRP). See the glossary (Appendix A) for further details.

### ***Area deprivation***

Area deprivation is based on the Welsh Index of Multiple Deprivation 2008 (WIMD). WIMD gives deprivation scores for small areas in Wales. These small areas were split into five groups (“fifths”) of deprivation according to overall WIMD scores and each respondent to the Welsh Health Survey was allocated to the relevant fifth. See the glossary (Appendix A) for further details.

## **4.8.2 Results**

### ***Socio-economic group (NS-SEC)***

The largest variation by NS-SEC was for reported smoking behaviour. 15% of adults in managerial and professional households reported that they currently smoked, compared with 31% in routine and manual households, and 40% in households headed by someone who had never worked or was long-term unemployed.

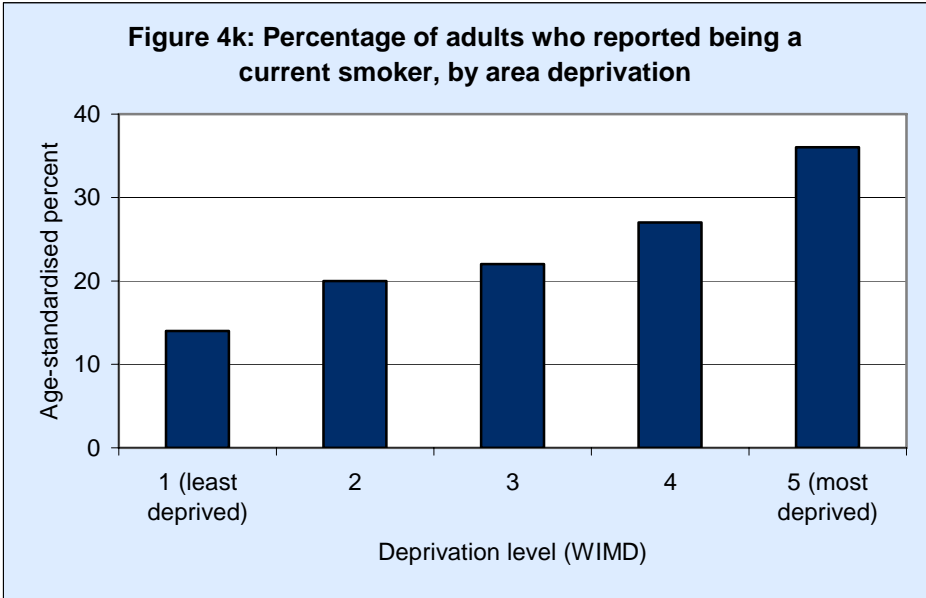
Adults in managerial and professional households were less likely to smoke, more likely to meet guidelines for fruit and vegetable consumption and less likely to be overweight or obese than those in routine and manual households – however, they were also less likely to meet physical activity guidelines and were more likely to drink above guidelines.

**Table 4.9**

### ***Area deprivation (WIMD)***

In general, adults in the least deprived areas reported healthier lifestyles than those in the most deprived areas, but not for alcohol consumption or physical activity. Smoking rates showed the most variation, with rates in the most deprived “fifth” of population more than twice as high as those in the least deprived fifth (36% compared with 14%). This is illustrated in figure 4k.

**Table 4.10, figure 4k**



## 4.9 Trends for key measures

### 4.9.1 Methods and definitions

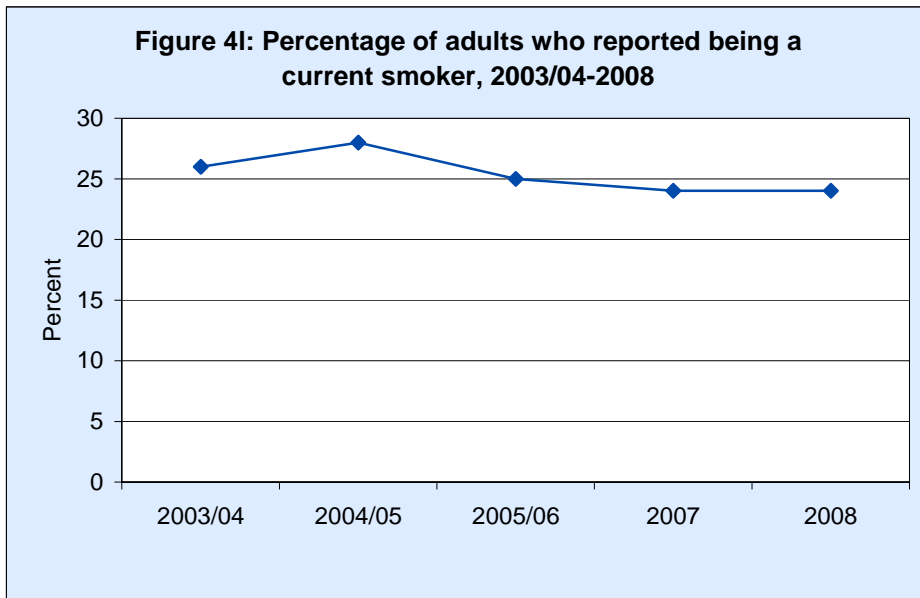
For some key variables, information is shown for the first five years of the survey.

#### **Question change**

As explained in previous sections, questions on smoking location and exposure, alcohol consumption, and fruit and vegetable consumption were changed in 2008, so trends cannot be examined for these topics.

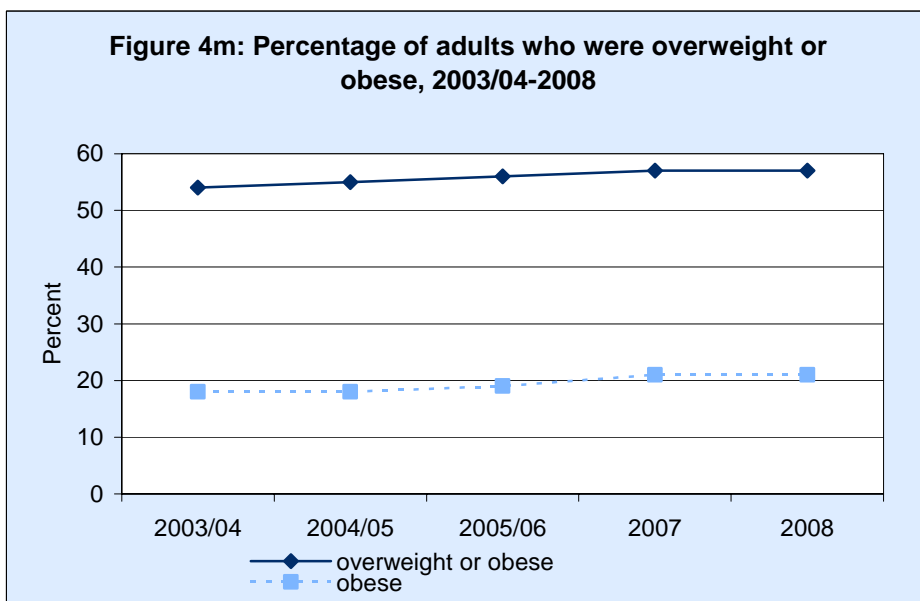
### 4.9.2 Results

Smoking rates remained unchanged between 2007 and 2008, slightly lower than in previous years of the survey.



There was little change in physical activity over the five years of the survey. Levels of overweight and obesity remained unchanged between 2007 and 2008, following a slight increase in earlier years.

Table 4.11, figures 4l, 4m



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## Tables

Table 4.1 Adults' reported smoking behaviour, by age and sex

Per cent

	Daily smoker	Occasional smoker	Smoker (a)	Ex-daily smoker	Ex-occasional smoker	Ex-smoker (b)	Never smoked	Non-smoker (c)	Unweighted base
<b>Men aged:</b>									
16-24	19	5	25	3	5	7	68	75	704
25-34	29	7	37	8	10	17	46	63	663
35-44	26	4	30	15	9	24	46	70	959
45-54	21	4	25	18	11	29	46	75	988
55-64	19	3	22	28	15	42	35	78	1,162
65-74	12	4	16	35	18	53	31	84	932
75+	8	2	10	36	22	58	32	90	625
16-44	25	6	30	8	8	16	53	70	2,326
45-64	20	4	23	23	13	36	41	77	2,150
65+	11	3	14	35	20	55	31	86	1,557
<b>Men aged 16+</b>	<b>20</b>	<b>4</b>	<b>25</b>	<b>18</b>	<b>12</b>	<b>30</b>	<b>45</b>	<b>75</b>	<b>6,033</b>
<b>Women aged:</b>									
16-24	21	6	27	4	8	12	61	73	779
25-34	24	6	30	9	13	23	48	70	831
35-44	24	4	28	11	10	22	50	72	1,181
45-54	20	4	25	12	11	23	52	75	1,122
55-64	19	2	21	17	15	33	47	79	1,322
65-74	12	1	13	19	15	34	53	87	1,010
75+	8	1	9	17	18	35	56	91	852
16-44	23	5	28	8	11	19	53	72	2,791
45-64	20	3	23	15	13	28	49	77	2,444
65+	10	1	11	18	17	35	54	89	1,862
<b>Women aged 16+</b>	<b>19</b>	<b>4</b>	<b>22</b>	<b>13</b>	<b>13</b>	<b>25</b>	<b>52</b>	<b>78</b>	<b>7,097</b>
<b>All aged:</b>									
16-24	20	6	26	3	7	10	65	74	1,483
25-34	26	7	33	8	11	20	47	67	1,494
35-44	25	4	29	13	10	23	48	71	2,140
45-54	21	4	25	15	11	26	49	75	2,110
55-64	19	3	22	23	15	37	41	78	2,484
65-74	12	2	15	27	17	43	42	85	1,942
75+	8	1	9	25	20	44	47	91	1,477
16-44	24	5	29	8	9	18	53	71	5,117
45-64	20	3	23	19	13	32	45	77	4,594
65+	10	2	12	26	18	44	44	88	3,419
<b>All aged 16+</b>	<b>20</b>	<b>4</b>	<b>24</b>	<b>15</b>	<b>12</b>	<b>28</b>	<b>49</b>	<b>76</b>	<b>13,130</b>

(a) Includes those who smoke either daily or occasionally.

(b) Includes those who used to smoke either daily or occasionally.

(c) Includes those who used to smoke either daily or occasionally, and those who have never smoked.

**Table 4.2 Location of smoking (a)(b)***Per cent*

	Outdoors	Indoors	Indoors:				<i>Unweighted base (c)</i>
			At own home	In other people's homes	Whilst travelling by car	Other places indoors	
<b>Male smokers aged:</b>							
16-34	98	78	51	48	53	27	425
35-54	95	77	65	27	53	19	535
55+	92	83	76	18	45	20	460
<b>Male smokers aged 16+</b>	95	79	63	33	51	22	1,420
<b>Female smokers aged:</b>							
16-34	95	77	57	43	53	20	470
35-54	95	77	67	29	44	16	598
55+	81	89	85	20	33	15	480
<b>Female smokers aged 16+</b>	92	80	68	32	45	17	1,548
<b>All smokers aged:</b>							
16-34	97	77	54	45	53	24	895
35-54	95	77	66	28	49	18	1,133
55+	87	86	81	19	39	18	940
<b>All smokers aged 16+</b>	93	79	65	33	48	20	2,968

(a) Due to a question change these results are not comparable with previous years, see 4.3.1.

(b) In past seven days.

(c) Bases vary: those shown are for all smokers.

**Table 4.3 Non-smoking adults' reported passive smoking, by age and sex (a)***Per cent*

	Regularly exposed to passive smoke	Regularly exposed to passive smoking		Regularly exposed to passive smoke indoors				<i>Unweighted base (b)</i>
		Outdoors	Indoors	At own home	In other people's homes	Whilst travelling by car	Other places	
<b>Non-smoking men aged:</b>								
16-24	53	39	39	19	25	14	13	524
25-34	38	25	28	7	20	7	7	418
35-44	33	23	22	6	16	6	6	670
45-54	31	22	19	6	14	5	5	742
55-64	28	19	18	6	11	5	7	914
65-74	25	16	15	6	9	3	4	784
75+	19	10	12	6	5	3	4	561
16-44	42	29	30	11	20	9	9	1,612
45-64	30	21	19	6	12	5	6	1,656
65+	23	13	14	6	7	3	4	1,345
<b>Non-smoking men aged 16+</b>	34	23	23	8	15	6	7	4,613
<b>Non-smoking women aged:</b>								
16-24	56	46	40	16	31	15	13	567
25-34	45	30	33	8	27	6	8	573
35-44	33	21	23	5	19	5	6	860
45-54	34	23	23	7	17	6	7	845
55-64	31	21	21	7	14	4	5	1,049
65-74	23	14	15	6	9	4	5	874
75+	15	7	10	4	6	2	3	781
16-44	44	32	31	9	25	9	9	2,000
45-64	32	22	22	7	15	5	6	1,894
65+	19	10	12	5	8	3	4	1,655
<b>Non-smoking women aged 16+</b>	34	23	24	7	18	6	7	5,549
<b>All non-smokers aged:</b>								
16-24	55	42	40	17	28	15	13	1,091
25-34	42	28	30	7	24	7	8	991
35-44	33	22	22	5	17	5	6	1,530
45-54	33	23	21	6	15	6	6	1,587
55-64	30	20	19	6	12	5	6	1,963
65-74	24	15	15	6	9	3	5	1,658
75+	16	8	11	5	6	2	4	1,342
16-44	43	31	31	10	23	9	9	3,612
45-64	31	21	20	6	14	5	6	3,550
65+	21	12	13	5	8	3	4	3,000
<b>All non-smokers aged 16+</b>	34	23	23	8	16	6	7	10,162

(a) Due to a question change these results are not comparable with previous years, see 4.3.1.

(b) Bases vary: those shown are for all non-smokers.

**Table 4.4 Adults' reported average frequency of drinking alcohol, by age and sex (a)***Per cent*

	Never	Once or twice a year	Once every couple of months	Once or twice a month	Once or twice a week	Three or four days a week	Five or six days a week	Almost every day	<i>Unweighted base</i>
<b>Men aged:</b>									
16-24	10	8	9	19	39	10	4	2	706
25-34	6	5	9	15	40	13	4	7	664
35-44	6	5	7	14	33	20	5	10	958
45-54	8	6	5	12	33	17	7	12	986
55-64	7	7	8	10	31	16	6	15	1,163
65-74	12	8	7	8	29	13	7	16	934
75+	18	12	8	9	23	11	3	17	635
16-44	8	6	8	16	37	14	4	7	2,328
45-64	8	7	6	11	32	16	6	14	2,149
65+	15	10	7	9	26	12	5	17	1,569
<b>Men aged 16+</b>	9	7	7	13	33	15	5	11	6,046
<b>Women aged:</b>									
16-24	10	7	13	21	37	9	1	1	785
25-34	9	8	16	22	30	9	1	3	831
35-44	7	12	14	14	32	12	4	5	1,178
45-54	11	10	9	15	30	12	6	7	1,122
55-64	17	12	12	13	24	10	4	7	1,323
65-74	24	18	10	11	19	9	3	6	1,005
75+	34	19	10	9	13	4	2	9	851
16-44	9	9	14	19	33	10	2	3	2,794
45-64	14	11	11	14	27	11	5	7	2,445
65+	29	18	10	10	16	6	2	8	1,856
<b>Women aged 16+</b>	15	12	12	15	27	9	3	5	7,095
<b>All aged:</b>									
16-24	10	8	11	20	38	9	2	1	1,491
25-34	8	7	13	19	35	11	3	5	1,495
35-44	7	8	11	14	32	16	5	8	2,136
45-54	9	8	7	14	32	14	6	9	2,108
55-64	12	9	10	12	28	13	5	11	2,486
65-74	18	13	9	10	24	11	5	11	1,939
75+	28	16	9	9	17	7	2	12	1,486
16-44	8	8	11	18	35	12	3	5	5,122
45-64	11	9	8	13	30	14	6	10	4,594
65+	23	14	9	9	20	9	4	12	3,425
<b>All aged 16+</b>	12	9	10	14	30	12	4	8	13,141

(a) Due to a question change these results are not comparable with previous years, see 4.4.1.

**Table 4.5 Adults' reported maximum daily alcohol consumption in the past week, by age and sex (a)**

Per cent

	None	Sensible	Within guidelines	Above guidelines, less than binge	Binge	Above guidelines	Unweighted base (b)
<b>Men aged:</b>							
16-24	39	9	48	13	39	52	694
25-34	27	13	40	13	47	60	653
35-44	26	12	38	15	47	62	945
45-54	25	16	41	20	39	59	967
55-64	28	20	48	20	32	52	1,144
65-74	33	25	58	24	18	42	902
75+	46	33	79	14	6	21	606
16-44	31	11	42	14	44	58	2,292
45-64	27	18	45	20	36	55	2,111
65+	38	29	67	20	13	33	1,508
<b>Men aged 16+</b>	<b>31</b>	<b>17</b>	<b>48</b>	<b>17</b>	<b>35</b>	<b>52</b>	<b>5,911</b>
<b>Women aged:</b>							
16-24	42	9	51	11	37	49	767
25-34	42	14	56	13	30	44	819
35-44	38	13	50	19	30	50	1,153
45-54	37	15	51	23	26	49	1,101
55-64	49	17	66	19	15	34	1,293
65-74	59	22	81	15	5	19	972
75+	71	21	92	7	1	8	800
16-44	40	12	52	15	33	48	2,739
45-64	43	16	59	21	21	41	2,394
65+	65	21	86	11	3	14	1,772
<b>Women aged 16+</b>	<b>47</b>	<b>15</b>	<b>62</b>	<b>16</b>	<b>22</b>	<b>38</b>	<b>6,905</b>
<b>All aged:</b>							
16-24	41	9	50	12	38	50	1,461
25-34	34	14	48	13	39	52	1,472
35-44	32	12	44	17	38	56	2,098
45-54	31	15	46	21	33	54	2,068
55-64	39	19	57	20	23	43	2,437
65-74	46	23	70	19	11	30	1,874
75+	61	26	87	10	3	13	1,406
16-44	36	12	47	14	38	53	5,031
45-64	35	17	52	20	28	48	4,505
65+	53	24	78	15	7	22	3,280
<b>All aged 16+</b>	<b>39</b>	<b>16</b>	<b>55</b>	<b>16</b>	<b>28</b>	<b>45</b>	<b>12,816</b>

(a) Due to a question change these results are not comparable with previous years, see 4.4.1.

(b) Based on all adults (drinkers and non-drinkers). See definitions at 4.4.1.

**Table 4.6 Adults' reported fruit and vegetable consumption, by age and sex (a)***Per cent*

	Number of portions of fruit and vegetables consumed the previous day (b)			<i>Unweighted base</i>
	None	Some, but less than five	Five or more	
<b>Men aged:</b>				
16-24	13	56	31	692
25-34	12	54	34	652
35-44	9	59	32	943
45-54	9	57	35	969
55-64	5	57	38	1,134
65-74	5	56	39	910
75+	5	59	37	614
16-44	11	57	32	2,287
45-64	7	57	36	2,103
65+	5	57	38	1,524
<b>Men aged 16+</b>	8	57	35	5,914
<b>Women aged:</b>				
16-24	10	56	33	775
25-34	7	59	34	828
35-44	6	57	37	1,171
45-54	5	54	41	1,107
55-64	4	52	44	1,289
65-74	7	53	40	977
75+	7	62	31	827
16-44	8	57	35	2,774
45-64	5	53	42	2,396
65+	7	58	35	1,804
<b>Women aged 16+</b>	7	56	37	6,974
<b>All aged:</b>				
16-24	12	56	32	1,467
25-34	9	57	34	1,480
35-44	7	58	35	2,114
45-54	7	55	38	2,076
55-64	5	54	41	2,423
65-74	6	55	39	1,887
75+	6	61	33	1,441
16-44	9	57	34	5,061
45-64	6	55	39	4,499
65+	6	58	36	3,328
<b>All aged 16+</b>	7	56	36	12,888

(a) Due to a question change these results are not comparable with previous years, see 4.5.1.

(b) See definitions at 4.5.1.

**Table 4.7 Adults' reported physical activity in the past week, by age and sex**

	Number of days of at least moderate exercise/activity in the past week (a)						<i>Unweighted base</i>
	None	One	Two	Three	Four	Five or more	
<b>Men aged:</b>							
16-24	17	6	10	12	8	48	696
25-34	17	8	9	9	7	50	661
35-44	24	8	9	10	7	41	952
45-54	30	7	9	8	5	41	980
55-64	40	7	8	7	5	33	1,147
65-74	46	6	10	7	6	25	922
75+	61	6	7	6	4	15	614
16-44	20	7	9	10	7	46	2,309
45-64	35	7	9	7	5	37	2,127
65+	52	6	9	7	5	21	1,536
<b>Men aged 16+</b>	31	7	9	9	6	38	5,972
<b>Women aged:</b>							
16-24	23	13	14	12	9	28	772
25-34	22	13	15	15	11	23	831
35-44	27	9	15	13	9	27	1,176
45-54	31	10	13	12	7	27	1,109
55-64	39	9	13	11	7	21	1,318
65-74	49	8	11	8	6	17	1,010
75+	75	7	5	4	2	7	857
16-44	24	12	15	13	10	26	2,779
45-64	35	10	13	11	7	24	2,427
65+	62	8	8	6	4	12	1,867
<b>Women aged 16+</b>	37	10	13	11	8	22	7,073
<b>All aged:</b>							
16-24	20	9	12	12	8	38	1,468
25-34	20	11	12	12	9	36	1,492
35-44	26	9	12	12	8	34	2,128
45-54	30	9	11	10	6	34	2,089
55-64	39	8	11	9	6	27	2,465
65-74	48	7	11	8	6	21	1,932
75+	69	7	6	5	3	10	1,471
16-44	22	9	12	12	9	36	5,088
45-64	35	9	11	9	6	30	4,554
65+	58	7	8	6	5	16	3,403
<b>All aged 16+</b>	34	9	11	10	7	30	13,045

(a) See definitions at 4.6.1.

**Table 4.8 Adults reported Body Mass Index, by age and sex (a)***Per cent*

	Underweight	Healthy weight	Overweight	Obese	Overweight or obese	Unweighted base
<b>Men aged:</b>						
16-24	5	66	22	7	29	646
25-34	1	38	42	18	60	619
35-44	1	29	45	26	70	918
45-54	-	27	44	28	72	944
55-64	1	27	47	25	72	1,122
65-74	1	30	46	23	69	909
75+	2	43	43	12	56	606
16-44	2	44	36	17	54	2,183
45-64	1	27	46	27	72	2,066
65+	1	36	45	18	63	1,515
<b>Men aged 16+</b>	2	37	41	21	62	5,764
<b>Women aged:</b>						
16-24	8	62	20	10	31	663
25-34	4	52	26	19	45	705
35-44	2	43	32	22	54	1,072
45-54	1	38	34	26	60	1,046
55-64	1	35	38	26	64	1,268
65-74	2	33	39	26	64	968
75+	5	48	34	14	48	798
16-44	4	52	26	18	44	2,440
45-64	1	37	36	26	62	2,314
65+	3	41	36	20	56	1,766
<b>Women aged 16+</b>	3	44	32	21	53	6,520
<b>All aged:</b>						
16-24	6	64	21	9	30	1,309
25-34	2	45	34	18	53	1,324
35-44	2	36	38	24	62	1,990
45-54	1	33	39	27	66	1,990
55-64	1	31	43	25	68	2,390
65-74	2	32	42	24	66	1,877
75+	3	46	38	13	51	1,404
16-44	3	48	32	18	49	4,623
45-64	1	32	41	26	67	4,380
65+	2	38	40	19	59	3,281
<b>All aged 16+</b>	2	40	37	21	57	12,284

(a) See definitions at 4.7.1. Excludes women who stated they were pregnant.

**Table 4.9 Adults who reported key health-related lifestyles, by the National Statistics Socio-Economic Classification (NS-SEC) of the household reference person (a)**

Per cent

Socio-economic classification of household reference person	Consumption of alcohol			Consumption of fruit and vegetables	Exercise or physical activity done	Body Mass Index		Unweighted base (g)
	Smoker	Above guidelines (b)	Binge (b)	Meets guidelines (c)	Meets guidelines (d)	Overweight or obese (e)	Obese (f)	
<b>Age-standardised</b>								
Managerial and professional	15	49	29	40	27	54	18	4,524
Intermediate	22	42	25	37	32	58	19	2,533
Routine and manual	31	43	29	32	32	61	25	5,495
Never worked and long-term unemployed	40	30	18	33	25	56	21	263
<b>Observed</b>								
Managerial and professional	15	50	30	40	27	55	18	4,524
Intermediate	22	41	25	37	31	58	19	2,533
Routine and manual	31	42	28	32	32	61	25	5,495
Never worked and long-term unemployed	44	30	19	29	26	53	19	263
<b>All aged 16+</b>	24	45	28	36	30	57	21	13,313

- (a) See definitions at 4.8.1 and glossary at Appendix A for explanations of age-standardisation, National Statistics Socio-Economic Classification, and household reference person.
- (b) Based on all adults (drinkers and non-drinkers). See definitions at 4.4.1. Due to a question change, results are not comparable with previous years.
- (c) See definitions at 4.5.1. Due to a question change, results are not comparable with previous years.
- (d) See definitions at 4.6.1.
- (e) BMI of 25+. See definitions at 4.7.1.
- (f) BMI of 30+. See definitions at 4.7.1.
- (g) Bases vary: those shown are for the whole sample.

**Table 4.10 Adults who reported key health-related lifestyles, by the Welsh Index of Multiple Deprivation (a)***Per cent*

2008 Welsh Index of Multiple Deprivation quintile	Smoker	Consumption of alcohol		Consumption of fruit and vegetables	Exercise or physical activity done	Body Mass Index		<i>Unweighted base (g)</i>	
		Above guidelines (b)	Binge (b)	Meets guidelines (c)	Meets guidelines (d)	Overweight or obese (e)	Obese (f)		
<b>Age-standardised</b>									
1 (least deprived)	14	50	30	39	28	53	16	2,579	
2	20	45	27	40	32	56	18	2,772	
3	22	42	26	37	31	57	20	2,999	
4	27	45	30	33	29	60	24	2,583	
5 (most deprived)	36	41	28	30	28	61	27	2,380	
<b>Observed</b>									
1 (least deprived)	14	50	30	39	28	53	16	2,579	
2	20	45	27	41	32	56	18	2,772	
3	22	42	26	37	31	57	20	2,999	
4	27	46	31	33	29	60	23	2,583	
5 (most deprived)	37	41	29	30	29	60	27	2,380	
<b>All aged 16+</b>	24	45	28	36	30	57	21	13,313	

- (a) See definitions at 4.8.1 and glossary at Appendix A for explanations of age-standardisation and Welsh Index of Multiple Deprivation.
- (b) Based on all adults (drinkers and non-drinkers). See definitions at 4.4.1. Due to a question change, results are not comparable with previous years.
- (c) See definitions at 4.5.1. Due to a question change, results are not comparable with previous years.
- (d) See definitions at 4.6.1.
- (e) BMI of 25+. See definitions at 4.7.1.
- (f) BMI of 30+. See definitions at 4.7.1.
- (g) Bases vary: those shown are for the whole sample.

**Table 4.11 Adults who reported key health-related lifestyles, 2003/04-2008**

Per cent

	2003/04	2004/05	2005/06	2007 (a)	2008
<b>Men aged 16+:</b>					
Smoker	27	29	27	25	25
Non-smoking adults regularly exposed to passive smoke indoors (b)	-	-	-	-	23
Consumption of alcohol: above guidelines (c)	-	-	-	-	52
Consumption of alcohol: binge (c)	-	-	-	-	35
Consumption of fruit and vegetables: meets guidelines (d)	-	-	-	-	35
Exercise or physical activity done: meets guidelines (e)	36	36	38	36	38
Overweight or obese (f)	59	60	61	62	62
Obese (g)	17	18	19	20	21
<b>Women aged 16+:</b>					
Smoker	26	26	24	23	22
Non-smoking adults regularly exposed to passive smoke indoors (b)	-	-	-	-	24
Consumption of alcohol: above guidelines (c)	-	-	-	-	38
Consumption of alcohol: binge (c)	-	-	-	-	22
Consumption of fruit and vegetables: meets guidelines (d)	-	-	-	-	37
Exercise or physical activity done: meets guidelines (e)	22	23	25	23	22
Overweight or obese (f)	49	50	51	51	53
Obese (g)	18	18	20	21	21
<b>All aged 16+:</b>					
Smoker	26	28	25	24	24
Non-smoking adults regularly exposed to passive smoke indoors (b)	-	-	-	-	23
Consumption of alcohol: above guidelines (c)	-	-	-	-	45
Consumption of alcohol: binge (c)	-	-	-	-	28
Consumption of fruit and vegetables: meets guidelines (d)	-	-	-	-	36
Exercise or physical activity done: meets guidelines (e)	29	29	31	29	30
Overweight or obese (f)	54	55	56	57	57
Obese (g)	18	18	19	21	21
<b>Unweighted bases (h)</b>					
Men aged 16+	7,486	7,437	6,691	6,418	6,119
Women aged 16+	8,812	8,598	7,614	7,499	7,194
All aged 16+	16,298	16,035	14,305	13,917	13,313

(a) From 2007 the fieldwork runs on a calendar year basis.

(b) See definitions at 4.3.1. Due to a question change in 2008, results are not comparable with earlier years.

(c) Based on all adults (drinkers and non-drinkers). See definitions at 4.4.1. Due to a question change in 2008, results are not comparable with earlier years.

(d) See definitions at 4.5.1. Due to a question change in 2008, results are not comparable with earlier years.

(e) See definitions at 4.6.1.

(f) BMI of 25+. See definitions at 4.7.1.

(g) BMI of 30+. See definitions at 4.7.1.

(h) Bases vary: those shown are for the whole sample.





## 5 Health service use

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### 5.1 Introduction

This chapter focuses on reported use of health services by adults, with some information on medicines.

Broad figures for Wales are provided along with age and sex breakdowns. For a selection of key measures, information is provided by socio-economic group and area deprivation. Local authority /health board breakdowns for 2007 + 2008 combined are provided in a separate report<sup>1</sup>.

The survey asked adults (aged 16 and over) whether they had used a range of health services recently. It complements other administrative sources of data about use of health services as it includes some information about the characteristics of people using them, includes those making little or no use of services, and covers some services for which information from other data sources is not available. The survey relies on a self-completion questionnaire - the results, therefore, reflect people's own interpretation of the health services they have used.

This chapter includes information on:

- use of GP services (5.3)
- use of hospital services (5.4)
- use of other selected health services (5.5)
- medicines (5.6)
- key measures by socio-demographic factors (5.7)

Trend information is not included in this year's report because of changes to several health service use questions.

## 5.2 Summary

- 17% of adults reported that they had talked to a GP about their own health in the past two weeks.
- 31% of adults reported attending a hospital outpatient department in the past twelve months, and 16% attending a hospital casualty department.
- 5% of adults reported an accident, injury or poisoning needing a visit to hospital in the past three months.
- 10% of adults reported being a hospital day patient in the past twelve months, and 10% reported staying in hospital as an inpatient (overnight or longer).
- 70% of adults reported using a dentist in the past twelve months, 69% a pharmacist and 49% an optician.
- Use of many health services increased with age (but not casualty, where use fluctuated, or dentists, where use decreased with age). For some services, use by younger women was also relatively high, possibly linked to family planning and child bearing.
- 50% of adults reported being on regular prescribed medication. The percentage increased with age.
- Adults in the most deprived areas were most likely to report talking to a GP and least likely to report using a dentist.

## 5.3 Use of GP services

### 5.3.1 Methods and definitions

The survey asked adults whether they had talked to a GP (family doctor) about their own health in the past two weeks (either in person or by telephone). Those who had were asked how many times they had done so, and whether they received a prescription. The survey also asked whether adults had seen a practice nurse at the GP surgery about their own health in the past 2 weeks.

### 5.3.2 Results

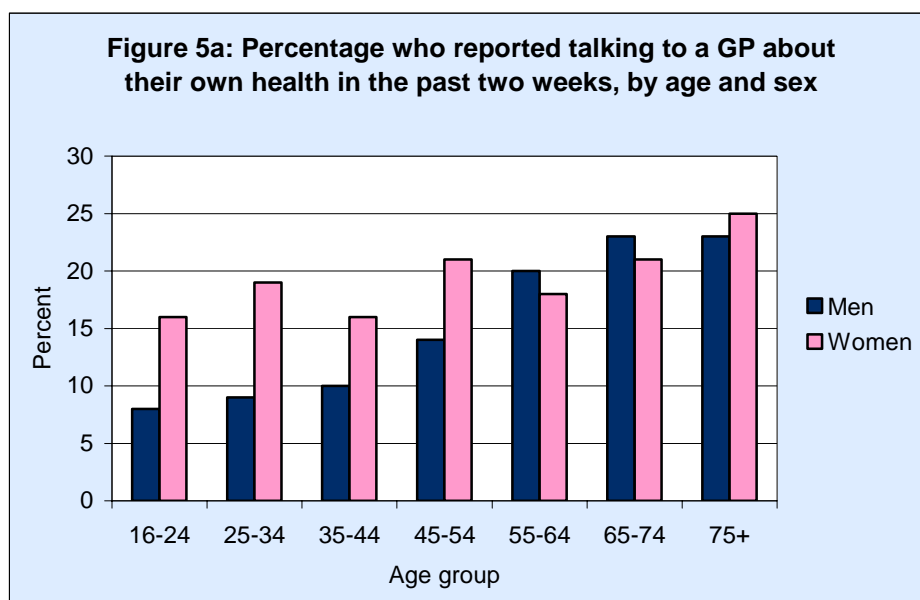
In the past two weeks:

- 17% of adults reported that they had talked to a GP about their own health
- 9% of adults reported that they had seen a practice nurse at the GP surgery about their own health.

The percentage talking to a GP and percentage seeing a practice nurse increased with age (figure 5a shows the pattern for GPs). For younger adults, women were more likely than men to have talked to a GP or seen a practice nurse. Many consultations by women of this age may be associated with family planning or pregnancy, which could account for some of the difference.

Of those talking to a GP about their health, 74% had received a prescription (not shown in table).

Table 5.1, figure 5a



## 5.4 Use of hospital services

### 5.4.1 Methods and definitions

The survey asked adults whether they had attended the outpatient or casualty department of a hospital as a patient in the past twelve months (apart from straightforward ante- or post-natal visits), and whether they had been in hospital for treatment as a day patient (admitted to a hospital bed or day ward but not remaining overnight) or inpatient (overnight or longer) in the past twelve months. They were also asked if any of their visits were paid for privately.

The survey also asked adults whether they had had any accident, injury or poisoning needing hospital treatment or a visit to casualty in the past three months. If so, they were asked what the accident was and where the most recent accident took place.

#### **Question change**

Questions on the use of hospital services were changed for 2008<sup>2</sup>, so most of the results are not comparable with those for earlier years.

### 5.4.2 Results

In the past three months:

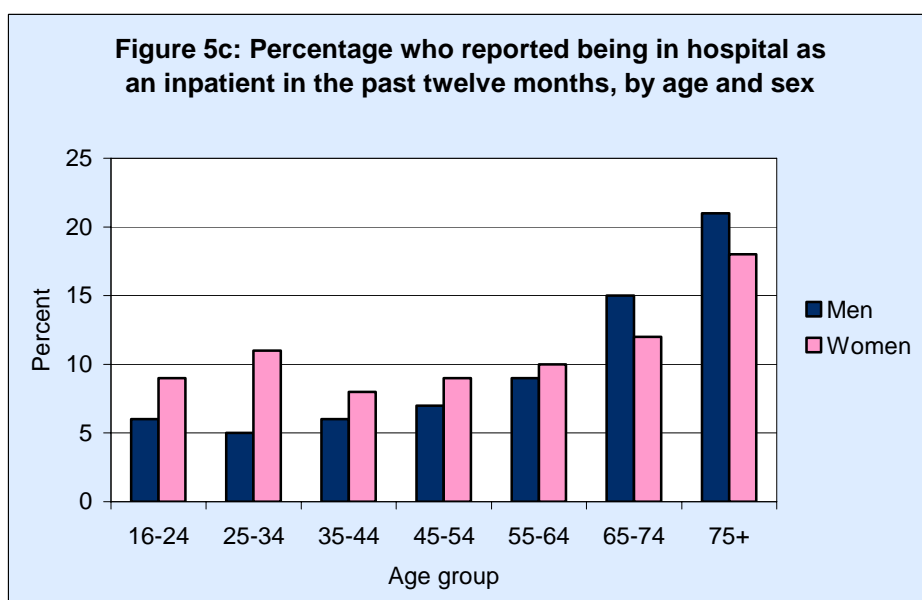
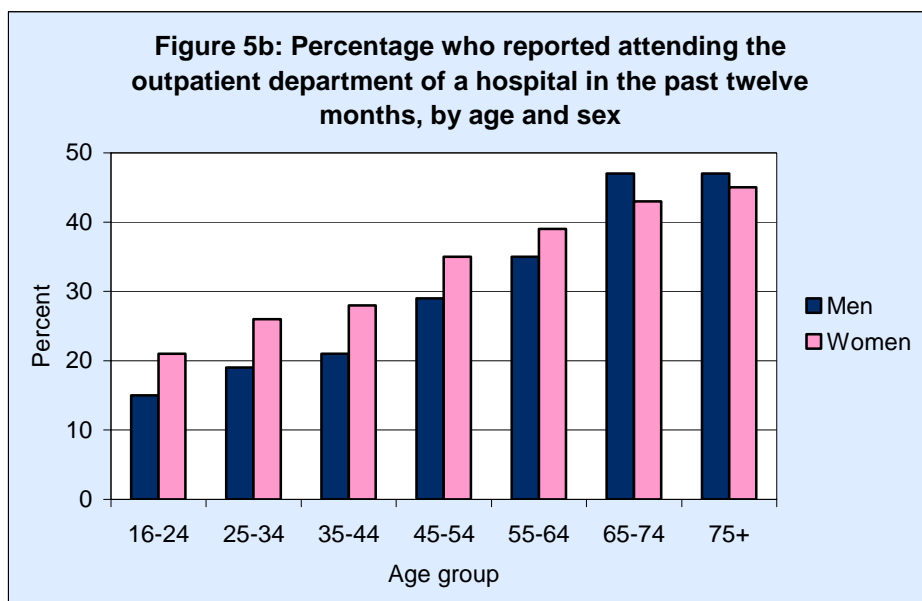
- 5% of adults reported an accident, injury or poisoning needing a visit to hospital.

In the past twelve months:

- 31% of adults reported attending the outpatient department of a hospital
- 16% of adults reported attending the casualty department of a hospital
- 10% of adults reported being in hospital for treatment as a day patient
- 10% of adults reported being in hospital as an inpatient (overnight or longer).

The percentage of adults using hospital services generally increased with age, with the exception of casualty and needing a visit to hospital following an accident, injury or poisoning (where rates fluctuated, but were relatively high for young men). For inpatients, rates were relatively high for women aged 25-34 (possibly linked to maternity stays). Figures 5b and 5c show the use by age and sex for outpatients and inpatients.

**Table 5.1, figures 5b, 5c**



## 5.5 Use of other selected health services

### 5.5.1 Methods and definitions

The survey asked adults if they had used a range of other services in the past twelve months and for some services asked whether they had any private treatment.

#### **Question change**

Questions on the use of other selected health services were changed for 2008<sup>2</sup>. The results are therefore not comparable with those for earlier years.

## 5.5.2 Results

In the past twelve months:

- 70% of adults reported using a dentist
- 69% of adults reported using a pharmacist
- 49% of adults reported using an optician
- 14% of adults reported using a health visitor, district or other community nurse
- 12% of adults reported using a chiropodist.

For chiropodists and opticians, the percentage of adults using them increased with age, while for dentists older people were less likely to have used them. The percentage of men using health visitors, district or other community nurses increased with age, while for women there were two peaks: one in women aged 25-34 (possibly linked with child and maternal health), and one in older women aged 75 and over. Women were more likely than men to use many of the services.

The survey also covered a range of other services, including physiotherapist (11%), NHS Direct helpline (8%), GP out of hours services (7%), and osteopath (6%).

**Table 5.2**

## 5.6 Medicines

### 5.6.1 Methods and definitions

The survey asked adults whether they had bought any medicine (conventional and others) during the past four weeks. Medicine was defined as anything taken or put on the skin, such as tablets, powders, creams, sprays and drops, to treat a medical condition. Those who had bought medicine were asked what kinds they bought.

Adults were also asked whether they were on regular medication (for a year or more) prescribed by a doctor.

### 5.6.2 Results

#### ***Buying medicine***

- 36% of adults reported buying medicine in the past four weeks.

Women were more likely than men to have bought medicines. The percentage of people purchasing medicines was higher in adults aged 25-54 than in younger and older adults.

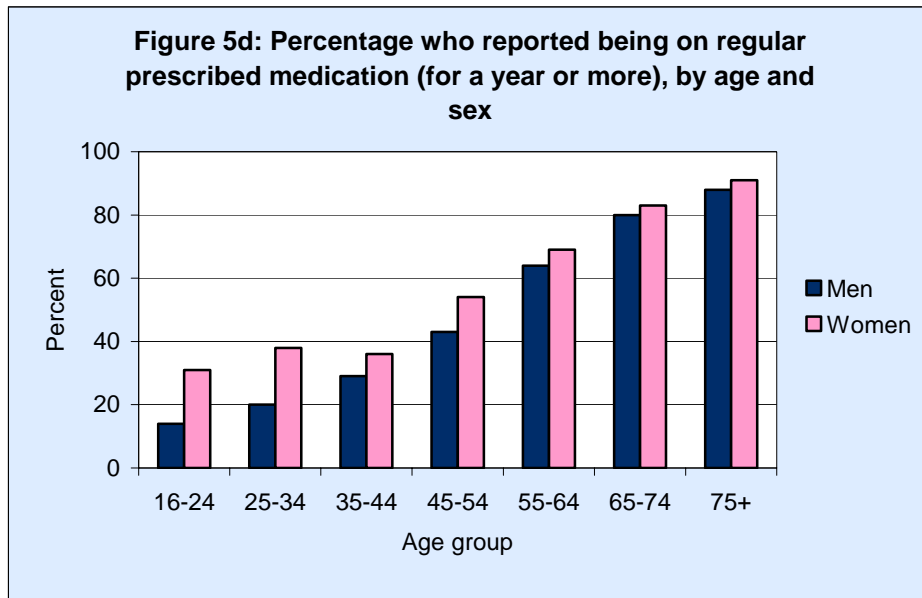
Of those buying medicine, 91% had bought conventional medicines (e.g. aspirin, eye-drops, antacids, cough medicine), 31% mineral or vitamin supplements, 9% herbal medicines and 3% homeopathic medicines (some people bought more than one type of medicine) (not shown in table).

**Table 5.3**

**On regular prescribed medication**

- 50% of adults reported being on regular prescribed medication.

The percentage of adults on regular prescribed medication increased with age, and was generally higher for women than men (figure 5d).

**Table 5.3, figure 5d**

## 5.7 Key measures by socio-demographic factors

### 5.7.1 Methods and definitions

For some key variables, information is shown by socio-economic group and area deprivation. Observed and age-standardised rates or means are shown. Age-standardisation removes the effect of age from comparisons between groups, in this case between different categories of socio-economic group and area deprivation. See the glossary (Appendix A) for further details.

#### ***Socio-economic group***

The socio-economic classification in use in this report is the 3-class version of the National Statistics Socio-Economic Classification (NS-SEC) of the Household Reference Person (HRP). See the glossary (Appendix A) for further details.

#### ***Area deprivation***

Area deprivation is based on the Welsh Index of Multiple Deprivation 2008 (WIMD). WIMD gives deprivation scores for small areas in Wales. These small areas were split into five groups (“fifths”) of deprivation according to overall WIMD scores and each respondent to the Welsh Health Survey was allocated to the relevant fifth. See the glossary (Appendix A) for further details.

### 5.7.2 Results

#### ***Socio-economic group (NS-SEC)***

Adults in managerial and professional households were most likely to report using a dentist in the past year.

**Table 5.4**

#### ***Area deprivation (WIMD)***

Adults in the most deprived areas were most likely to report talking to a GP and least likely to report using a dentist.

**Table 5.5**

### References and notes

1. Welsh Health Survey: 2007 + 2008 Local Authority / Health Board Results.  
[www.wales.gov.uk/statistics](http://www.wales.gov.uk/statistics)
2. Welsh Health Survey: 2008 Cognitive Pilot Summary Report.  
[www.wales.gov.uk/statistics](http://www.wales.gov.uk/statistics)

## Tables

**Table 5.1 Adults who reported using GP and hospital services, by age and sex**

*Per cent*

	In the past two weeks		In the past three months	In the past twelve months				<i>Unweighted base (c)</i>
	Talked to family doctor (GP)	Saw practice nurse	Attended hospital because of accident (a)	Attended casualty department (b)	Attended outpatient department (b)	In hospital as a day patient	In hospital as an inpatient	
<b>Men aged:</b>								
16-24	8	2	9	21	15	6	6	714
25-34	9	3	6	21	19	6	5	670
35-44	10	5	5	17	21	8	6	966
45-54	14	6	4	16	29	8	7	1,000
55-64	20	12	4	15	35	10	9	1,177
65-74	23	17	4	16	47	16	15	945
75+	23	19	4	18	47	19	21	647
16-44	9	4	7	19	19	6	6	2,350
45-64	17	9	4	15	32	9	8	2,177
65+	23	18	4	17	47	17	18	1,592
<b>Men aged 16+</b>	15	8	5	18	29	9	9	6,119
<b>Women aged:</b>								
16-24	16	10	7	20	21	5	9	793
25-34	19	7	4	18	26	9	11	838
35-44	16	7	3	12	28	9	8	1,188
45-54	21	9	3	10	35	11	9	1,126
55-64	18	11	3	13	39	10	10	1,334
65-74	21	13	4	14	43	12	12	1,029
75+	25	16	6	18	45	15	18	886
16-44	17	8	5	16	25	8	9	2,819
45-64	20	10	3	12	37	10	9	2,460
65+	23	15	5	16	44	13	15	1,915
<b>Women aged 16+</b>	19	10	4	15	33	10	11	7,194
<b>All aged:</b>								
16-24	12	6	8	21	18	6	8	1,507
25-34	14	5	5	20	23	8	8	1,508
35-44	13	6	4	14	24	9	7	2,154
45-54	18	8	4	13	32	9	8	2,126
55-64	19	11	3	14	37	10	9	2,511
65-74	22	15	4	15	45	14	14	1,974
75+	25	17	5	18	46	17	19	1,533
16-44	13	6	6	18	22	7	8	5,169
45-64	18	10	3	13	35	10	9	4,637
65+	23	16	4	16	45	15	16	3,507
<b>All aged 16+</b>	17	9	5	16	31	10	10	13,313

(a) Accident, injury or poisoning needing hospital treatment or a visit to casualty.

(b) Due to question change these results are not comparable with previous years, see 5.4.1.

(c) Bases vary: those shown are for the whole sample.

**Table 5.2 Adults who reported using other selected health services, by age and sex (a)***Per cent*

	In the past twelve months									<i>Unweighted base (c)</i>
	Pharm- acist	Dentist	Optician	District nurse (b)	Chiro- podist	GP out of hours services	NHS Direct helpline	Physio- therapist	Osteo- path	
<b>Men aged:</b>										
16-24	44	66	32	5	2	6	7	6	3	714
25-34	55	60	26	6	1	6	8	11	6	670
35-44	58	68	31	6	2	4	7	9	6	966
45-54	62	70	48	8	4	5	5	11	7	1,000
55-64	71	71	52	12	10	5	6	13	7	1,177
65-74	77	67	61	17	18	8	7	12	6	945
75+	78	52	67	21	38	9	6	10	3	647
16-44	52	65	30	6	2	5	7	8	5	2,350
45-64	67	70	50	10	7	5	6	12	7	2,177
65+	77	61	63	19	27	8	7	11	5	1,592
<b>Men aged 16+</b>	62	66	43	10	8	6	7	10	6	6,119
<b>Women aged:</b>										
16-24	69	73	43	18	2	9	12	7	1	793
25-34	79	78	44	23	3	10	16	9	4	838
35-44	72	82	46	14	3	8	11	10	6	1,188
45-54	75	81	56	12	9	7	9	14	9	1,126
55-64	81	78	62	14	16	7	8	17	7	1,334
65-74	82	66	67	18	34	7	6	14	7	1,029
75+	82	51	70	31	51	14	8	12	5	886
16-44	73	78	44	18	3	9	13	9	4	2,819
45-64	78	80	59	13	12	7	8	15	8	2,460
65+	82	59	68	25	43	11	7	13	6	1,915
<b>Women aged 16+</b>	77	74	55	18	15	9	10	12	5	7,194
<b>All aged:</b>										
16-24	56	70	37	11	2	8	9	6	2	1,507
25-34	67	69	35	14	2	8	12	10	5	1,508
35-44	65	76	39	10	2	6	9	10	6	2,154
45-54	69	76	52	10	7	6	7	13	8	2,126
55-64	76	75	57	13	13	6	7	15	7	2,511
65-74	79	67	64	18	27	7	6	13	7	1,974
75+	81	52	69	27	46	12	7	11	5	1,533
16-44	63	72	37	12	2	7	10	9	4	5,169
45-64	73	75	55	12	10	6	7	14	7	4,637
65+	80	60	66	22	36	9	7	12	6	3,507
<b>All aged 16+</b>	69	70	49	14	12	7	8	11	6	13,313

(a) Due to question change these results are not comparable with previous years, see 5.5.1.

(b) Health visitor, district or community nurse.

(c) Bases vary: those shown are for the whole sample.

**Table 5.3 Adults' purchase and use of medicine, by age and sex***Per cent*

	Purchased medicine (a)	On regular prescribed medication (b)	<i>Unweighted base (c)</i>
<b>Men aged:</b>			
16-24	23	14	714
25-34	33	20	670
35-44	30	29	966
45-54	30	43	1,000
55-64	29	64	1,177
65-74	26	80	945
75+	23	88	647
16-44	29	21	2,350
45-64	30	53	2,177
65+	25	83	1,592
<b>Men aged 16+</b>	28	44	6,119
<b>Women aged:</b>			
16-24	36	31	793
25-34	49	38	838
35-44	50	36	1,188
45-54	50	54	1,126
55-64	44	69	1,334
65-74	36	83	1,029
75+	28	91	886
16-44	45	35	2,819
45-64	47	62	2,460
65+	32	87	1,915
<b>Women aged 16+</b>	43	56	7,194
<b>All aged:</b>			
16-24	29	22	1,507
25-34	41	29	1,508
35-44	41	32	2,154
45-54	40	48	2,126
55-64	36	67	2,511
65-74	31	81	1,974
75+	26	90	1,533
16-44	37	28	5,169
45-64	38	58	4,637
65+	29	86	3,507
<b>All aged 16+</b>	36	50	13,313

(a) Purchased any medicine in the past four weeks.

(b) For a year or more.

(c) Bases vary: those shown are for the whole sample.

**Table 5.4 Adults who reported using selected health services, by the National Statistics Socio-Economic Classification (NS-SEC) of the household reference person (a)***Per cent*

Socio-economic classification of household reference person	In the past two weeks	In the past three months	In the past twelve months					Unweighted base (d)
	Family doctor (GP)	Attended hospital because of accident (b)	Outpatient department (c)	In hospital as an inpatient	Pharmacist (c)	Dentist (c)	Optician (c)	
<b>Age-standardised</b>								
Managerial and professional	16	5	32	9	72	80	52	4,524
Intermediate	16	5	30	10	68	73	49	2,533
Routine and manual	18	5	31	11	68	63	46	5,495
Never worked and long-term unemployed	21	6	36	17	70	57	47	263
<b>Observed</b>								
Managerial and professional	16	5	32	9	72	80	52	4,524
Intermediate	16	4	30	10	68	73	50	2,533
Routine and manual	19	5	31	11	68	62	46	5,495
Never worked and long-term unemployed	21	7	34	16	68	54	45	263
<b>All aged 16+</b>	17	5	31	10	69	70	49	13,313

- (a) See definitions at 5.9.1 and glossary at Appendix A for explanations of age-standardisation, National Statistics Socio-Economic Classification and household reference person.
- (b) Accident, injury or poisoning needing hospital treatment or a visit to casualty.
- (c) Due to question change these results are not comparable with previous years.
- (d) Bases vary: those shown are for the whole sample.

**Table 5.5 Adults who reported using selected health services, by the Welsh Index of Multiple Deprivation (a)***Per cent*

2008 Welsh Index of Multiple Deprivation quintile	In the past two weeks	In the past three months	In the past twelve months					Unweighted base (d)
	Family doctor (GP)	Attended hospital because of accident (b)	Outpatient department (c)	In hospital as an inpatient	Pharmacist (c)	Dentist (c)	Optician (c)	
<b>Age-standardised</b>								
1 (least deprived)	15	4	32	9	72	80	52	2,579
2	15	5	30	10	68	73	49	2,772
3	18	4	30	10	68	72	49	2,999
4	17	5	31	10	70	66	48	2,583
5 (most deprived)	20	5	33	12	69	58	45	2,380
<b>Observed</b>								
1 (least deprived)	15	4	33	9	72	80	53	2,579
2	15	5	31	10	68	74	50	2,772
3	18	4	30	10	69	72	50	2,999
4	17	5	30	10	70	67	48	2,583
5 (most deprived)	20	5	32	11	68	59	45	2,380
<b>All aged 16+</b>	17	5	31	10	69	70	49	13,313

(a) See definitions at 5.9.1 and glossary at Appendix A for explanations of age-standardisation and Welsh Index of Multiple Deprivation.

(b) Accident, injury or poisoning needing hospital treatment or a visit to casualty.

(c) Due to question change these results are not comparable with previous years.

(d) Bases vary: those shown are for the whole sample.





## 6 Health of children

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### 6.1 Introduction

This chapter considers the general health, health-related lifestyle and service use of children.

Broad figures for Wales are provided along with breakdowns by sex. Due to the relatively small numbers of children in the sample, breakdowns by other measures such as age and socio-demographic factors are not shown.

For children aged 0-12 years, parents were asked to complete the questionnaire on behalf of their child (with slightly different questions for children aged 0-3 and those aged 4-12). Young people aged 13-15 years were asked to complete the questionnaire themselves. The interviewer also measured the height and weight of children aged 2 and over.

This chapter includes information on:

- general health and well-being (6.3)
- eating habits (6.4)
- physical activity (6.5)
- body mass index (6.6)
- health service use (6.7)
- trends for key measures (6.8).

As the Welsh Health Survey relies on self-completion questionnaires the results reflect people's own understanding of their children's health rather than a clinical assessment of their medical condition.

The results from this survey are not comparable with those from school-based surveys because of differences in the approach used (whether conducted at school or at home), in the precise questions asked, and in the age of children included.

## 6.2 Summary

- 69% of children were reported to have very good general health, 25% good, and 5% fair.
- 19% of children were reported as having a long-standing illness, including 6% with a limiting long-standing illness.
- 58% of children were reported as eating fruit every day, and 51% vegetables.
- 53% of children were reported as exercising for at least an hour on five or more days of the previous week, including 35% who did so every day.
- 33% of children were estimated to be overweight or obese, including 16% obese.
- For 13% of children, it was reported that a GP had been consulted about their health in the past two weeks.

## 6.3 General health and well-being

### 6.3.1 Methods and definitions

The Welsh Health Survey children's questionnaires ask about self-assessed general health and illnesses.

#### ***Self- assessed health***

General health was classified using the following scale: very good, good, fair, bad or very bad.

#### ***Illnesses and other health problems***

The survey asked details of any illness, disability or health problem children had had for some time and whether any of these limited their daily activities. Those with a long-standing illness were asked to record the nature of the problem (up to six different health problems could be recorded). Those reporting a limiting long-term illness were also asked to record details of the problem (up to three health problems). Long-standing illnesses and limiting long-standing illnesses were coded into categories according to the International Classification of Diseases (ICD10) (see the glossary, Appendix A).

The survey also asked whether children were currently being treated for various illnesses and conditions. These included asthma, other breathing problems, skin complaints, ear complaints, eye complaints (including wearing glasses or contact lenses to correct vision), problems with bones, joints, muscles and anxiety, depression or mental illness.

### 6.3.2 Results

#### ***General Health***

- 69% of children were reported to have very good general health, 25% good, and 5% fair.
- 1% were reported as having bad health and fewer than 1% very bad health.

#### ***Illnesses***

- 19% of children were reported as having a long-standing illness. The most commonly reported long-standing illnesses were asthma (7%), a skin complaint (3%) and mental illness (3%).
- 6% of children were reported as having a limiting long-standing illness.
- Among children who were reported as currently being treated for an illness or condition, the most common were a skin complaint (10%), eye complaint (10% - includes wearing glasses), and asthma (9%).

Note that different estimates are obtained depending on whether the question asks about long-standing illness (which may or may not be being treated) or about illness currently being treated (which may or may not be long-standing).

There was little difference between boys and girls.

**Table 6.1**

## 6.4 Eating habits

### 6.4.1 Methods and definitions

Eating habits were assessed through a question asking about a range of foods. The survey asked how many times a week children aged 4-15 usually ate certain foods.

### 6.4.2 Results

- 58% of children were reported as eating fruit every day, and 51% vegetables.
- 28% of children were reported as eating sweets every day, and 18% crisps.
- 11% of children were reported as drinking soft drinks every day, 20% low sugar soft drinks, and 61% water.

**Table 6.2**

## 6.5 Physical activity

### 6.5.1 Methods and definitions

The survey asked how much exercise children aged 4-15 had undertaken on each day in the last week. In the question, "exercise" referred to physical activity that left the child feeling warm or slightly out of breath. Respondents were asked to include exercise done at school and outside of school. Some guidelines suggest that children do at least 60 minutes of moderate-intensity physical activity on 5 or more days a week<sup>1,2</sup>, and others that this level of physical activity should be done every day<sup>3</sup>. Both measures are reported here.

### 6.5.2 Results

- 53% of children were reported as undertaking physical activity for at least an hour on five or more days of the previous week, including 35% who did so every day.

A higher proportion of boys than girls reported these levels of physical activity.

**Table 6.3**

## 6.6 Body Mass Index

### 6.6.1 Methods and definitions

The heights and weights of children aged 2-15 were measured by the interviewer.

In order to define overweight or obesity a measure is required which allows for differences in weight due to height. The Body Mass Index (BMI) is calculated as weight (kg) divided by squared height (m<sup>2</sup>).

BMI was calculated for all children with valid height and weight measurements. Defining overweight and obesity in children is problematic. Constant changes in body composition during growth mean that the relationship between weight-for-

height is age dependent. The child overweight and obesity prevalence estimates in this report have been produced using the 85th percentile (overweight) and 95th percentile (obese) of the 1990 UK BMI reference curves<sup>4</sup>. They are not comparable with estimates produced on a different basis (for instance, those using international cut-offs) or with adult estimates. See the glossary (Appendix A) and technical summary (chapter 7) for further details.

## 6.6.2 Results

- 33% of children were classified as overweight or obese, including 16% obese.

There was little difference between the levels of overweight and obesity in boys and girls.

Initial estimates using international cut-off points instead of the UK reference curves suggest that around 26% of children would be classified as overweight or obese, including 7% obese (not shown in table).

**Table 6.4**

## 6.7 Health service use

### 6.7.1 Methods and definitions

The survey asked about children's use of a range of health services; these included GP services, hospital services and other selected community and family health services.

Respondents were asked whether someone had talked to a GP (family doctor) about the child's health in the past two weeks (either in person or by telephone), and whether they had received a prescription.

Respondents were asked whether children had used a range of hospital and other selected community and family health services in the last twelve months. They were also asked whether children had had any accident, injury or poisoning in the last 3 months needing hospital treatment or a visit to casualty.

### 6.7.2 Results

- For 13% of children, it was reported that a GP had been consulted about their health in the past two weeks.
- 8% of children were reported as having an accident, injury or poisoning needing a visit to hospital in the past three months.
- 21% of children were reported to have attended an Accident and Emergency (casualty) department of a hospital in the past twelve months, and 21% an outpatient department.
- 78% of children were reported to have used a dentist in the past twelve months, and 32% an optician.

**Table 6.5**

## 6.8 Trends for key measures

Only two years of data is so far available for children, making it too soon to comment on trends. For some key variables, information is shown for the two years of the survey to date.

### 6.8.1 Results

The percentage of children estimated as obese was lower in 2008 than 2007, although the difference was not statistically significant.

**Table 6.6**

## References and notes

1. Health Challenge Wales: fitness.  
[www.wales.gov.uk/healthchallenge](http://www.wales.gov.uk/healthchallenge)
2. Sports Council Wales: active young people.  
[www.sports-council-wales.org.uk/getactiveinthecommunity/active-young-people/10864](http://www.sports-council-wales.org.uk/getactiveinthecommunity/active-young-people/10864)
3. Department of Health: physical activity.  
[www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4080994](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4080994)
4. Cole T, Freeman JV, Preece MA, Body Mass Index reference curves for the UK, 1990.  
[www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1511150](http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1511150)

## Tables

**Table 6.1** Reported health status and illnesses of children, by sex

*Per cent*

	Boys	Girls	Children
<b>General health status</b>			
Very Good	68	70	69
Good	26	24	25
Fair	5	5	5
Bad	1	1	1
Very bad	-	0	-
<b>Illnesses</b>			
Long-standing illness	21	17	19
Limiting long-standing illness	7	5	6
<b>Selected long-standing illnesses</b>			
Asthma	8	6	7
Skin complaint	2	3	3
Mental illness	5	1	3
<b>Illnesses currently being treated</b>			
Asthma	11	8	9
Another respiratory condition	2	2	2
Skin complaint	10	9	10
Ear complaint	4	4	4
Eye complaint	9	11	10
Musculoskeletal problems	4	4	4
Any mental illness	2	1	1
<b>Unweighted base (a)</b>	<b>1,424</b>	<b>1,229</b>	<b>2,653</b>

(a) Bases vary: those shown are for the whole sample.

**Table 6.2** Reported eating habits of children, by sex (a)

*Per cent*

	Boys	Girls	Children
<b>Eat daily</b>			
Fruit	55	61	58
Vegetables	47	55	51
Sweets	29	28	28
Chips	6	5	6
Potato crisps	18	19	18
Skimmed or semi-skimmed milk	63	60	62
Full fat milk	30	22	26
Low sugar soft drinks	20	20	20
Soft drinks	12	9	11
Water	59	62	61
<b>Eat less than once a week</b>			
Fruit	11	7	9
Vegetables	9	6	8
Sweets	5	4	5
Chips	18	21	20
Potato crisps	14	16	15
Skimmed or semi-skimmed milk	26	25	25
Full fat milk	61	69	65
Low sugar soft drinks	41	44	42
Soft drinks	57	63	60
Water	12	11	12
<b>Unweighted base (b)</b>	<b>1,071</b>	<b>949</b>	<b>2,020</b>

(a) Children aged 4-15.

(b) Bases vary: those shown are for the whole sample of children aged 4-15.

**Table 6.3** Reported physical activity of children, by sex (a)

*Per cent*

	Boys	Girls	Children
<b>Number of days with at least one hour of exercise in past week</b>			
None	12	14	13
One	5	7	6
Two	10	12	11
Three	8	13	10
Four	7	7	7
Five	10	10	10
Six	8	7	8
Seven	41	30	35
Five or more	58	47	53
<b>Unweighted base (b)</b>	<b>1,071</b>	<b>949</b>	<b>2,020</b>

(a) Children aged 4-15.

(b) Bases vary: those shown are for the whole sample of children aged 4-15.

**Table 6.4 Body Mass Index of children, by sex (a)**

*Per cent*

	Boys	Girls	Children
Overweight (b)	17	16	17
Obese (b)	17	15	16
Overweight or obese (b)	34	31	33
<b>Unweighted base</b>	<b>832</b>	<b>710</b>	<b>1,542</b>

(a) Children aged 2-15 with valid height and weight measurements.

(b) Based on 85th (overweight) and 95th (obese) percentiles of the 1990 UK BMI reference curves. See definitions at 6.6.1.

**Table 6.5 Reported health service use by children, by sex**

*Per cent*

	Boys	Girls	Children
Family doctor (GP) in the past two weeks	13	13	13
Accident needing hospital treatment in the past three months (a)	9	7	8
In the past twelve months:			
Accident & Emergency (casualty)	22	19	21
Outpatient	22	20	21
Day patient	5	4	4
Inpatient	5	5	5
Dentist (b)	78	78	78
Health visitor, district nurse or other community nurse	27	24	26
Practice nurse	23	25	24
Optician	30	33	32
Speech therapist	6	3	5
GP out of hours	12	12	12
NHS Direct helpline	11	11	11
Pharmacist	49	52	50
<b>Unweighted base (c)</b>	<b>1,424</b>	<b>1,229</b>	<b>2,653</b>

(a) Accident, injury or poisoning needing hospital treatment or a visit to casualty.

(b) Family, local, community, school or other dentist.

(c) Bases vary: those shown are for the whole sample.

**Table 6.6 Children's key health measures, 2007-2008**

	2007	2008
<b>Aged under 16:</b>		
Good/Very good general health	94	94
Long-standing illness	20	19
Limiting long-standing illness	7	6
<b>Aged 2 - 15:</b>		
Overweight or obese (a)	36	33
Obese (b)	20	16
<b>Unweighted base (c)</b>	2,668	2,653
<b>Unweighted base (d)</b>	1,765	1,542

(a) Based on 85th (overweight) percentiles of the 1990 UK BMI reference curves. See definitions at 6.6.1.

(b) Based on 95th (obese) percentiles of the 1990 UK BMI reference curves. See definitions at 6.6.1.

(c) Bases vary: those shown are for all children aged under 16.

(d) Children aged 2-15 with valid height and weight measurements.



## 7 Technical summary

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### 7.1 Introduction

This chapter provides some technical information about the survey. A more detailed technical report<sup>1</sup> is published by the National Centre for Social Research (NatCen), who carried out the survey on behalf of the Welsh Assembly Government.

This chapter includes information on:

- sampling (7.2)
- fieldwork (7.3)
- response (7.4)
- data preparation (7.5)
- weighting (7.6)
- sampling errors (7.7).

### 7.2 Sampling

#### 7.2.1 Introduction

The Welsh Health Survey (WHS) aimed to achieve a total sample of 15,000 adults, with at least 600 adults in each local authority, during the period January – December 2008. The issued sample consisted of 13,590 addresses selected from the small user version of the Post Office's Postcode Address File (PAF). The sample was stratified by local authority to allow for analysis of survey data at this level. An unclustered sample was selected within each authority<sup>2</sup>.

The PAF covers more than 99% of private households in Wales; the small proportion of people not covered by the PAF, including those living in institutions, were not covered by the WHS. It should be noted that people living in institutions are likely to be, on average, in poorer health than those in private households - this should be kept in mind when considering the results from this survey.

#### 7.2.2 Selection of primary sampling units, addresses and households

An unclustered sample of addresses was selected from each of the 22 local authorities. Addresses were selected at random from across the whole local authority area and then grouped into interviewer assignments or 'points'. There were 453 points in total, each containing 30 addresses. Addresses were grouped together on the basis of proximity, taking account of natural barriers such as mountains and rivers.

The decision to select an unclustered sample was based on the need for improved precision against a background of falling response rates<sup>2</sup>. An unclustered sample

should lead to a smaller design effect and consequently a larger effective sample size.

A small proportion of addresses in the PAF contain more than one household. If the number of households at an address selected for the WHS was three or less, then all the households were included in the survey. However, if more than three households were found, then three households were selected at random to be included. Weights were applied to correct for the selection of three households at multi-occupied addresses.

### 7.2.3 Sampling of children

Families with children aged under 16 were eligible for the child elements of the survey. In households with three or more children, two children were selected at random for participation to minimise respondent burden.

## 7.3 Fieldwork

### 7.3.1 Briefings and fieldwork period

Before fieldwork started, interviewers were briefed in person by the project researchers during briefings lasting a day each, covering all elements of the survey process.

Fieldwork started in January 2008. Each fieldwork point contained 30 addresses and fieldwork began on the first day of each month.

### 7.3.2 Fieldwork procedures

Prior to the interview, advance letters in English and Welsh were sent out by interviewers to all selected households. This included a set of questions and answers, and a phone number for NHS Direct for respondents to use if they had any queries about the survey. NHS Direct Wales operate a bilingual 24-hour service, and had been briefed on the survey.

Interviewers made contact with respondents by personal visit, with interviewers making a minimum of four calls at different times of the day and different days of the week to try and make contact. Having made contact, interviewers introduced the survey and presented a leaflet containing information about the survey and reinforcing confidentiality in data usage.

The survey consisted of a short household interview with a responsible adult (offered in English or Welsh). All adults aged 16 and over were left a self-completion questionnaire. There were three age-specific versions of the children's questionnaire (0-3 years, 4-12 years, and 13-15 years). Up to two children aged 0-15 were left a questionnaire for their age group, for completion by parent or guardian (0-12 years) or by children (13-15 years). Interviewers collected self-completion questionnaires. They also took height and weight measurements for selected children aged 2-15, after obtaining consent and according to a standard written protocol. Copies of the individual self-completion questionnaires are at Appendix A. All survey documents were available in English and Welsh.

## 7.4 Response

### 7.4.1 Introduction

Response may be broken down to two levels: household level response and individual level response (with individual response shown for adults and children separately).

### 7.4.2 Household response

In calculating household response, a recommended standard method for social surveys was used (details are in NatCen's report<sup>1</sup>). It incorporates an estimate of the number of eligible and deadwood (ineligible) cases amongst those where eligibility is uncertain. Using this method, the final 'adjusted' household response rate was 74%. Tables 7.1 and 7.2 show the household response rates for Wales as a whole, and by local authority.

### 7.4.3 Individual response

Individual response to self-completion questionnaires within productive households was 78% for adults and 76% for selected children. Height and weight measurements were obtained for 59% of eligible selected children in productive households. Tables 7.3 - 7.6 show the individual response rates for Wales as a whole and by local authority.

### 7.4.4 Combined household and individual response

Overall response rates can be calculated taking into account response both at the household and individual levels. The number of adults and children at non-responding households is not known, therefore the average number of adults and children in participating households is used to impute the denominator (i.e., the total number of adults and children in all eligible households). Using this approach, the combined response rate was estimated as 58% for adults and 56% for children.

## 7.5 Data preparation

### 7.5.1 Data keying and scanning

The household questionnaires were keyed in-house at NatCen. The self-completion questionnaires were sent directly to a scanning agency. Once these stages were complete, the scanned questionnaires, data and electronic images were sent to NatCen and the data linked to the household data through serial numbers (at both household and individual levels).

### 7.5.2 Data coding and editing

The self-completion questionnaires were edited using NatCen's in-house system. This ensured that routing was correctly followed, dealt with cases where respondents had coded more than one answer where only one was required, and reconciled incompatible answers. As a separate checking measure the

handwritten digits on the questionnaire were verified visually as part of the quality control process.

The occupation and industry of the Household Reference Person (HRP) was coded and, together with employment status, used to derive the National Statistics Socio-Economic Classification (NS-SEC).

Where respondents identified an 'other' illness they were being treated for, the text was converted to International Classification of Diseases (ICD) groups and chapters. The answers were matched against the previous pre-coded individual illness questions and 'backcoded' into them if appropriate. Where text was provided by respondents to identify a main illness that limited their daily activities or work, this was also converted to ICD groups and chapters.

### **7.5.3 Child Body Mass Index (BMI) classification**

The proportion of children who were overweight and obese was calculated according to the UK national BMI percentiles classification. Using 1990 reference data compiled from a number of sources as the baseline, and adjusted for age and sex, the threshold for overweight was defined as the 85th percentile and the threshold for obesity as the 95th percentile.

## **7.6 Weighting**

### **7.6.1 Introduction**

Respondents to the survey did not have equal chances of selection for a variety of reasons: the probability of selecting an address varied by local authority; at multiple occupancy addresses containing 4 or more households, 3 were selected at random for inclusion in the survey; and at households with 3 or more children, 2 were selected at random for inclusion. Hence it is necessary to weight the WHS sample.

Weights were also calculated to correct for non-response as some groups were under-represented, while others were over-represented. If the difference between the distribution of the survey sample and the true population was left uncorrected, it would lead to bias in the survey estimates.

Two sets of non-response weights were generated, household weights and individual weights. The household weights adjusted for non-contact and refusals of entire households, and the individual weights adjusted for non-response among individuals within responding households.

### **7.6.2 Selection weights**

The first stage of weighting corrected for the imbalances created by the different probabilities of selection within each local authority. Addresses in smaller authorities were over-sampled to ensure a minimum issued sample in each authority. Without appropriate weighting, these smaller authorities would be over-represented in the sample. Therefore, selection weights were calculated.

For each selected address, a maximum of three households was selected for the issued sample. Weights were therefore required to correct for the cases where

more than three households were found at a single address. (There were actually only 8 addresses in the sample for which four or more households were identified.)

### 7.6.3 Household non-response weights

A household non-response model was used to adjust for non-contact and refusals of entire households. The probability of household response was estimated using a logistic regression model, including geographic and Census variables (see NatCen's report<sup>1</sup> for details). Extreme weights below the 1<sup>st</sup> and above the 99<sup>th</sup> percentiles were trimmed to the values at these percentiles to avoid the situation where some individuals have a very large disproportionate influence on the survey estimates (either disproportionately large or disproportionately small).

Calibration weighting was used to further reduce household non-response bias. The initial weights were the product of the selection weights and the household non-response weight. Calibration weighting adjusted the weighted household sample so that the marginal distributions of age/sex and local authority for all individuals within responding households matched the 2007 mid-population estimates for Wales. The final household weights used were the weights after calibration.

### 7.6.4 Child selection weights

In households with children aged under 16, no more than two children were selected for inclusion. Weights were therefore required to correct for households including three or more children. (Three or more children were identified within 347 productive households.)

### 7.6.5 Individual level non-response weights

Individual weights were calculated for individual respondents to the survey to adjust for non-response at the self-completion stage, in addition to household non-participation. As non-response at each stage was hierarchical, the individual weights were calculated for responding individuals within responding households. Logistic regression models for adults and children were used to estimate the probability of response, using variables from the household interview. Extreme weights below the 1<sup>st</sup> and above the 99<sup>th</sup> percentiles were trimmed to the values at these percentiles.

Calibration weighting was used to ensure that the final sample matched the age/sex distribution of the population. The initial weights were the product of the household weights and the individual level non-response weights. The calibration weighting adjusted the weighted individual sample so that the marginal distribution of age/sex for all individuals and those of children and adults (separately) within local authority matched the 2007 mid-population estimates for Wales.

As a last step, each set of weights was scaled so that the weighted sample size was the same as the unweighted sample size (i.e., so that the mean of the weights was equal to 1).

## 7.7 Sampling errors

### 7.7.1 Introduction

As with any survey, results are subject to various sources of error. An important component of this is sampling error, which arises because the estimates are based on a sample rather than a full count of the population. The results obtained for any single sample are likely to vary slightly from the true population value, and the difference between the estimates derived from the sample and the population values is referred to as the sampling error. In general, the smaller the sample size the larger the potential error.

It is possible to estimate the size of sampling error by calculating the standard error of survey estimates. The standard error (*se*) of a percentage (*p*) based on a simple random sample of size *n* is calculated as:

$$se(p) = \sqrt{p(100-p)/n}$$

### 7.7.2 Design factors

The WHS was stratified at local authority level, with different probabilities of selection for different authorities. One of the effects of using this complex design is that standard errors for survey estimates are generally higher than the standard errors that would be derived from a simple random sample of the same size.

The ratio of the standard error of the complex sample to that of a simple random sample of the same size is known as the design factor. Put another way, the design factor (or 'deft') is the factor by which the standard error of an estimate from a simple random sample has to be multiplied to give the true standard error of the estimate, given the complex design.

True standard errors and defts for a selection of key WHS variables were calculated using a Taylor Series expansion method, and are shown in NatCen's report<sup>1</sup>.

NatCen's report<sup>1</sup> illustrates the effect of declustering the sample and found that it generally had a positive effect on precision at local authority level.

### 7.7.3 Confidence intervals

A confidence interval can be calculated around a survey estimate, which gives a range within which the true value for the population is likely to fall. The standard error (*se*) measures the precision with which the estimates from the sample approximate to the true population values and is used to construct the confidence interval for a survey estimate. The 95% confidence interval for a percentage (*p*) is calculated as:

$$p \pm 1.96 se(p)$$

Table 7.7 shows approximate 95% confidence intervals for percentages based on a particular sample size, assuming a simple random sample. Note that the WHS was a survey of complex design and as such is likely to have higher standard errors, and thus wider confidence intervals than shown in the table. It should

therefore be used as an approximate guide to precision only. NatCen's report contains true standard errors and defts for a selection of key variables.

### References and notes

1. NatCen (2009) *Welsh Health Survey - 2008 Technical Report*.  
[www.wales.gov.uk/statistics](http://www.wales.gov.uk/statistics)
2. In previous years of WHS the sample was stratified, with primary sampling units (PSU) selected within each local authority at the first stage and a fixed number of addresses selected from each PSU at the second stage.

## Tables

**Table 7.1 Household level response rates**

	Number of households	% of eligible sample	% of adjusted eligible sample
<b>Households issued (a)</b>	13,652		
Deadwood (ineligible)	1,536		
<b>Eligible sample</b>	12,116	100.0	
Total unknown eligibility	269	2.2	
Of which, estimate of deadwood	30		
<b>Adjusted eligible sample</b>	12,086		100.0
Estimate of eligible households among those of unknown eligibility	239		2.0
Refusals	1,997	16.3	16.4
Other unproductive	949	7.8	7.9
<b>Productive</b>	8,921	73.6	73.8

(a) From the 13,590 addresses issued, 13,652 separate households were identified.

**Table 7.2 Household response rates, by local authority**

	Eligible households (unadjusted)	Productive eligible households	Response rate	Adjusted response rate
	Number	Number	%	%
<b>Local authority:</b>				
Isle of Anglesey	471	361	76.6	76.8
Gwynedd	492	392	79.7	80.0
Conwy	537	414	77.1	77.4
Denbighshire	534	392	73.4	73.7
Flintshire	562	414	73.7	73.8
Wrexham	561	419	74.7	75.1
Powys	438	340	77.6	78.0
Ceredigion	429	349	81.4	81.8
Pembrokeshire	498	352	70.7	71.5
Carmarthenshire	580	440	75.9	76.0
Swansea	709	510	71.9	72.0
Neath Port Talbot	523	367	70.2	70.2
Bridgend	501	393	78.4	78.5
The Vale of Glamorgan	524	382	72.9	73.1
Cardiff	943	598	63.4	63.6
Rhondda Cynon Taf	720	526	73.1	73.1
Merthyr Tydfil	516	410	79.5	79.6
Caerphilly	533	395	74.1	74.2
Blaenau Gwent	506	380	75.1	75.1
Torfaen	516	365	70.7	70.8
Monmouthshire	453	328	72.4	72.5
Newport	570	394	69.1	69.2
<b>Wales</b>	<b>12,116</b>	<b>8,921</b>	<b>73.6</b>	<b>73.8</b>

**Table 7.3 Individual level response rates – adults**

	Number	% of issued sample
<b>Total number of adults identified</b>	17,053	100.0
Average number of adults in productive households	1.9	
Refusal	371	2.2
Questionnaire not returned	2,436	14.3
Other unproductive	933	5.5
<b>Productive</b>	13,313	78.1

**Table 7.4 Individual level response rates – children**

	Number	% of eligible sample
<b>Number of productive households with children</b>	2,291	
<b>Total number of children identified in productive households</b>	3,954	
Average number of children in productive households with children	1.7	
<b>Number of selected children in productive households (a)</b>	3,487	100.0
Average number of selected children in productive households with children	1.5	
Refusal (by child or parent)	55	1.6
Questionnaire not returned	582	16.7
Other unproductive	197	5.6
<b>Productive</b>	2,653	76.1

(a) A maximum of two children were selected per household.

**Table 7.5 Response to child height and weight measurements (a)**

	Height	Weight
<b>Number of eligible selected children (aged 2-15) in productive households</b>	3,057	3,057
Measurement unreliable	51	24
Child unavailable	429	416
Parent refusal	334	332
Child refusal	142	157
Unable to measure child	108	110
Don't know	194	202
Total non-response	1,258	1,241
<b>Reliable measurement achieved</b>	1,799	1,816
<b>Response rate (%)</b>	58.8	59.4

(a) For eligible selected children (aged 2-15) in productive households.

**Table 7.6 Individual response rates, by local authority**

	Adults (productive questionnaires)		Children (productive questionnaires)	
	<i>Number</i>	<i>% of issued sample</i>	<i>Number</i>	<i>% of eligible sample</i>
<b>Local authority:</b>				
Isle of Anglesey	564	81.7	91	74.6
Gwynedd	590	83.1	142	83.0
Conwy	632	83.2	118	86.8
Denbighshire	603	82.0	138	79.3
Flintshire	676	80.7	119	79.9
Wrexham	672	82.8	120	75.5
Powys	517	79.3	79	74.5
Ceredigion	560	83.5	93	78.2
Pembrokeshire	555	83.3	107	78.7
Carmarthenshire	644	77.0	124	76.5
Swansea	767	79.8	183	81.7
Neath Port Talbot	562	80.6	108	77.7
Bridgend	554	74.3	112	67.9
The Vale of Glamorgan	549	76.5	123	76.9
Cardiff	860	70.8	190	75.7
Rhondda Cynon Taf	764	74.0	133	71.5
Merthyr Tydfil	588	74.4	104	66.2
Caerphilly	575	75.5	141	77.0
Blaenau Gwent	518	70.1	101	68.7
Torfaen	510	74.3	104	70.3
Monmouthshire	491	80.1	91	78.4
Newport	562	77.6	132	74.6
<b>Wales</b>	<b>13,313</b>	<b>78.1</b>	<b>2,653</b>	<b>76.1</b>

**Table 7.7 95% confidence intervals (a) for a percentage estimate based on a simple random sample**

Estimated %:	sample size (b)											
	100	200	300	400	500	1,000	2,000	3,000	4,000	5,000	10,000	15,000
5%	4.3	3.0	2.5	2.1	1.9	1.4	1.0	0.8	0.7	0.6	0.4	0.3
10%	5.9	4.2	3.4	2.9	2.6	1.9	1.3	1.1	0.9	0.8	0.6	0.5
15%	7.0	4.9	4.0	3.5	3.1	2.2	1.6	1.3	1.1	1.0	0.7	0.6
20%	7.8	5.5	4.5	3.9	3.5	2.5	1.8	1.4	1.2	1.1	0.8	0.6
25%	8.5	6.0	4.9	4.2	3.8	2.7	1.9	1.5	1.3	1.2	0.8	0.7
30%	9.0	6.4	5.2	4.5	4.0	2.8	2.0	1.6	1.4	1.3	0.9	0.7
35%	9.3	6.6	5.4	4.7	4.2	3.0	2.1	1.7	1.5	1.3	0.9	0.8
40%	9.6	6.8	5.5	4.8	4.3	3.0	2.1	1.8	1.5	1.4	1.0	0.8
45%	9.8	6.9	5.6	4.9	4.4	3.1	2.2	1.8	1.5	1.4	1.0	0.8
50%	9.8	6.9	5.7	4.9	4.4	3.1	2.2	1.8	1.5	1.4	1.0	0.8
55%	9.8	6.9	5.6	4.9	4.4	3.1	2.2	1.8	1.5	1.4	1.0	0.8
60%	9.6	6.8	5.5	4.8	4.3	3.0	2.1	1.8	1.5	1.4	1.0	0.8
65%	9.3	6.6	5.4	4.7	4.2	3.0	2.1	1.7	1.5	1.3	0.9	0.8
70%	9.0	6.4	5.2	4.5	4.0	2.8	2.0	1.6	1.4	1.3	0.9	0.7
75%	8.5	6.0	4.9	4.2	3.8	2.7	1.9	1.5	1.3	1.2	0.8	0.7
80%	7.8	5.5	4.5	3.9	3.5	2.5	1.8	1.4	1.2	1.1	0.8	0.6
85%	7.0	4.9	4.0	3.5	3.1	2.2	1.6	1.3	1.1	1.0	0.7	0.6
90%	5.9	4.2	3.4	2.9	2.6	1.9	1.3	1.1	0.9	0.8	0.6	0.5
95%	4.3	3.0	2.5	2.1	1.9	1.4	1.0	0.8	0.7	0.6	0.4	0.3

- (a) The width of the interval depends on the value of the estimated percentage and the sample size on which it was based. 95% confidence intervals are formed as the estimated percentage  $\pm$  the value shown in the table for that sample size. For example, an estimated percentage of 25% based on a sample of 1,000 has a 95% confidence interval of  $25 \pm 2.7\%$  (ie, 22.3% - 27.7%).
- (b) Note that this table assumes a simple random sample, while the WHS was a survey of complex design and is therefore likely to have higher standard errors, and wider confidence intervals than shown. It should therefore be used as an approximate guide to precision only. NatCen's report contains true standard errors and defts for a selection of key WHS variables.

