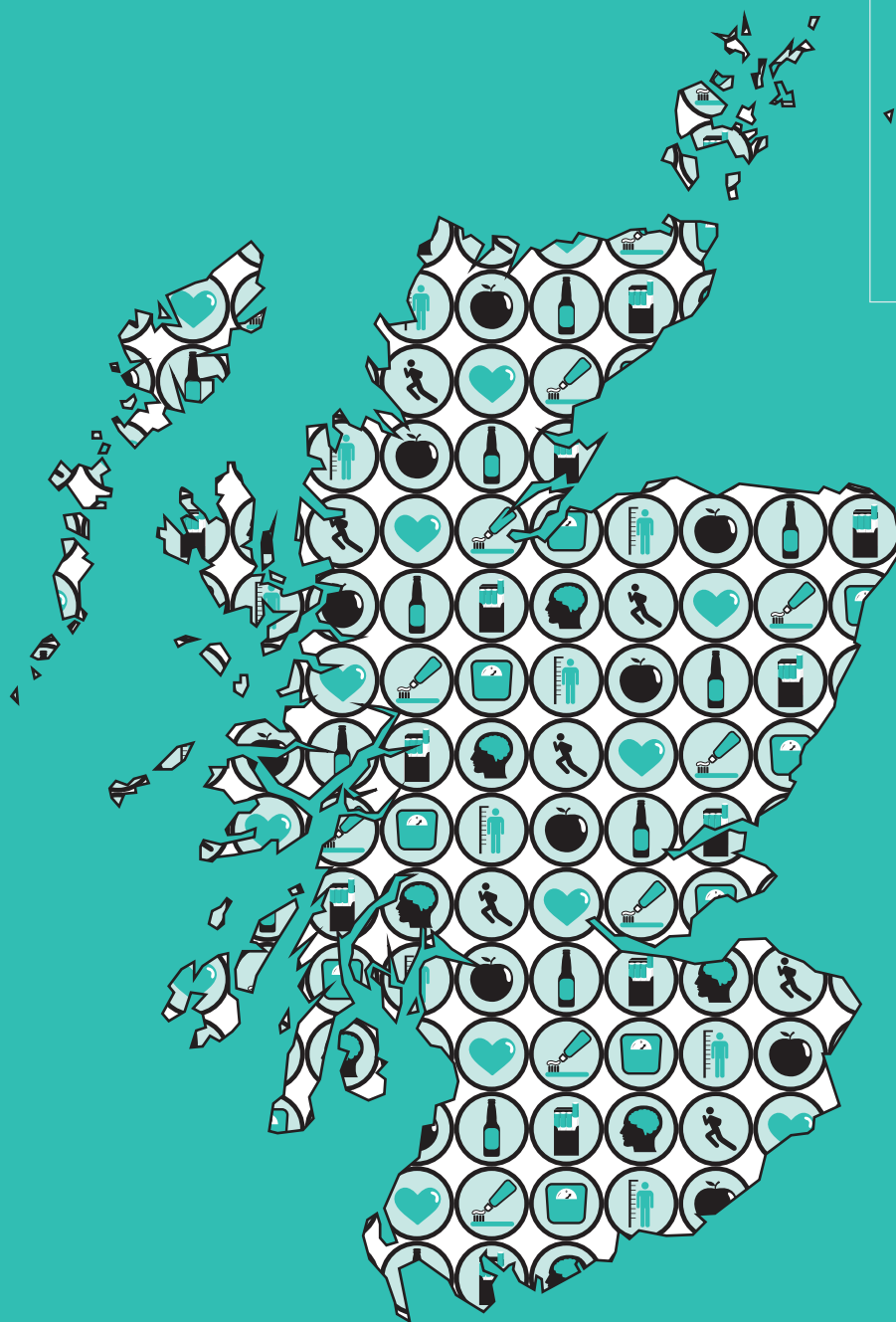




The Scottish  
Government  
Riaghaltas na h-Alba



# The Scottish Health Survey

2014 edition | volume 1 | main report

A National Statistics Publication for Scotland

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*Diarmid Campbell-Jack, Stephen Hinchliffe and Catherine Bromley*

## **Foreword from the Chief Medical Officer**

This report presents the findings of the 2014 Scottish Health Survey. The survey now provides data extending back some 20 years and has been running to a continuous design since 2008. The 2012-2015 surveys have been commissioned by the Scottish Government and produced by a collaboration between ScotCen Social Research, the MRC/CSO Social and Public Health Sciences Unit at the University of Glasgow, The Centre for Population Health Sciences at the University of Edinburgh and The Public Health Nutrition Research Group at Aberdeen University.

The survey provides us with an immensely valuable collection of data on cardiovascular disease and related risk factors including smoking, alcohol, diet, physical activity and obesity. Information on general health, mental health and dental health is also included.

The 2014 report includes in-depth results for population subgroups, and is the first to contain an inequalities chapter focusing on health by area deprivation. Responses to questions around electronic cigarettes, introduced to the 2014 survey, have also been reported for the first time this year, as has information on the perceived impact of the Commonwealth Games on physical activity and sports participation.

With each additional survey year, the ability to analyse trends adds considerably to the usefulness of this data source, while combining data from previous surveys allows for more detailed analysis of specific health conditions, risk factors and related health behaviours.

I am pleased to welcome this valuable report and to thank the consortium led by ScotCen Social Research for their hard work in conducting the survey and preparing this report. Most importantly, I would also like to thank the 6,327 people who gave their time to participate in the survey. The information they have provided is invaluable in developing and monitoring public health policy in Scotland.

**Dr Catherine Calderwood**  
**Chief Medical Officer for Scotland**  
**Scottish Government Health Directorates**

# INTRODUCTION

*Catherine Bromley*

## **POLICY CONTEXT**

Health features prominently in the Scottish Government's National Performance Framework (NPF).<sup>1,2</sup> The Government's core purpose, to create a more successful Scotland, is underpinned by five strategic objectives, one of which is to create a **healthier** Scotland. The objective is driven, in part, by the recognition of the considerable need to help people to sustain and improve health, particularly in disadvantaged communities. Of the 16 National Outcomes allied to the Government's strategic objectives, those of greatest relevance to health are:

**We live longer, healthier lives**

**We have tackled the significant inequalities in Scottish society.**

Many of the National Indicators that track progress towards the national outcomes have relevance to health.<sup>2</sup> The Scottish Health Survey (SHeS) is used to monitor progress towards the following National Indicators:

**Improve mental wellbeing**

**Increase physical activity**

**Improve self-assessed general health**

**Increase the proportion of healthy weight children.**

In addition, the purpose target to improve healthy life expectancy over the 2007 to 2017 period uses SHeS data for children (aged 0-15) in the calculations used to measure progress.

As a study of public health, the Scottish Health Survey (SHeS) plays an important role in assessing health outcomes and the extent of health inequalities in Scotland and how these have changed over time. Each of the chapters included in this volume addresses an aspect of health that relates either directly or indirectly to the Government's objective of improving the health of the people living in Scotland.

## **THE SCOTTISH HEALTH SURVEY SERIES**

The survey has been carried out annually since 2008 and prior to this was carried out in 1995,<sup>3</sup> 1998,<sup>4</sup> and 2003.<sup>5</sup> The 2014 survey was the tenth in the series.

Commissioned by the Scottish Government Health Directorates, the series provides regular information on aspects of the public's health and factors related to health which cannot be obtained from other sources. The SHeS series was designed to:

- estimate the prevalence of particular health conditions in Scotland
- estimate the prevalence of certain risk factors associated with these health conditions and to document the pattern of related health behaviours
- look at differences between regions and between subgroups of the population in the extent of their having these particular health conditions or risk factors, and to make comparisons with other national statistics for Scotland and England
- monitor trends in the population's health over time
- make a major contribution to monitoring progress towards health targets.

Each survey in the series includes a set of core questions and measurements (height and weight and, if applicable, blood pressure, waist circumference, urine and saliva samples), plus modules of questions on specific health conditions that vary from year to year. Each year the core sample has also been augmented by an additional boosted sample for children. Since 2008 NHS Health Boards have also had the opportunity to boost the number of adult interviews carried out in their area.

The 2012-2015 surveys are being carried out by ScotCen Social Research, the MRC/CSO Social and Public Health Sciences Unit (MRC/CSO SPHSU) based in Glasgow, The Centre for Population Health Sciences at the University of Edinburgh and The Public Health Nutrition Research Group at Aberdeen University.

## **THE 2014 SURVEY**

### **Topics**

Cardiovascular disease (CVD) and related risk factors remains the principal focus of the survey. The main components of CVD are ischaemic heart disease (IHD) (or coronary heart disease) and stroke, both of which have been identified as clinical priorities for the NHS in Scotland.<sup>6</sup> IHD is the second most common cause of death in Scotland after cancer, accounting for 14% of deaths in 2014, with a further 8% caused by stroke.<sup>7</sup> Early mortality from heart disease and stroke have also both improved in recent years (surpassing targets in both cases), but concern remains about continuing inequalities in relation to morbidity and mortality linked to these conditions.<sup>6</sup> The SHeS series now has trend data going back nearly two decades, and providing time series data remains an important function of the survey.

Many of the key behavioural risk factors for CVD are in themselves of particular interest to health policy makers and the NHS. For example, smoking, poor diet, lack of physical activity, obesity and alcohol misuse are all the subject of specific strategies targeted at improving the nation's health. SHeS includes detailed measures of all these factors, and others, and are reported on separately in Chapters 1-6. Chapter 7 focuses on respiratory health while Chapter 8 covers CVD and

diabetes. Chapter 9 examines trends in the unequal patterning of health risk factors by area deprivation, for both adults and children. Chapter 9 also presents detailed analysis of some risks by area deprivation for 2014.

### **Sample**

The 2012-2015 surveys were designed to yield a representative sample of the general population living in private households in Scotland every year. Estimates at NHS Health Board level will be available once 2012-2015 data collection has been completed.

Those living in institutions, who are likely to be older and, on average, in poorer health than those in private households, were outwith the scope of the survey. This should be borne in mind when interpreting the survey findings.

A random sample of 4457 addresses was selected from the Postcode Address File (PAF), using a multi-stage stratified design. Where an address was found to have multiple dwelling units, one was selected at random. Where there were multiple households at a dwelling unit, a single household was selected at random. Each individual within a selected household was eligible for inclusion. Where there were more than two children in a household, two were randomly selected for inclusion, to limit the burden on households.

Two further samples were selected for the survey in 2014: a child boost sample (4147 addresses) in which up to two children in a household were eligible to be interviewed but adults were not, and a Health Board boost sample (1046 addresses) for those Health Boards which opted to boost the number of adults interviewed in their area.

### **Fieldwork**

A letter stating the purpose of the visit was sent to each sampled address in advance of the interviewer visit. Interviewers sought the permission of each eligible adult in the household to be interviewed, and both parents' and children's consent to interview up to two children aged 0-15.

Interviewing was conducted using Computer Assisted Interviewing (CAI). The content of the interview and full documentation are provided in Volume 2 of this report.

Adults (aged 16 and over) and children aged 13-15 were interviewed themselves. Parents of children aged 0-12 completed the interview on behalf of their child.

Those aged 13 and over were also asked to complete a short paper self-completion questionnaire on more sensitive topics during the interview. Parents of children aged 4-12 years selected for interview

were also asked to fill in a self-completion booklet about the child's strengths and difficulties designed to detect behavioural, emotional and relationship difficulties.

Towards the end of the interview height and weight measurements were taken from those aged 2 and over.

In a sub-sample of households, interviewers sought permission from adults (aged 16 and over) to take part in an additional 'biological module'. The biological module was administered by specially trained interviewers. In the module, participants were asked questions about prescribed medication and anxiety, depression, self-harm and suicide attempts. In addition, the interviewer also took participants' blood pressure readings and waist measurement as well as samples of saliva and urine. Further details of these samples and measurements are available both in the Glossary and in Volume 2.

### Survey response

In 2014, across all sample types, interviews were held in 3011 households with 4659 adults (aged 16 and over), and 1668 children (aged 0-15). 1304 adults also completed the biological module. The number of participating households and adults in 2014 is listed in the table below. Further details on survey response in 2014 are presented in Chapter 1, Volume 2.

<b>Main and Health Board boost samples</b>	
Participating households	3011
Eligible households responding	62%
Adult interviews	4659
Eligible adults responding	56%
Adults eligible for biological module	1834
Adults who completed biological module	1304
<b>Child boost sample</b>	
Participating households	555
Eligible households responding	68%
Child interviews (child boost sample only)	858
Child interviews (main and child boost sample combined)	1668

### Ethical Approval

Ethical approval for the 2014 survey was obtained from the REC for Wales committee (reference number 12/WA/0261).

## DATA ANALYSIS

### Weighting

Since addresses and individuals did not all have equal chances of selection, the data have to be weighted for analysis. SHes comprises of

a general population (main sample) and a boost sample of children screened from additional addresses. Therefore slightly different weighting strategies were required for the adult sample (aged 16 or older) and the child main and boost samples (aged 0-15). Additional weights have been created for the biological module and for use on combined datasets (described below). A detailed description of the weights is available in Volume 2, Chapter 1.

### **Weighted and unweighted data and bases in report tables**

All data in the report are weighted. For each table in the report both weighted and unweighted bases are presented. Unweighted bases indicate the number of participants involved. Weighted bases indicate the relative sizes of sample elements after weighting has been applied.

### **Standard analysis variables**

As in all previous SHeS reports, data for men, women, boys and girls are presented separately where possible. Many of the measures are also reported for the whole adult or child population. Survey variables are tabulated by age groups and, usually, Scottish Index of Multiple Deprivation (SIMD), National Statistics Socio-Economic Classification (NS-SEC), and equivalised household income.

### **Statistical information**

The SHeS 2014 used a clustered, stratified multi-stage sample design. In addition, weights were applied when obtaining survey estimates. One of the effects of using the complex design and weighting is the standard errors for the survey estimates are generally higher than the standard errors that would be derived from an unweighted simple random sample of the sample size. The calculations of standard errors shown in tables, and comment on statistical significance throughout the report, have taken the clustering, stratifications and weighting into account. Full details of the sample design and weighting are given in Volume 2, Chapter 1.

### **Presentation of trend data**

Trend data are presented, where possible, for the ten surveys in the series to-date (1995, 1998, 2003, 2008-2014). In some cases trend data are restricted to those aged 16-64 (the age range common to all ten surveys in the series to-date) and for some other measures trends are available for the 16-74 age range (common to the 1998 survey onwards). Trends based on the surveys from 2003 onwards are presented for all adults aged 16 and over. Trends for children are based on the 2-15 years age group from 1998 onwards, and 0-15 years from 2003 onwards.

### **Presentation of results**

Commentary in the report highlights differences that are statistically significant at the 95% confidence level. Statistical significance is not intended to imply substantive importance. A summary of findings is



presented at the beginning of each chapter. Each chapter then includes a brief overview of the relevant policy area. These overviews should be considered alongside the higher level policies noted above and related policy initiatives covered in other chapters. A description of the methods and key definitions are also outlined in detail in each chapter. Tables showing the results discussed in the text are presented at the end of each chapter.

### **Availability of further data**

As with surveys from previous years, a copy of the SHeS 2014 data will be deposited at the UK Data Archive along with a copy of the 2012/2014 combined dataset. In addition, trend tables showing data for key variables are available on the Scottish Government SHeS website along with a detailed set of web tables for 2014.<sup>8</sup>

### **Comparability with other UK statistics**

The National Statistician commissioned a piece of work to examine comparability and coherency between official statistics published by the four nations of the UK with the aim of ensuring there was clarity on the suitability of comparability across the UK. The review was carried out by a Government Statistical Service (GSS) Task and Finish Group on Comparability (TFG). The findings, published in a Government Statistical Service publication,<sup>9</sup> include guidance on comparing statistics on three of the topics included in this report: alcohol consumption (chapter two), smoking (chapter three) and obesity (chapter six). Further guidance on the comparability of statistics across the UK on these topics is included in the introductory section of each of the relevant chapters.

## **CONTENT OF THIS REPORT**

This volume contains chapters with substantive results from the SHeS 2014, and is one of two volumes based on the survey, published as a set as 'The Scottish Health Survey 2014':

### **Volume 1: Main Report**

1. General health and mental wellbeing
2. Alcohol
3. Smoking
4. Diet
5. Physical activity
6. Obesity
7. Respiratory health
8. Cardiovascular conditions and diabetes
9. Inequalities in health risks

## Volume 2: Technical Report

Volume 2 includes a detailed description of the survey methods including: survey design and response; sampling and weighting procedures; and, information on laboratory analysis of urine and saliva samples.

Both volumes are available from the Scottish Government's SHeS website. A summary report of the key findings from the 2014 report and a set of web tables are also available on the survey website: [www.gov.scot/scottishhealthsurvey](http://www.gov.scot/scottishhealthsurvey).

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- <sup>8</sup> See: [www.gov.scot/scottishhealthsurvey](http://www.gov.scot/scottishhealthsurvey)
- <sup>9</sup> Comparing official statistics across the UK. Full report available from: [gss.civilservice.gov.uk/wp-content/uploads/2014/02/Comparability-Report-Final.pdf](http://gss.civilservice.gov.uk/wp-content/uploads/2014/02/Comparability-Report-Final.pdf)

## NOTES TO TABLES

- 1 The following conventions have been used in tables:  
n/a no data collected  
- no observations (zero value)  
0 non-zero values of less than 0.5% and thus rounded to zero  
[ ] normally used to warn of small sample bases, if the unweighted base is less than 50. (If a group's unweighted base is less than 30, data are normally not shown for that group.)
- 2 Because of rounding, row or column percentages may not add exactly to 100%.
- 3 A percentage may be quoted in the text for a single category that aggregates two or more of the percentages shown in a table. The percentage for the single category may, because of rounding, differ by one percentage point from the sum of the percentages in the table.
- 4 Values for means, medians, percentiles and standard errors are shown to an appropriate number of decimal places. Standard Errors may sometimes be abbreviated to SE for space reasons.
- 5 'Missing values' occur for several reasons, including refusal or inability to answer a particular question; refusal to co-operate in an entire section of the survey (such as a self-completion questionnaire); and cases where the question is not applicable to the participant. In general, missing values have been omitted from all tables and analyses.
- 6 The population sub-group to whom each table refers is stated at the upper left corner of the table.
- 7 Both weighted and unweighted sample bases are shown at the foot of each table. The weighted numbers reflect the relative size of each group in the population, not numbers of interviews conducted, which are shown by the unweighted bases.
- 8 The term 'significant' refers to statistical significance (at the 95% level) and is not intended to imply substantive importance.
- 9 Within the report Figures have generally been produced using data rounded to the nearest whole number. There are a small number of Figures which show data to the nearest decimal place in order to aid interpretation.



# 1 GENERAL HEALTH AND MENTAL WELLBEING

Laura Brown

## SUMMARY

### Self-assessed general health

- In 2014, 74% of adults identified their health as 'good' or 'very good'; 8% said it was 'bad' or 'very bad'.
- Almost all (95%) children were reported to have 'good' or 'very good' health, and just 1% 'bad' or 'very bad'.
- Levels of self-assessed general health have remained fairly static since 2008, for both adults and children.
- Self-assessed health tended to decline with age, with 85% of those aged 16-24 reporting their health as 'good' or 'very good', and just 2% 'bad' or 'very bad'. By ages 75 and over, the respective figures were 53% and 15%.
- Self-assessed health also declined as levels of deprivation increased. Using age-standardised figures, 84% of adults in the least deprived areas were in good health, and 2% bad, compared with 57% in good health in the most deprived areas, and 18% in bad health.

### Long-term conditions

- In 2014, 46% of adults had one or more long-term conditions (31% limiting, 15% non-limiting), with 19% of children having a long-term condition.
- The prevalence of long-term conditions increased with age, from a quarter (25%) of adults aged 16-24 to three-quarters (77%) of those aged 75 and over. Prevalence, and patterns by age, were similar for both men and women.

### Wellbeing

- Levels of wellbeing in the population, as measured by the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) have remained fairly constant since 2008 (a mean of 50.0 in both 2008 and 2014).
- Wellbeing was lowest for those aged 45-54 (a mean of 49.2), with similar levels for both men and women.
- WEMWBS mean scores were lower in more deprived areas, declining from 51.1 in the least deprived to 47.3 in the most deprived.

### Mental health

- In 2014, 16% of adults exhibited signs of a possible psychiatric disorder (GHQ-12 score of four or more).
- Women were slightly more likely than men to have a high GHQ-12 score (17% four or more, compared with 14% of men).
- High GHQ-12 scores were more common among those aged 16-64 (15-19%) than those aged 65 and over (8-12%).

### Life satisfaction

- On a scale of 0-10, the average level of life satisfaction for adults in 2014 was 7.8. It was highest for those aged 65 and over (8.0-8.1) and lowest for those aged 45-54 (7.5).

## 1.1 INTRODUCTION

This chapter covers two interrelated topics: self-assessed general health, including self-reported long-term conditions, and mental health and wellbeing. Population measures of self-reported health can be a general indicator of the burden of disease on society. It reflects subjective experiences of both diagnosed and undiagnosed illnesses, and their severity, which more objective measures for the whole population can sometimes overlook. Mental wellbeing, together with physical and social wellbeing, is one aspect of overall wellbeing. It is important as an indicator of quality of life, and reflects positive affect and mental functioning, rather than just mental ill-health. Both general health and mental wellbeing are critical measures of the population's overall health status and are key markers of health inequalities.<sup>1</sup>

Self-assessed general health is often a reflection on the presence or absence of long-term conditions, both physical and mental. Such conditions account for 80% of all GP consultations and for 60% of all deaths in Scotland.<sup>2</sup> People with a long-term condition are twice as likely as those without to be admitted to hospital and stay in hospital disproportionately longer.<sup>3</sup> Older people are more likely to have multiple long-term conditions. Given Scotland's ageing population (in 2012, 8% of the population were 75 and over; this is predicted to rise to 13.5% by 2037<sup>4</sup>), this becomes more of a public health issue.<sup>2</sup> The link with deprivation, lifestyle factors and wider health determinants is also of importance in Scotland given its persistent health inequalities.<sup>2</sup> Long-term conditions therefore represent personal, social and economic costs both to individuals and their families and to Scottish society more widely.

The World Health Organisation (WHO) considers mental wellbeing to be fundamental to their definition of health.<sup>5</sup> Mental disorders often co-exist with other diseases, including cancers and cardiovascular disease, and many of the risk factors covered in this report, such as obesity, excessive alcohol consumption, and low levels of physical activity, are common to both mental disorders and other non-communicable diseases.

Mental illness represents a significant public health challenge globally. Those with mental disorders have disproportionately higher disability and mortality than the general population, dying on average more than 10 years earlier.<sup>6</sup> Neuropsychiatric disorders are the second largest contributor to the burden of disease in Europe and mental disorders account for around 40% of all years lived with disability.<sup>6</sup> Accounting for 4.3% of the global burden of disease, depression is now the largest single cause of disability worldwide (11% of all years lived with disability globally) and is the leading chronic condition in Europe.<sup>5,6</sup> Inequalities in mental health and wellbeing exist. Globally, depression is more prevalent among women than men,<sup>5</sup> while, throughout Europe, prevalence of most mental disorders is higher among those living in more deprived areas.<sup>6</sup>

### 1.1.1 Policy background

In recognition of the challenges posed by long-term conditions – both for the individual and their families, as well as for health and care services – the Scottish Government's **National Action Plan** for long-

term conditions<sup>2</sup> was published in 2009. This defined long-term conditions as 'health conditions that last a year or longer, impact on a person's life, and may require ongoing care and support'. Conditions include mental health problems and a wide range of physical conditions such as chronic pain, arthritis, inflammatory bowel disease. Delivering on a commitment made in the earlier Better Health, Better Care: Action Plan, the National Action Plan recognised the need for system-wide action in response to the challenge presented by the increasing prevalence of long-term conditions within the context of an ageing population, the links to health inequalities, and the particular challenges of multi-morbidity – the experience of two or more long-term conditions.

The **Mental Health Strategy for Scotland: 2012-2015**,<sup>6</sup> published in August 2012, sets out the Scottish Government's key commitments in relation to improving the nation's mental health and wellbeing and for ensuring improved services and outcomes for individuals and communities. The strategy includes 36 commitments, 7 key themes and 4 key change areas it will adhere to in achieving these priorities. It promotes safe, effective and person-centred health and care. In addition to focussing on improved service delivery there is also an emphasis on the actions that individuals and communities can take to maintain and improve their own health.

Examples of this approach include the Living Life Guided Self Help Service operated by NHS 24, the Steps for Stress resources managed by NHS Health Scotland, and Ginsberg - a web-based tool launched by the Scottish Government to help people manage their wellbeing in relation to other aspects of their lives. Ginsberg allows people to see patterns that are developing, to draw links between what they are doing with their time and how they are feeling, and to see the changes they can make to improve their wellbeing.

There are a number of other mental health strategies, including the **Autism strategy**, the **Learning Disability strategy "the keys to life"**, the **dementia strategy** and the **alcohol framework and road to recovery drug strategy**.

Supporting the Scottish Government's overall purpose, the current strategy builds upon the work of a number of key policy documents including **Delivering for Mental Health**<sup>7</sup> (published in 2006), and **Towards a Mentally Flourishing Scotland**,<sup>8</sup> which covered the 2009-2011 period. The previous strategy was aimed at promoting good mental wellbeing; reducing the prevalence of common mental health problems, suicide and self-harm; and improving the quality of life of those experiencing mental health problems and mental illnesses.

One of the Scottish Government's National Outcomes is the overall strategic objective for health: We live longer, healthier lives.<sup>9</sup> This is supported by a number of National Indicators including '**improve self-assessed general health**' and '**improve mental wellbeing**'.<sup>9</sup> Data from the Scottish Health Survey (SHeS) is used to monitor progress



towards both these indicators. In addition, the purpose target to improve healthy life expectancy over the 2007 to 2017 period uses SHeS data for children (aged 0-15) in the calculations used to measure progress. The fact that those with mental disorders die, on average, earlier than the general population impacts on another National Indicator; to 'reduce premature mortality'. Scotland also has a set of national, sustainable mental health indicators for adults and children, covering both outcomes and contextual factors that confer increased risks of, or protection from, poor mental health outcomes.<sup>10</sup> SHeS is the data source for 28 of the 54 indicators for adults<sup>11</sup> and over 20 of the indicators for children.<sup>12</sup>

There was an NHS Scotland HEAT target to reduce the suicide rate between 2002 and 2013 by 20%.<sup>13</sup> By 2013, the suicide rate declined by 19%, just short of the target.<sup>13</sup> There were additional NHS Scotland HEAT targets for specialist Child and Adolescent Mental Health Services (CAMHS), and for access to Psychological Therapies (across all ages in the population), to achieve 18 week maximum referral to treatment times.<sup>14</sup> In January 2015, the targets become standards in NHS Scotland Local Delivery Plans<sup>15</sup>. Figures for the quarter ending March 2015 show that the target was met for 79% of referrals of children and young people<sup>16</sup>. Figures from data still under development suggest that around 83% of patients (across all ages) starting a psychological therapy met the target during the same period.<sup>14,17</sup> The Scottish Government has announced additional funding to continue to improve mental health across Scotland and ensure that people get timely access to services.

### 1.1.2 Reporting on general health and mental wellbeing in the Scottish Health Survey (SHeS)

This chapter updates trends in self-assessed health for both adults and children, and trends in mental wellbeing for adults. Figures are also reported for 2014 by age and sex, and by area deprivation. Prevalence of long-term conditions, mental health (as measured by the GHQ-12 questionnaire) and life satisfaction are reported for different age groups in 2014.

## 1.2 METHODS AND DEFINITIONS

### 1.2.1 Self-assessed general health

Each year participants aged 13 and over are asked to rate their health in general with possible answer options ranging from 'very good' to 'very bad'. For children under the age of 13 the question is answered by the parent or guardian completing the interview on their behalf. This question is used to monitor the National Indicator '**improve self-assessed health**,' while the data on children is used in the calculation of healthy life expectancy used to monitor the purpose target on this. It is also included in both the adult and child mental health indicators sets.<sup>10</sup>

### 1.2.2 Self-reported long-term conditions

All participants were asked if they had any physical or mental health condition or illness lasting - or likely to last - for twelve months or more. Those who reported having such a condition were asked to provide details of the type(s) of conditions or illnesses reported. Answers were recorded verbatim and then coded in the office. Those reporting a condition were also asked if it limited their daily activities a lot, a little, or not at all. This enabled conditions to be classified as either 'limiting' or 'non-limiting'. These questions did not specify that conditions had to be doctor-diagnosed; responses were thus based on individuals' perceptions.

### 1.2.3 Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)

Wellbeing is measured using the WEMWBS questionnaire. It has 14 items designed to assess: positive affect (optimism, cheerfulness, relaxation) and satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, mastery and autonomy).<sup>18</sup> The scale uses positively worded statements with a five-item scale ranging from '1 - none of the time' to '5 - all of the time'. The lowest score possible is therefore 14 and the highest score possible is 70; the tables present mean scores.

The scale was not designed to identify individuals with exceptionally high or low levels of positive mental health so cut off points have not been developed.<sup>19</sup> The scale was designed for use in English speaking populations, however in a very small number of cases, the questions were translated to enable the participation of people who did not speak English.<sup>20</sup>

WEMWBS is used to monitor the National Indicator '**improve mental wellbeing**'.<sup>9</sup> It is also part of the Scottish Government's adult mental health indicator set, and the mean score for parents of children aged 15 years and under on WEMWBS is included in the mental health indicator set for children.<sup>10</sup>

### 1.2.4 GHQ-12

GHQ-12<sup>21</sup> is a widely used standard measure of mental distress and psychological ill-health consisting of 12 questions on concentration abilities, sleeping patterns, self-esteem, stress, despair, depression, and confidence in the previous few weeks. Responses to each of the GHQ-12 items are scored, with one point allocated each time a particular feeling or type of behaviour is reported to have been experienced 'more than usual' or 'much more than usual' over the previous few weeks. These scores are combined to create an overall score of between zero and twelve. A score of four or more (referred to as a high GHQ-12 score) has been used here to indicate the presence of a possible psychiatric disorder. A score of zero on the GHQ-12 questionnaire can, in contrast, be considered to be an indicator of psychological wellbeing. GHQ-12 measures deviations from people's

usual functioning in the previous few weeks and therefore cannot be used to detect chronic conditions.

### **1.2.5 Life satisfaction**

Life satisfaction is measured by asking participants to rate, on a scale of 0 to 10, how satisfied they are with their life in general. On the scale, 0 represented 'extremely dissatisfied' and 10 'extremely satisfied' (the intervening scale points were numbered but not labelled). This measure has been used in numerous international surveys. There are no pre-defined cut-off points within the scale to distinguish between different levels of satisfaction. However, a summary measure was used in this analysis which identified three groups of interest based on the overall distribution of scores in the whole population: people with the highest levels of satisfaction (scores of 9 or 10), people with an average satisfaction level (score 8), and those with below average scores (0-7).

## **1.3 SELF-ASSESSED GENERAL HEALTH AND MENTAL WELLBEING**

### **1.3.1 Trends in self-assessed general health since 2008**

Table 1.1 reports trends in self-assessed general health for adults (aged 16 and over) and children (aged 0-15). Since 2008 the self-assessed general health of adults (aged 16 and over) has remained largely unchanged. Over this period, the proportion of adults reporting their general health as 'good' or 'very good' has fluctuated between 74% and 77% (staying at 74% for the past three years). Likewise, the proportion of adults describing their general health as 'bad' or 'very bad' has changed very little (7-9%, in all years, 8% in 2014).

Levels of self-assessed general health have been relatively stable for both men and women over time. However, there has been a slight decline in the proportion of men describing their health as 'good' or 'very good' (from 77% in 2011 to 74% in 2014).

The proportion of children (aged 0-15) reported to have 'good' or 'very good' health has also remained relatively constant since 2008 (at 94-96%). In 2014, 95% of children had 'good' or 'very good' health (the same as in 2013). The proportion of children with 'very good' health has shown some variation over time (from 65-70%), but this was largely due to a peak in 2011, as the remaining years' figures were more similar (65-68%). Since 2008 the proportion of children reporting 'bad' or 'very bad' general health has remained consistently low, at 1% or less.

**Table 1.1**

### **1.3.2 Self-assessed general health among adults in 2014, by age and sex**

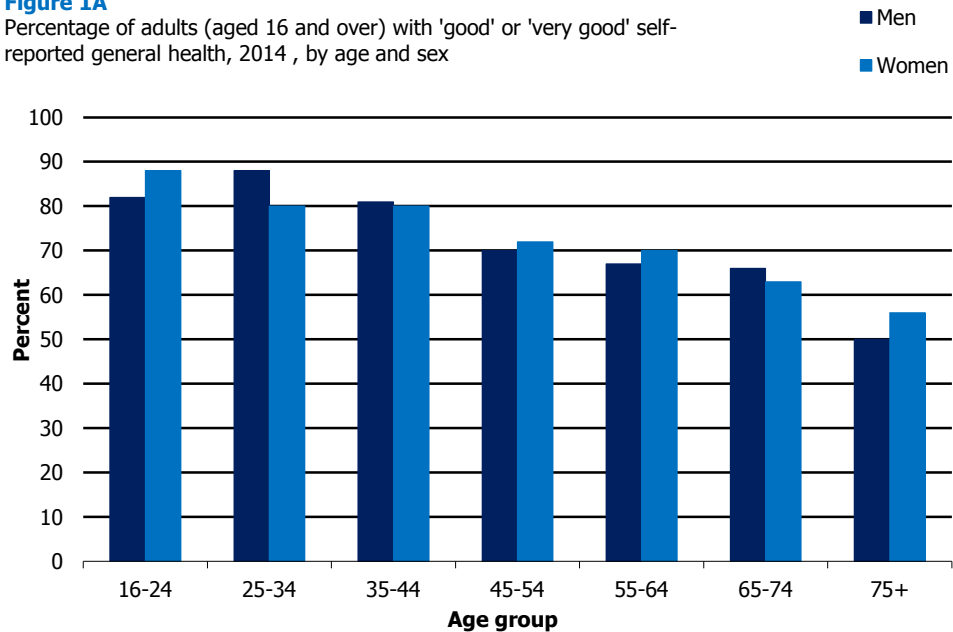
In 2014, 32% of adults (aged 16 and over) assessed their general health as 'very good', 41% as 'good' and 18% as 'fair'. In addition, 6% said it was 'bad' and 2% that it was 'very bad'. Men's and women's self-assessed health were not significantly different.

The age-related patterns in self-assessed health in 2014 were similar to those presented in previous SHeS reports.<sup>22</sup> Levels of 'good' or 'very good' self-assessed health decreased as age increased (from 84-85% among adults aged 16-34, to 53% of those aged 75 and over). Conversely, self-reported 'bad' or 'very bad' health increased with age (from 2% for adults aged 16-24, to 15% of adults aged 75 and over). These age-related patterns were true for both men and women.

**Figure 1A, Table 1.2**

**Figure 1A**

Percentage of adults (aged 16 and over) with 'good' or 'very good' self-reported general health, 2014, by age and sex



### 1.3.3 Self-assessed general health among adults in 2014, by area deprivation and sex

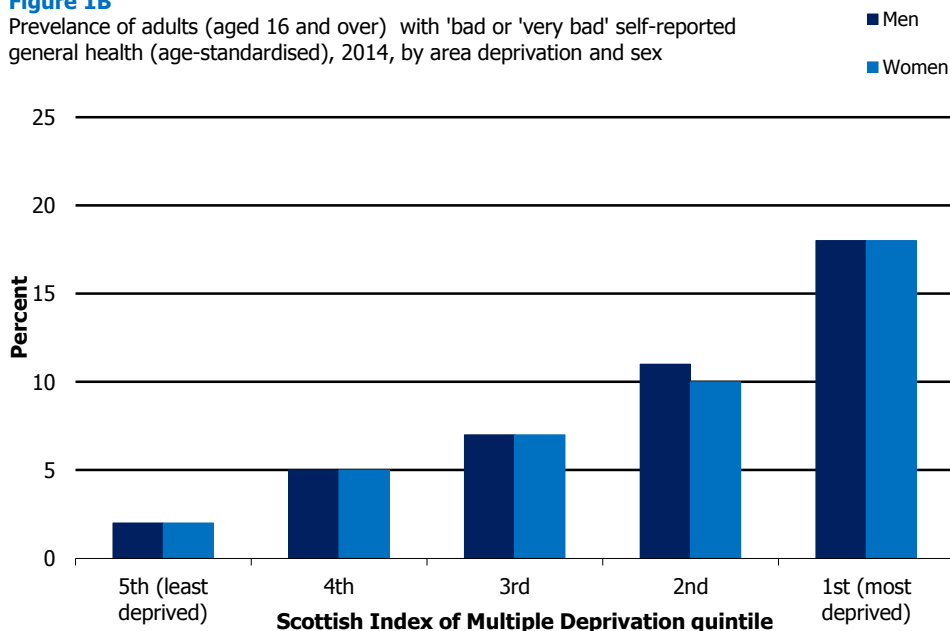
Area deprivation was measured using the Scottish Index of Multiple Deprivation (SIMD), grouped into quintiles. To ensure that the comparisons presented by SIMD are not confounded by the different age profiles of the sub-groups, the figures reported in Table 1.3 (and all other SIMD tables reported below) have been age-standardised (age-standardisation is described in the Glossary).

In 2014, self-assessed general health was significantly associated with area deprivation. Adults (aged 16 and over) living in the least deprived areas had the highest levels of 'good' or 'very good' self-assessed health (84%), and this declined successively across the quintiles to 57% among those in the most deprived areas. The opposite was true for 'bad' or 'very bad' health, which increased from 2% among adults living in the least deprived areas, to 18% for adults living in the most deprived areas. These patterns were true for both men and women.

**Figure 1B, Table 1.3**

**Figure 1B**

Prevalence of adults (aged 16 and over) with 'bad or 'very bad' self-reported general health (age-standardised), 2014, by area deprivation and sex



### 1.3.4 Prevalence of long-term conditions in 2014, by age and sex

#### **Adults**

In 2014, 46% of adults (aged 16 and over) had at least one long-term condition. This figure was comprised of 31% who had one or more limiting conditions, and 15% with only non-limiting conditions. The prevalence of long-term conditions was the same for both men and women.

As noted in previous reports, the prevalence of long-term conditions increased markedly with age in 2014, from a quarter (25%) of adults aged 16-24 to around three-quarters (77%) of those aged 75 and over (with very similar patterns for men and women). Most of this increase with age was due to rising prevalence of limiting conditions (15% and 61%, in the youngest and oldest groups, respectively). In contrast, the proportion with only non-limiting conditions increased from 10-11% in the 16-34 age group, to 22% of those aged 65-74 (and 16% in the oldest group).

**Table 1.4**

#### **Children**

Table 1.4 also includes the 2014 figures for children aged 0-15. In total, 19% of children had a long-term condition (11% limiting, 9% only non-limiting). The figure for boys (21%) was higher than for girls (18%), although this difference between sexes was not significant. Boys were, however, significantly more likely than girls to have a limiting condition (12% and 9%, respectively).

**Table 1.4**

### 1.3.5 Trends in WEMWBS mean scores since 2008

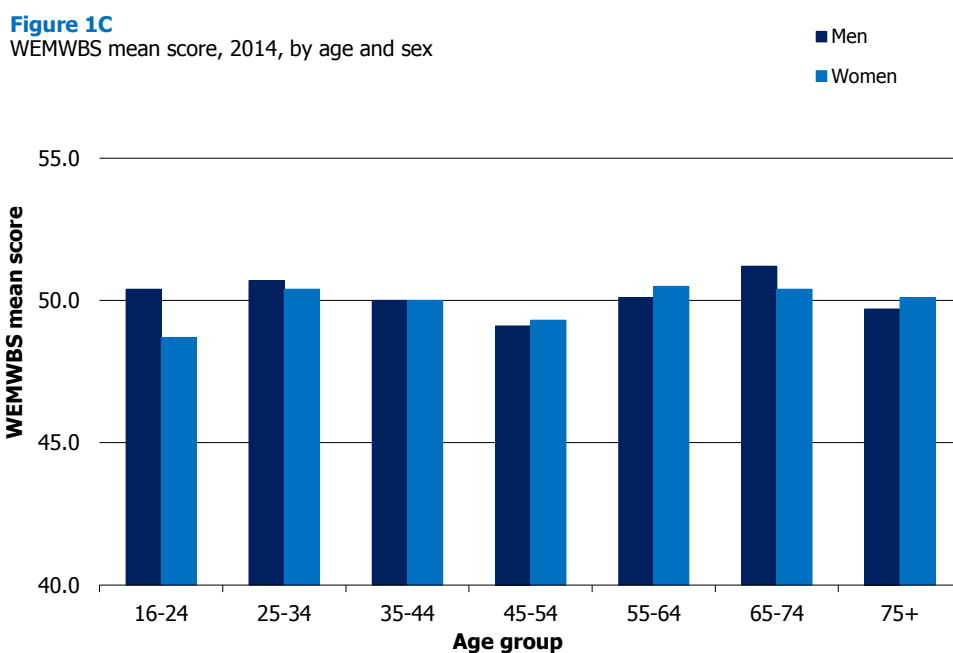
WEMWBS mean scores continue to be relatively static, with only minor, non-significant, fluctuations observed since 2008 (50.0 in 2008 and in both 2013 and 2014). Mean scores have not changed significantly over time for men or women.

**Table 1.5**

### 1.3.6 WEMWBS mean scores in 2014, by age and sex

In 2014, the average mean WEMWBS score for adults (aged 16 and over) was 50.0. The scores for men (50.1) and women (49.9) were not significantly different. As seen in previous years,<sup>23</sup> and illustrated in Figure 1C, levels of wellbeing varied across age groups. Men's wellbeing was lowest for those aged 45-54 (49.1), and highest for those aged 65-74 (51.2). Women's wellbeing showed less variation for those aged 25 and over (49.3-50.5), with lower levels seen for those aged 16-24 (48.7).

Figure 1C, Table 1.6

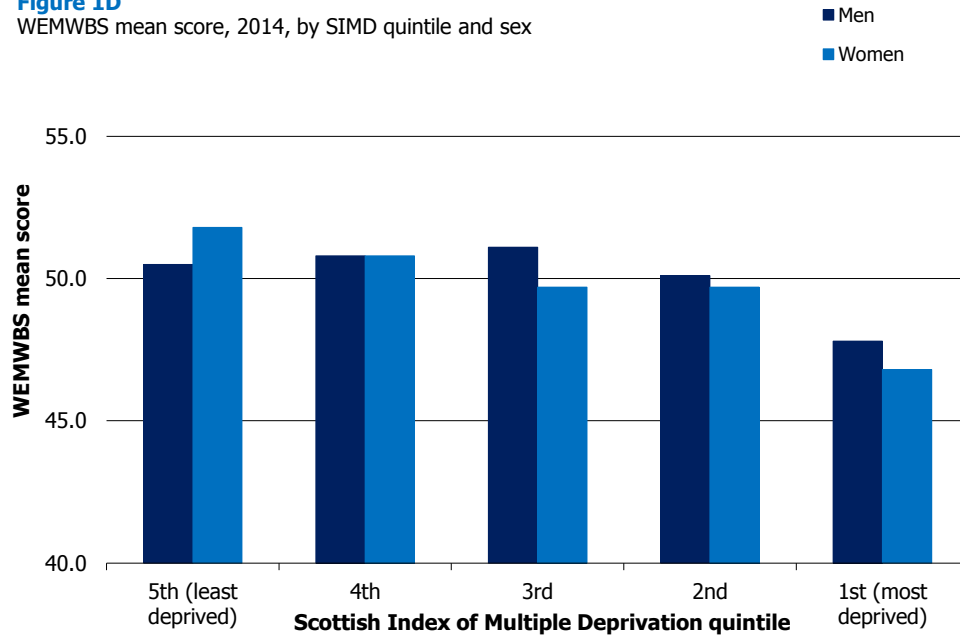


### 1.3.7 WEMWBS mean scores in 2014, by area deprivation and sex

Figure 1D and Table 1.7 show that in 2014, age-standardised WEMWBS mean scores for adults decreased as levels of area deprivation increased. The mean score among adults (aged 16 and over) living in the least deprived areas was 51.1; it then declined across each quintile to 47.3 for adults living in the most deprived areas. Women's mean scores generally followed the same pattern as for adults (51.8 in the least deprived areas, 46.8 in the most). For men, however, there was a slightly different pattern. Mean scores were highest (51.1) for those in the middle (third most deprived) quintile, and lower in other quintiles, particularly for men living in the most deprived areas (47.8).

Figure 1D, Table 1.7

**Figure 1D**  
WEMWBS mean score, 2014, by SIMD quintile and sex



### 1.3.8 GHQ-12 scores in 2014, by age and sex

In 2014, 16% of adults (aged 16 and over) exhibited signs of a possible psychiatric disorder (a GHQ-12 score of 4 or more), with 61% of adults reporting no symptoms (GHQ-12 score of 0).

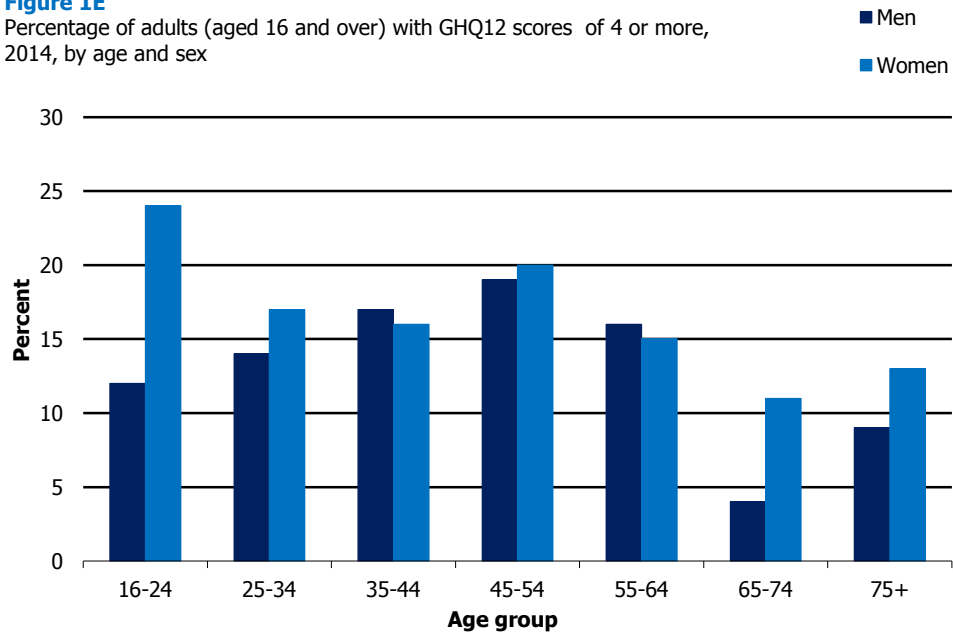
Women were more likely than men to have a GHQ-12 score of 4 or more in 2014 (17% women and 14% men), whilst men were more likely to have a score of 0 (65% men, 56% women).

The prevalence of GHQ-12 scores of 4 or more was fairly similar (15-19%) in the 16-64 age group, and was lower (8-12%) for those aged 65 and over. However, as Figure 1E shows, the patterns across the age groups differed for men and women. For men, prevalence of scores of 4 or more increased steadily with age to a peak of 19% in the 45-54 age group, before dropping markedly to 4% for those aged 65-74, and increasing again to 9% for the oldest men. Among women, high GHQ-12 scores were most prevalent in the 16-24 (24%) and 45-54 (20%) age groups, and varied across the other age groups without a clear pattern, but were least common for those aged 65 and over (11-13%).

**Figure 1E, Table 1.8**

**Figure 1E**

Percentage of adults (aged 16 and over) with GHQ12 scores of 4 or more, 2014, by age and sex



### 1.3.9 Life satisfaction mean scores in 2014, by age and sex

The average mean life satisfaction score for adults (aged 16 and over) in 2014 was 7.8. The proportion of adults with above average scores (of 9-10) was 34%. The prevalence of average mean scores (8), and below average scores (0-7) were similar (32% and 33% respectively). Scores did not vary significantly by sex.

Life satisfaction varied by age in 2014. In common with the patterns observed above for WEMWBS and GHQ-12, and as reported previously,<sup>23</sup> life satisfaction was lowest among those aged 45-54 (reflected in both the mean score of 7.5 and the proportion with scores below average of 39%). Life satisfaction scores were highest for those aged 65 and over (41-42% above average and mean scores of 8.0-8.1).

**Table 1.9**



## References and notes

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- <sup>2</sup> Improving the Health and Wellbeing of People with Long Term Conditions in Scotland: A National Action Plan. Edinburgh: Scottish Government, 2009. [www.gov.scot/Publications/2009/12/03112054/11](http://www.gov.scot/Publications/2009/12/03112054/11)
- <sup>3</sup> See: [www.gov.scot/Topics/Health/Services/Long-Term-Conditions](http://www.gov.scot/Topics/Health/Services/Long-Term-Conditions)
- <sup>4</sup> See: [www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-projections/population-projections-scotland/2012-based/list-of-tables](http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-projections/population-projections-scotland/2012-based/list-of-tables)
- <sup>5</sup> Mental Health Action Plan 2013-2020. World Health Organization, 2013. [apps.who.int/iris/bitstream/10665/89966/1/9789241506021\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/89966/1/9789241506021_eng.pdf?ua=1)
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- <sup>9</sup> The National Performance Framework is described here: [www.gov.scot/About/Performance/purposestratobjs](http://www.gov.scot/About/Performance/purposestratobjs)
- <sup>10</sup> See: [www.healthscotland.com/scotlands-health/population/mental-health-indicators.aspx](http://www.healthscotland.com/scotlands-health/population/mental-health-indicators.aspx)
- <sup>11</sup> Scotland's Mental Health: Adults 2012. Edinburgh: NHS Health Scotland, 2012. See: [www.healthscotland.com/documents/6123.aspx](http://www.healthscotland.com/documents/6123.aspx)
- <sup>12</sup> Scotland's Mental Health: children and young people 2013. NHS Health Scotland / ScotPHO, 2013. [www.scotpho.org.uk/publications/reports-and-papers/1159-Scotlands-mental-health-children-and-young-people-2013](http://www.scotpho.org.uk/publications/reports-and-papers/1159-Scotlands-mental-health-children-and-young-people-2013)
- <sup>13</sup> The suicide reduction HEAT target is described here: [www.gov.scot/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance/SuicideReduction](http://www.gov.scot/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance/SuicideReduction)
- <sup>14</sup> The CAMHS 18 week treatment HEAT target is described here: [www.gov.scot/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance/CAMHS18weeks](http://www.gov.scot/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance/CAMHS18weeks)
- <sup>15</sup> See: [www.gov.scot/Resource/0046/00468479.pdf](http://www.gov.scot/Resource/0046/00468479.pdf)
- <sup>16</sup> *Child and Adolescent Mental Health Services Waiting Times in Scotland Quarter ending 31 December 2014*. ISD Scotland. [isdscotland.scot.nhs.uk/Health-Topics/Waiting-Times/Publications/2015-02-24/2015-02-24-CAMHS-Report.pdf?74291628600](http://isdscotland.scot.nhs.uk/Health-Topics/Waiting-Times/Publications/2015-02-24/2015-02-24-CAMHS-Report.pdf?74291628600)
- <sup>17</sup> The access to psychological therapies HEAT target is described here: [www.gov.scot/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance/PsychologicalTherapies](http://www.gov.scot/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance/PsychologicalTherapies)  
This information is considered developmental, in that NHS Boards, ISD and the Scottish Government are working together to improve the completeness and consistency of the data.
- <sup>18</sup> Further information about WEMWBS is available here: [www.healthscotland.com/scotlands-health/population/Measuring-positive-mental-health.aspx](http://www.healthscotland.com/scotlands-health/population/Measuring-positive-mental-health.aspx)

- <sup>19</sup> Stewart-Brown S. and Janmohamed K. (2008). Warwick-Edinburgh Mental Well-being Scale (WEMWBS). User Guide Version 1. Warwick and Edinburgh: University of Warwick and NHS Health Scotland.
- <sup>20</sup> The translation was carried out solely to ensure that speakers of other languages were not excluded from the Scottish Health Survey. There were insufficient numbers of non-English speaking people in the sample to enable comparisons of their health with the rest of the population. As the primary intention was to prevent the exclusion of people due to language barriers, the translated WEMWBS questions were not subject to the full extent of validation that would need to take place if the questionnaire was being used to assess wellbeing in a whole population of non-English speakers. It is therefore possible that the translated WEMWBS scale (and other questions in the survey) is not directly comparable to the English version. However, the number of interviews that used translated materials was judged to be too small to affect the national estimates presented here so all cases have been included in the analysis.
- <sup>21</sup> Goldberg D. and Williams PA (1988). A User's Guide to the General Health Questionnaire. Windsor: NFER-Nelson.
- <sup>22</sup> Gray L and Leyland AH. General Health, Mental Wellbeing and Caring. In: Rutherford L, Hinchliffe S and Sharp C (eds). Scottish Health Survey 2013 – Volume 1 Main Report. Edinburgh: Scottish Government. 2014. [www.gov.scot/Publications/2014/12/9982/6](http://www.gov.scot/Publications/2014/12/9982/6)
- <sup>23</sup> Mabelis J. Chapter 1: General Health, Mental Wellbeing and Caring. In: Rutherford L, Hinchliffe S and Sharp C (eds). Scottish Health Survey 2012 – Volume 1 Main Report. Edinburgh: Scottish Government. 2013. [www.gov.scot/Publications/2013/09/3684/5](http://www.gov.scot/Publications/2013/09/3684/5)

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**Table 1.1 Self-assessed general health, adults and children, 2008 to 2014**

<i>Aged 16 and over</i>		<i>2008 to 2014</i>					
<b>Self-assessed general health</b>	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%
<b>Men</b>							
Very good	37	37	35	37	36	34	32
Good	39	40	41	41	39	41	42
Fair	16	16	17	16	17	17	18
Bad	6	6	5	5	6	6	6
Very Bad	2	1	2	2	2	2	2
<i>Very good / good</i>	<i>76</i>	<i>77</i>	<i>76</i>	<i>77</i>	<i>75</i>	<i>75</i>	<i>74</i>
<i>Bad / very bad</i>	<i>7</i>	<i>7</i>	<i>7</i>	<i>7</i>	<i>8</i>	<i>8</i>	<i>8</i>
<b>Women</b>							
Very good	35	36	35	36	32	34	33
Good	40	41	39	39	41	40	41
Fair	19	17	18	18	18	18	18
Bad	5	6	6	6	7	7	6
Very Bad	2	1	2	2	2	2	2
<i>Very good / good</i>	<i>75</i>	<i>77</i>	<i>74</i>	<i>74</i>	<i>73</i>	<i>74</i>	<i>74</i>
<i>Bad / very bad</i>	<i>7</i>	<i>7</i>	<i>8</i>	<i>8</i>	<i>9</i>	<i>9</i>	<i>8</i>
<b>All adults</b>							
Very good	36	36	35	36	34	34	32
Good	39	40	40	40	40	40	41
Fair	17	16	18	17	17	17	18
Bad	5	6	6	6	7	6	6
Very Bad	2	1	2	2	2	2	2
<i>Very good / good</i>	<i>75</i>	<i>77</i>	<i>75</i>	<i>76</i>	<i>74</i>	<i>74</i>	<i>74</i>
<i>Bad / very bad</i>	<i>7</i>	<i>7</i>	<i>7</i>	<i>7</i>	<i>9</i>	<i>8</i>	<i>8</i>
<b>Boys</b>							
Very good	68	69	65	69	65	68	65
Good	26	27	29	27	29	26	30
Fair	5	4	5	4	6	5	5
Bad	1	0	1	0	0	1	0
Very Bad	0	0	0	-	0	0	0
<i>Very good / good</i>	<i>94</i>	<i>96</i>	<i>94</i>	<i>96</i>	<i>94</i>	<i>94</i>	<i>95</i>
<i>Bad / very bad</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>

*Continued...*

**Table 1.1 - Continued**

*Aged 16 and over*

*2008 to 2014*

<b>Self-assessed general health</b>	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%
<b>Girls</b>							
Very good	65	68	65	70	70	64	65
Good	31	27	29	26	25	30	30
Fair	4	4	4	3	5	4	4
Bad	1	1	1	1	1	1	1
Very Bad	0	-	0	0	-	-	-
<i>Very good / good</i>	96	95	95	96	95	95	95
<i>Bad / very bad</i>	1	1	1	1	1	1	1
<b>All children</b>							
Very good	66	68	65	70	68	66	65
Good	29	27	29	27	27	28	30
Fair	4	4	5	3	5	5	5
Bad	1	0	1	1	0	1	0
Very Bad	0	0	0	0	0	0	0
<i>Very good / good</i>	95	95	94	96	94	95	95
<i>Bad / very bad</i>	1	1	1	1	0	1	1
<i>Bases (weighted):</i>							
<i>Men</i>	3087	3598	3464	3608	2309	2344	2237
<i>Women</i>	3376	3926	3775	3932	2504	2546	2421
<i>All adults</i>	6463	7524	7239	7541	4813	4890	4658
<i>Boys</i>	896	1333	916	1015	912	940	852
<i>Girls</i>	854	1273	876	970	873	899	815
<i>All children</i>	1750	2606	1792	1985	1786	1839	1667
<i>Bases (unweighted):</i>							
<i>Men</i>	2840	3285	3112	3279	2127	2138	2068
<i>Women</i>	3622	4241	4128	4262	2686	2753	2590
<i>All adults</i>	6462	7526	7240	7541	4813	4891	4658
<i>Boys</i>	872	1333	960	998	878	948	842
<i>Girls</i>	878	1272	832	987	908	891	825
<i>All children</i>	1750	2605	1792	1985	1786	1839	1667

**Table 1.2 Self-assessed general health, 2014, by age and sex**

*Aged 16 and over*

2014

Self-assessed general health	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Very good	39	41	37	32	26	23	12	32
Good	43	47	44	38	41	43	38	42
Fair	16	7	14	19	21	24	32	18
Bad	2	4	4	9	9	8	12	6
Very Bad	-	1	1	2	3	3	5	2
<i>Very good / good</i>	82	88	81	70	67	66	50	74
<i>Bad / very bad</i>	2	5	5	10	12	11	17	8
<b>Women</b>								
Very good	37	43	36	34	32	25	18	33
Good	51	37	44	38	39	39	38	41
Fair	10	16	13	17	20	25	31	18
Bad	2	3	5	9	7	8	9	6
Very Bad	0	0	2	2	3	3	4	2
<i>Very good / good</i>	88	80	80	72	70	63	56	74
<i>Bad / very bad</i>	2	3	7	11	10	11	13	8
<b>All Adults</b>								
Very good	38	42	37	33	29	24	15	32
Good	47	42	44	38	40	41	38	41
Fair	13	12	13	18	20	25	32	18
Bad	2	3	4	9	8	8	11	6
Very Bad	0	1	2	2	3	3	4	2
<i>Very good / good</i>	85	84	80	71	69	64	53	74
<i>Bad / very bad</i>	2	4	6	11	11	11	15	8
<i>Bases (weighted):</i>								
<i>Men</i>	320	358	357	417	348	264	173	2237
<i>Women</i>	314	375	379	441	365	294	253	2421
<i>All adults</i>	634	733	736	859	713	558	426	4658
<i>Bases (unweighted):</i>								
<i>Men</i>	202	251	306	362	359	361	227	2068
<i>Women</i>	232	337	421	431	437	419	313	2590
<i>All adults</i>	434	588	727	793	796	780	540	4658

**Table 1.3 Adult self-assessed general health (age-standardised), 2014, by area deprivation and sex**

*Aged 16 and over*

2014

Self-assessed general health	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>Men</b>					
Very good	39	38	33	27	19
Good	45	42	43	40	39
Fair	14	15	16	21	24
Bad	2	5	5	8	13
Very Bad	0	0	2	3	5
<i>Very good / good</i>	84	80	76	68	58
<i>Bad / very bad</i>	2	5	7	11	18
<b>Women</b>					
Very good	46	38	32	27	21
Good	39	42	44	41	36
Fair	13	15	17	22	25
Bad	2	4	6	7	12
Very Bad	0	1	1	3	6
<i>Very good / good</i>	85	80	76	68	56
<i>Bad / very bad</i>	2	5	7	10	18
<b>All adults</b>					
Very good	42	38	32	27	20
Good	42	42	44	41	37
Fair	13	15	17	22	25
Bad	2	4	5	8	13
Very Bad	0	1	2	3	5
<i>Very good / good</i>	84	80	76	68	57
<i>Bad / very bad</i>	2	5	7	11	18
<i>Bases (weighted):</i>					
<i>Men</i>	495	476	424	431	411
<i>Women</i>	490	534	464	494	439
<i>All adults</i>	985	1011	888	925	850
<i>Bases (unweighted):</i>					
<i>Men</i>	405	449	481	397	336
<i>Women</i>	481	572	557	537	443
<i>All adults</i>	886	1021	1038	934	779

**Table 1.4 Prevalence of long-term conditions in adults and children, 2014, by age and sex**

<i>All ages</i>									2014
Long-term conditions and limiting long-term conditions	Age								Total 16+
	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%	%
<b>Males</b>									
No long-term conditions	79	79	71	61	56	40	30	23	54
Limiting long-term conditions	12	12	18	22	29	41	46	62	30
Non-limiting long-term conditions	9	10	11	17	15	19	23	15	15
<i>Total with conditions</i>	21	21	29	39	44	60	70	77	46
<b>Females</b>									
No long-term conditions	82	71	71	64	58	43	31	23	54
Limiting long-term conditions	9	18	19	25	29	40	49	60	33
Non-limiting long-term conditions	9	11	11	11	13	17	20	16	14
<i>Total with conditions</i>	18	29	29	36	42	57	69	77	46
<b>All</b>									
No long-term conditions	81	75	71	63	57	42	31	23	54
Limiting long-term conditions	11	15	18	24	29	40	48	61	31
Non-limiting long-term conditions	9	10	11	14	14	18	22	16	15
<i>Total with conditions</i>	19	25	29	37	43	58	69	77	46
<i>Bases (weighted):</i>									
<i>Males</i>	852	320	358	357	417	348	264	173	2237
<i>Females</i>	813	314	374	379	441	365	293	253	2420
<i>All</i>	1665	634	732	736	859	713	557	426	4657
<i>Bases (unweighted):</i>									
<i>Males</i>	842	202	251	306	362	359	361	227	2068
<i>Females</i>	824	232	336	421	431	437	418	313	2588
<i>All</i>	1666	434	587	727	793	796	779	540	4656



**Table 1.5 WEMWBS mean scores, 2008 to 2014**

<i>Aged 16 and over</i>		<i>2008 to 2014</i>					
<b>WEMWBS scores<sup>a</sup></b>	2008	2009	2010	2011	2012	2013	2014
<b>Men</b>							
Mean	50.2	49.9	50.2	50.2	50.4	50.3	50.1
SE of the mean	0.20	0.16	0.19	0.19	0.24	0.25	0.25
Standard deviation	8.55	8.02	8.37	8.35	8.34	8.56	8.49
<b>Women</b>							
Mean	49.7	49.7	49.6	49.7	49.4	49.7	49.9
SE of the mean	0.16	0.16	0.17	0.17	0.22	0.21	0.22
Standard deviation	8.48	8.51	8.67	8.37	8.63	8.72	8.47
<b>All Adults</b>							
Mean	50.0	49.7	49.9	49.9	49.9	50.0	50.0
SE of the mean	0.14	0.12	0.14	0.14	0.18	0.17	0.18
Standard deviation	8.52	8.28	8.54	8.36	8.50	8.65	8.48
<i>Bases (weighted):</i>							
<i>Men</i>	2785	3282	3171	3191	2063	2110	2001
<i>Women</i>	3026	3586	3478	3540	2256	2351	2204
<i>All adults</i>	5812	6868	6649	6731	4319	4461	4205
<i>Bases (unweighted):</i>							
<i>Men</i>	2539	2994	2842	2900	1909	1938	1851
<i>Women</i>	3248	3886	3805	3845	2431	2561	2369
<i>All adults</i>	5787	6880	6647	6745	4340	4499	4220

a WEMWBS scores range from 14 to 70. Higher scores indicate greater wellbeing. Mean WEMWBS score is part of the national mental health indicator set for adults

**Table 1.6 WEMWBS mean scores, 2014, by age and sex**

<i>Aged 16 and over</i>								<i>2014</i>
WEMWBS scores <sup>a</sup>	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Men</b>								
Mean	50.4	50.7	50.0	49.1	50.1	51.2	49.7	50.1
SE of the mean	0.73	0.60	0.62	0.57	0.66	0.44	0.60	0.25
Standard deviation	8.23	8.29	8.38	8.93	9.65	7.40	7.09	8.49
<b>Women</b>								
Mean	48.7	50.4	50.0	49.3	50.5	50.4	50.1	49.9
SE of the mean	0.76	0.51	0.46	0.49	0.52	0.55	0.55	0.22
Standard deviation	8.50	8.00	8.02	8.94	8.98	8.75	7.69	8.47
<b>All Adults</b>								
Mean	49.5	50.5	50.0	49.2	50.3	50.8	49.9	50.0
SE of the mean	0.53	0.40	0.39	0.39	0.44	0.37	0.41	0.18
Standard deviation	8.41	8.13	8.19	8.93	9.30	8.14	7.45	8.48
<i>Bases (weighted):</i>								
<i>Men</i>	275	322	331	390	316	230	138	2001
<i>Women</i>	293	342	360	405	338	256	211	2204
<i>All adults</i>	568	664	691	795	653	486	348	4205
<i>Bases (unweighted):</i>								
<i>Men</i>	180	225	279	337	327	321	182	1851
<i>Women</i>	217	312	402	400	409	371	258	2369
<i>All adults</i>	397	537	681	737	736	692	440	4220

a WEMWBS scores range from 14 to 70. Higher scores indicate greater wellbeing. Mean WEMWBS score is part of the national mental health indicator set for adults

**Table 1.7 WEMWBS mean scores (age-standardised), 2014, by area deprivation and sex**

*Aged 16 and over*

2014

WEMWBS scores <sup>a</sup>	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
<b>Men</b>					
Mean	50.5	50.8	51.1	50.1	47.8
SE of the mean	0.45	0.47	0.51	0.53	0.61
Standard deviation	7.56	8.38	7.89	8.33	10.09
<b>Women</b>					
Mean	51.8	50.8	49.7	49.7	46.8
SE of the mean	0.37	0.39	0.49	0.49	0.61
Standard deviation	7.35	7.89	8.39	8.29	9.96
<b>All Adults</b>					
Mean	51.1	50.8	50.4	49.9	47.3
SE of the mean	0.34	0.34	0.40	0.37	0.43
Standard deviation	7.48	8.12	8.18	8.31	10.03
<i>Bases (weighted):</i>					
<i>Men</i>	460	430	372	390	352
<i>Women</i>	461	491	419	451	384
<i>All adults</i>	922	920	791	841	736
<i>Bases (unweighted):</i>					
<i>Men</i>	373	408	425	352	293
<i>Women</i>	451	528	508	489	393
<i>All adults</i>	824	936	933	841	686

a WEMWBS scores range from 14 to 70. Higher scores indicate greater wellbeing. Mean WEMWBS score is part of the national mental health indicator set for adults

**Table 1.8 GHQ12 scores, 2014, by age and sex**

*Aged 16 and over*

2014

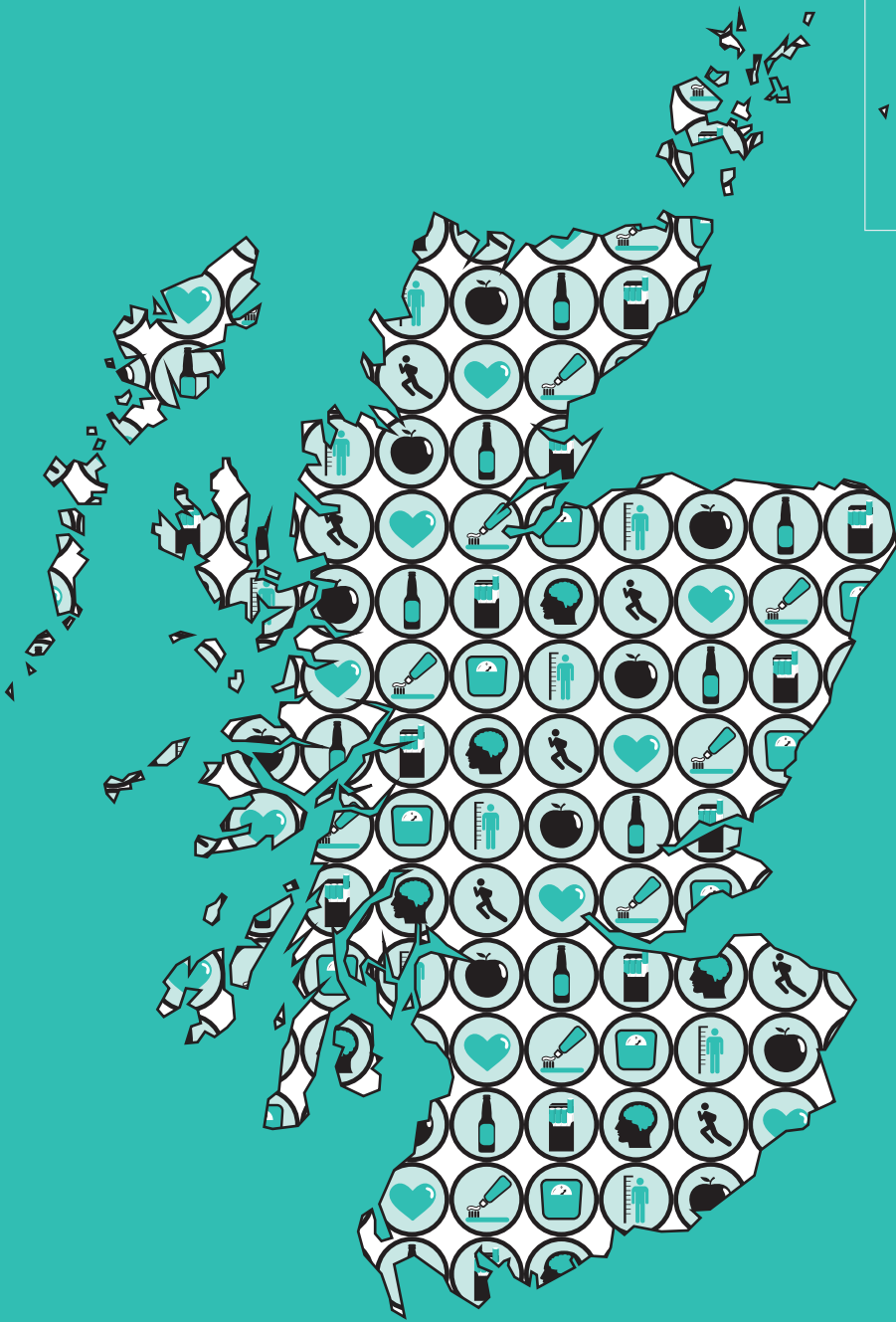
GHQ12 score <sup>a</sup>	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
0	61	62	61	64	69	79	65	65
1-3	27	23	22	17	15	17	26	20
4 or more	12	14	17	19	16	4	9	14
<b>Women</b>								
0	40	52	59	58	62	64	56	56
1-3	36	31	24	22	23	24	31	27
4 or more	24	17	16	20	15	11	13	17
<b>All adults</b>								
0	50	57	60	61	66	71	59	61
1-3	32	27	23	20	19	21	29	24
4 or more	18	15	17	19	16	8	12	16
<i>Bases (weighted):</i>								
<i>Men</i>	278	324	334	390	315	232	142	2015
<i>Women</i>	291	339	359	408	334	264	216	2211
<i>All adults</i>	569	663	693	798	649	496	358	4226
<i>Bases (unweighted):</i>								
<i>Men</i>	182	227	282	335	327	325	186	1864
<i>Women</i>	214	310	400	404	406	380	268	2382
<i>All adults</i>	396	537	682	739	733	705	454	4246

a GHQ12 scores range from 0 to 12. Scores of 4 or more indicate low wellbeing / possible psychiatric disorder

**Table 1.9 Life satisfaction mean scores, 2014, by age and sex**

<i>Aged 16 and over</i>								<i>2014</i>
Life satisfaction <sup>a</sup>	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Above average (9-10)	39	28	26	28	36	42	41	33
Average (8)	32	38	40	33	30	32	25	34
Below average (0-7)	29	33	34	39	34	26	33	33
Mean score	8.0	7.8	7.6	7.5	7.7	8.1	8.1	7.8
SE of mean	0.12	0.11	0.12	0.11	0.14	0.10	0.12	0.05
<b>Women</b>								
Above average (9-10)	34	31	30	31	42	42	41	35
Average (8)	33	36	33	31	26	30	28	31
Below average (0-7)	33	33	37	38	32	28	31	34
Mean score	7.9	7.8	7.6	7.5	7.8	8.1	7.9	7.8
SE of mean	0.14	0.09	0.10	0.11	0.11	0.10	0.12	0.04
<b>All adults</b>								
Above average (9-10)	37	30	28	30	39	42	41	34
Average (8)	32	37	36	32	28	31	27	32
Below average (0-7)	31	33	36	39	33	27	32	33
Mean score	7.9	7.8	7.6	7.5	7.7	8.1	8.0	7.8
SE of mean	0.10	0.08	0.08	0.08	0.09	0.08	0.10	0.04
<i>Bases (weighted):</i>								
<i>Men</i>	320	356	355	416	347	263	171	2228
<i>Women</i>	314	374	379	439	364	293	252	2416
<i>All adults</i>	634	730	734	855	711	557	423	4644
<i>Bases (unweighted):</i>								
<i>Men</i>	202	249	305	361	357	360	224	2058
<i>Women</i>	232	336	421	429	436	418	311	2583
<i>All adults</i>	434	585	726	790	793	778	535	4641

a Life satisfaction was assessed using a 0-10 scale where 0 was 'extremely dissatisfied' and 10 'extremely satisfied'



# Chapter 2

## Alcohol

## 2 ALCOHOL

*Linsay Gray and Alastair H Leyland*

### **SUMMARY**

#### **Daily alcohol consumption**

- In 2014, men drank an average of 5.5 units on their heaviest drinking day in the previous week and women drank 3.1 units.
- Average unit consumption on the heaviest drinking day in the past week declined between 2003 and 2014 (from 6.5 to 5.5 units for men, and from 3.6 to 3.1 units for women, respectively). However, consumption has not changed significantly in recent years.

#### **Weekly alcohol consumption**

- In 2014, adults consumed an average of 10.3 units of alcohol per week (13.6 for men, 7.4 units for women).
- In total, 18% of women and 14% of men in 2014 said they did not drink alcohol.
- Average weekly alcohol consumption has declined from 19.8 units a week for men and 9.0 units for women in 2003, to 13.6 and 7.4, respectively, in 2014. The 2014 figures were not significantly different to those in 2013.
- In 2014, male drinkers consumed alcohol on 2.7 days in the previous week compared with 2.4 days for female drinkers. Both these figures were lower than in 2003 (3.3 days for men, 2.7 days for women), but have been stable recently.

#### **Adherence to government guidelines on alcohol consumption**

- In 2014, 41% of men drank more than the recommended 3-4 units on their heaviest drinking day in the past week, a reduction from 45% in 2003. A third (33%) of women drank more than their recommended 2-3 daily units, down from 37% in 2003. The 2013 and 2014 figures were not significantly different.
- In total, 23% of men and 17% of women in 2014 were classified as hazardous / harmful drinkers (consuming more than 21 units per week for men, or more than 14 units per week for women), compared with 33% and 23%, respectively, in 2003. These figures have not changed significantly in recent years.
- In 2014, 31% of men and 22% of women in the highest income households drank at hazardous / harmful levels compared with 18% of men and 13% of women in the lowest income households. While consumption has declined over time for all groups, this income gap has remained significant.
- The prevalence of drinking outwith the government guidelines for weekly and / or daily drinking declined significantly from 2003 to 2014 both for men (from 53% to 46%) and women (from 42% to 36%).
- The increase over time in the proportion of adults who have quit drinking reported last year was maintained in 2014 (5% were ex-drinkers in 2003 compared with 9% in 2014). Lifetime abstinence prevalence has been 7-10% among women since 2003 with no clear trend; the latest figure for men (7%) was significantly higher than it was in the 2003-2009 period (4%).

## 2.1 INTRODUCTION

In many communities within Scotland, drinking alcohol is an acceptable feature of social gatherings. However, the misuse of alcohol carries a risk of physical and mental health problems, as well as potential negative social consequences. People who consume large quantities of alcohol have increased risks of high blood pressure, chronic liver disease and cirrhosis, pancreatitis, some cancers, mental ill-health and accidents. The World Health Organization (WHO) cites alcohol as the second largest risk factor for ill-health in wealthy countries, behind tobacco use, and ahead of obesity and high blood pressure.<sup>1</sup> It also identifies higher levels of alcohol dependence and alcohol use disorders in the UK than across Europe as a whole.<sup>2</sup>

A report published in 2009 attributed 5% of deaths in Scotland to alcohol.<sup>3</sup> Alcohol-related mortality has decreased in recent years, with around 1,100 alcohol-related deaths in 2014,<sup>4</sup> but remains higher than it was in the 1980s.<sup>5</sup> More than 94,500 GP consultations and around 36,000 hospital stays each year are for alcohol-related problems, although these figures have declined in recent years.<sup>6,7</sup> Alcohol-related morbidity and mortality are not evenly distributed throughout the population and the burden is greatest among those living in the most deprived areas.<sup>8,9,10</sup>

The harms associated with alcohol misuse are not restricted to those consuming alcohol, with potential impacts on others of injury, neglect, abuse, crime, and from concern for or fear of family members. A report published by Alcohol Focus Scotland in 2014 estimated that 1 in 2 people in Scotland are harmed as a result of someone else's drinking.<sup>11</sup> The relationship between alcohol and crime is also well documented. In the 2014 Scottish Prisoner Survey, 45% of prisoners reported being drunk at the time of their offence.<sup>12</sup> It is also thought that alcohol is involved in 70% of assaults requiring treatment at A&E.<sup>13</sup>

Misuse of alcohol also has a negative impact on children with an estimated 36,000 to 51,000 children living with a parent (or guardian) whose alcohol use is potentially problematic.<sup>14,15</sup> There are also economic impacts, with an estimated 1.5 million working days lost to reduced efficiency in the workplace due to the effects of alcohol, and a similar number lost due to alcohol-related absence.<sup>16</sup> In 2007, the total annual cost of excessive alcohol consumption was estimated to stand around £3.6 billion.<sup>16</sup> Findings from the 2014 Scottish Social Attitudes survey showed that public awareness of the harmfulness of alcohol has increased, with 60% citing it as the drug causing most problems in Scotland.<sup>17</sup>

### 2.1.1 Policy background

One of the **National Outcomes** underpinning the Scottish Government's core purpose is for people living in Scotland to 'live longer, healthier lives'.<sup>18</sup> Tackling alcohol misuse is integral to ensuring that people in Scotland live longer and to reducing the significant inequalities that exist in society. The government's commitment to addressing alcohol misuse is evidenced by the inclusion of a **National Performance Framework National Indicator** to 'reduce alcohol related hospital admissions'.<sup>18</sup> Other related indicators include the



reduction of premature mortality, reducing reconviction rates and crime victimisation, and reducing deaths on roads.<sup>18</sup>

The Scottish Government published its alcohol strategy **Changing Scotland's Relationship with Alcohol: a framework for action** in 2009.<sup>19</sup> The strategy, which was accompanied by significant new investment in prevention and treatment services, builds on the **Licensing (Scotland) Act 2005**, which was implemented in September 2009. More recent legislation includes the **Alcohol etc. (Scotland) Act**, which was implemented in October 2011 and, among other measures, included the banning of quantity discounts in off-sales, the introduction of restrictions on alcohol displays and promotions, and the introduction of the mandatory Challenge 25 age verification policy.

The **Alcohol (Minimum Pricing) (Scotland) Act 2012** allows for a price to be set for a unit of alcohol, below which it cannot be sold. Its implementation date is currently uncertain due to an ongoing legal challenge led by the Scotch Whisky Association, in conjunction with some other European alcohol producers.<sup>20</sup> The European Court of Justice is expected to make a preliminary ruling on the challenge in late 2015. Informed by modelling carried out by the University of Sheffield,<sup>21</sup> Scottish Ministers have indicated their preference for a minimum unit price of 50p for at least the first two years. It is estimated that ten years after implementation of the policy, when it is considered to have reached full effectiveness, there would be at least 300 fewer alcohol-related deaths and 6,500 fewer hospital admissions each year.<sup>22</sup>

Evaluation of Scotland's alcohol strategy lies with NHS Health Scotland, through the Monitoring and Evaluating Scotland's Alcohol Strategy (MESAS) work programme. The fourth annual MESAS report, published in December 2014, concluded that 'alcohol-related mortality and morbidity, and inequalities in these harms, are continuing to decline in Scotland, and on some measures are improving more quickly than in England & Wales'.<sup>5</sup> However, levels remain higher than in England & Wales, and higher than they were in the 1980s.<sup>5</sup>

### 2.1.2 Measuring alcohol consumption in surveys

The alcohol consumption estimates discussed in this chapter are based on self-reported data collected during the survey interview. It is, however, important to note that surveys often obtain lower consumption estimates than those implied by alcohol sales data. The disjuncture can largely be explained by participants' under-reporting of consumption, due in part to not accounting for atypical / special occasion drinking,<sup>23</sup> but there is also some evidence that survey non-responders are more likely than responders to engage in risky health behaviours, including hazardous alcohol use.<sup>24,25,26,27</sup> The most recently available annual estimates of alcohol sales in Scotland show that 10.5 litres (20.3 units per adult per week) of pure alcohol per person aged 16 and over were sold in 2014 (the equivalent figure for England and Wales was 9.0 litres (17.3 units per adult per week)).<sup>28</sup>

While self-reported survey estimates of consumption are typically lower than estimates based on sales data, surveys provide valuable information about the social patterning of individuals' alcohol consumption. Findings from the Scottish Health Survey will be used in the evaluation of the implementation of minimum pricing to help assess the impact on consumption patterns across different groups in society.

### **2.1.3 Reporting on alcohol consumption in the Scottish Health Survey (SHeS)**

The key trends for weekly and daily alcohol consumption are updated and presented in this chapter. Supplementary tables on alcohol consumption are available on the survey website.<sup>29</sup> These include levels of alcohol dependency and high risk alcohol use, as measured by the Alcohol Use Disorders Identification Test (AUDIT).

### **2.1.4 Comparability with other UK statistics**

The Health Surveys for England, Wales and Northern Ireland all provide estimates for alcohol consumption. A report published by the Government Statistical Service advises that estimates from these surveys and / or those from SHeS are “not comparable”.<sup>30</sup> Mean weekly alcohol consumption statistics are not available for Wales, and estimates of consumption on the heaviest drinking day are not available for Northern Ireland. While questions are similar in each of the surveys, questions on alcohol consumption are delivered through self-completion in the Welsh Health Survey, complicating comparisons. Categorisation of drinkers and non-drinkers is inconsistent across the surveys. Differences also exist in the way some alcoholic drinks are categorised.

## **2.2 METHODS AND DEFINITIONS**

### **2.2.1 Methods**

Questions about drinking alcohol have been included in SHeS since its inception in 1995. Questions are asked either face-to-face via the interviewer or included in the self-completion questionnaire if they are deemed too sensitive for a face-to-face interview. All 16-17 year olds are asked about their consumption via the self-completion, as are some 18-19 year olds, at interviewers' discretion. The way in which alcohol consumption is estimated in the survey was changed significantly in 2008. A detailed discussion of those revisions can be found in the chapter on alcohol consumption in the 2008 report.<sup>31</sup>

In 2014, the SHeS questionnaire covered the following aspects of alcohol consumption:

- usual weekly consumption,
- daily consumption on the heaviest drinking day in the previous week, and

- indicators of potential problem drinking (including physical dependence).

### **Weekly consumption**

Participants (aged 16 and over) were asked preliminary questions to determine whether they drank alcohol at all. For those who reported that they drank, these were followed by further questions on how often during the past 12 months they had drunk each of six different types of alcoholic drink:

- normal beer, lager, cider and shandy
- strong beer, lager and cider
- sherry and martini
- spirits and liqueurs
- wine
- alcoholic soft drinks (alcopops).

From these questions, the average number of days a week the participant had drunk each type of drink was estimated. A follow-up question asked how much of each drink type they had usually drunk on each occasion. These data were converted into units of alcohol and multiplied by the amount they said they usually drank on any one day.<sup>32</sup>

### **Daily consumption**

Participants were asked about drinking in the week preceding the interview, with actual consumption on the heaviest drinking day in that week then examined in more detail.<sup>33</sup> Details on the amounts consumed for each of the six types of drink listed in the weekly consumption section above were collected, rather than direct estimates of units consumed.

### **Problem drinking**

Indicators of potential problem drinking, beyond levels of consumption, are not reported here. Details of how these are measured in the survey are provided in the 2013 report.<sup>34</sup>

## **2.2.2 Calculating alcohol consumption in SHeS**

The guidelines on sensible drinking are expressed in terms of units of alcohol consumed. As discussed above, detailed information on both the volume of alcohol drunk in a typical week and on the heaviest drinking day in the week preceding the survey was collected from participants. The volumes reported were not validated. In the UK, a standard unit of alcohol is 10 millilitres or around 8 grams of ethanol. In this chapter, alcohol consumption is reported in terms of units of alcohol.

Questions on the quantity of wine drunk were revised in 2008. Since then, participants reporting drinking any wine have been asked what size of glass they drank from: large (250ml), medium (175ml) and small

(125ml). In addition, to help participants make more accurate judgements they are also shown a showcard depicting glasses with 125ml, 175ml and 250ml of liquid. Participants also had the option of specifying the quantity of wine drunk in bottles or fractions of a bottle; with a bottle treated as the equivalent of six small (125ml) glasses.

There are numerous challenges associated with calculating units at a population level, not least of which are the variability of alcohol strengths and the fact that these have changed over time. Table 2A below outlines how the volumes of alcohol reported on in the survey were converted into units (the 2008 report provides full information about how this process has changed over time).<sup>31</sup> Those who drank bottled or canned beer, lager, stout or cider were asked in detail about what they drank, and this information was used to estimate the amount in pints.

**Table 2A Alcohol unit conversion factors**

Type of drink	Volume reported	Unit conversion factor
Normal strength beer, lager, stout, cider, shandy (less than 6% ABV)	Half pint	1.0
	Can or bottle	Amount in pints multiplied by 2.5
	Small can (size unknown)	1.5
	Large can / bottle (size unknown)	2.0
Strong beer, lager, stout, cider, shandy (6% ABV or more)	Half pint	2.0
	Can or bottle	Amount in pints multiplied by 4
	Small can (size unknown)	2.0
	Large can / bottle (size unknown)	3.0
Wine	250ml glass	3.0
	175ml glass	2.0
	125ml glass	1.5
	750ml bottle	1.5 x 6
Sherry, vermouth and other fortified wines	Glass	1.0
Spirits	Glass (single measure)	1.0
Alcopops	Small can or bottle	1.5
	Large (700ml) bottle	3.5

### 2.2.3 Definitions

The recommended sensible drinking guidelines in the UK state that women should not regularly drink more than 2 to 3 units of alcohol per day and men should not regularly exceed 3 to 4 units per day. In addition, the Scottish Government recommends that everyone should have at least two alcohol-free days per week.

It is also recommended that, over the course of a week, women and men should not exceed 14 units and 21 units, respectively. Those who drink within these levels are described as ‘moderate’ drinkers. Women who consume over 14 and up to 35 units per week and men who consume over 21 and up to 50 units are classed as ‘hazardous’ drinkers, while those who consume more than 35 / 50 (women / men) units a week are considered to be drinking at ‘harmful’ levels.<sup>35</sup>

There is no standard definition of ‘binge’ drinking in the UK. To aid comparisons between other major surveys of alcohol consumption in Britain, SHeS uses the definition used by the Health Survey for England and the General Lifestyle Survey. Both these surveys define binge drinking as consuming more than 6 units on one occasion for women and more than 8 units for men.

An additional measure of people’s adherence to the daily and weekly drinking advice set out above is also reported in this chapter. The two key groups of interest are:

	<b>Adheres to guidelines</b>	<b>Does not adhere to guidelines</b>
Men drinking	no more than 21 units per week AND no more than 4 units on heaviest drinking day	more than 21 units per week AND / OR more than 4 units on heaviest drinking day
Women drinking	no more than 14 units per week AND no more than 3 units on heaviest drinking day	more than 21 units per week AND / OR more than 4 units on heaviest drinking day

## 2.3 TRENDS IN ALCOHOL CONSUMPTION SINCE 2003

### 2.3.1 Trends in usual weekly alcohol consumption since 2003

Trends in self-reported weekly alcohol consumption are presented by sex for adults aged 16 and over in Table 2.1.

The estimated weekly mean number of units of alcohol consumed in 2014 for all adults was 10.3 units, similar to the 10.1 units seen in 2013. This followed the previously reported<sup>34</sup> long-term decline from 14.1 units in 2003. This long-term decline was seen for both sexes, though the decrease among men from 19.8 units per week in 2003 to 13.6 in 2014 occurred via a series of gradual steps across the years, whereas for women most of the decline (from 9.0 units per week for women in 2003 to 7.4 units in 2014) took place between 2003 and 2011, with more recent figures somewhat flatter (with an outlier of 6.8 in 2013).

As outlined in Section 2.2.3, moderate weekly alcohol consumption is defined as no more than 14 units for women, and no more than 21 units for men. Individuals exceeding the moderate consumption guidelines are classified as hazardous or harmful drinkers. Drinking at hazardous

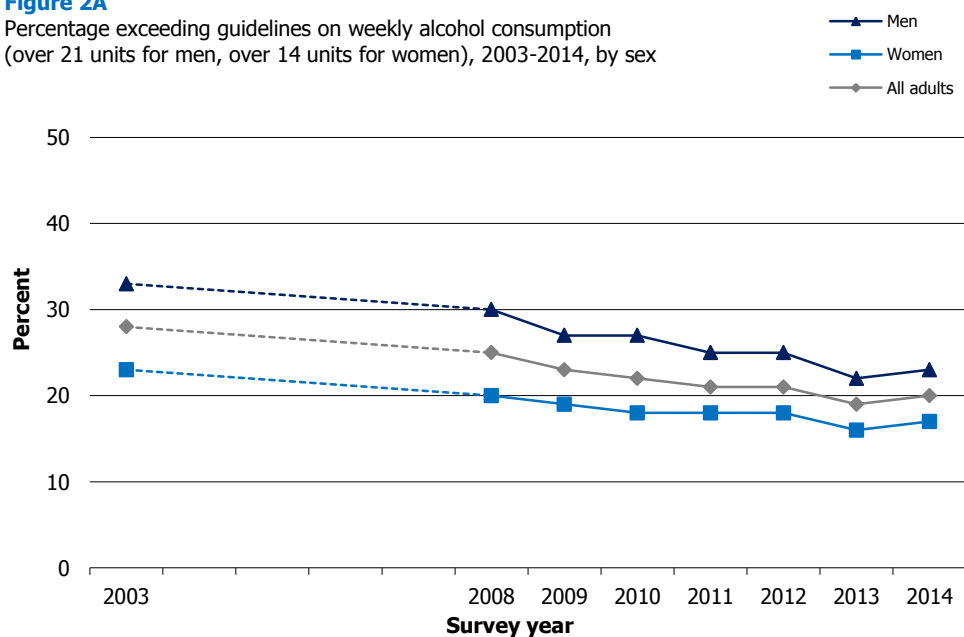
or harmful levels has declined overall (from 28% in 2003 to 20% in 2014) but has remained relatively static from 2009 onwards at 19-23%. As in every year of the survey, hazardous or harmful drinking was higher among men (23%) than women (17%) in 2014, with both groups showing a significant decline (from 33% for men and 23% for women in 2003) but no significant recent changes.

Non-drinking prevalence followed a broadly similar rising pattern for both men and women over time. In 2003, 8% of men said they did not drink alcohol, rising to 10-12% between 2008 and 2013, and 14% in 2014. In total, 13% of women reported being non-drinkers in both 2003 and 2008, rising to 16-17% in the 2009-2012 period, though the increase to 20% in 2013 has now been followed by 18% in 2014.

**Figure 2A, Table 2.1**

**Figure 2A**

Percentage exceeding guidelines on weekly alcohol consumption (over 21 units for men, over 14 units for women), 2003-2014, by sex



### 2.3.2 Trends in alcohol consumption on the heaviest drinking day in last week since 2003

Trends in the amount of alcohol reportedly consumed on the heaviest drinking day in the week prior to interview are presented in Table 2.2. Estimates for the proportions of the population exceeding recommended daily limits, and for binge drinking (twice the daily limits), during the last week are included separately for men, women and all adults.

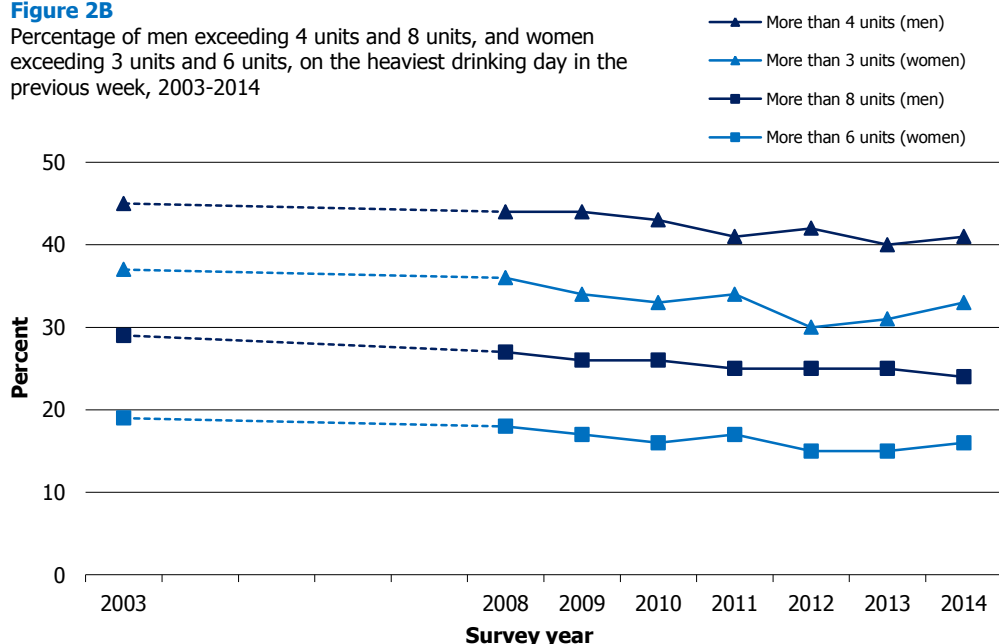
Table 2.2 and Figure 2B show that the 2014 figures for the various heaviest drinking day measures were all generally consistent with the previously reported<sup>34</sup> overall downward trend in the proportions exceeding the daily units recommended, binge drinking and total mean units consumed. The mean units of alcohol consumed by men on the heaviest drinking day in the previous week fell from 6.5 units in 2003 to 5.5 in 2011 and was identical (5.5 units) in 2014. Women's mean unit consumption decreased from 3.6 units in 2003 to 3.1 in 2014 (but has fluctuated between 2.8 and 3.2 units since 2009). Although these

figures represent an overall decline, even the most recent figures still exceed the recommended daily limits of 3-4 units for men and 2-3 units for women.

The percentage of men drinking more than their recommended limit of 3-4 units in a day decreased steadily from 45% in 2003 to 41% in 2014 although, as Figure 2B illustrates, little real change was seen from 2011 onwards (40-42% each year). Likewise, the proportion of men consuming more than eight units per day (considered as binge drinking) also fell overall: from 29% in 2003 to 25% in 2011 and then staying relatively steady to 2014 (24%). The percentage of women exceeding their recommended limit of 2-3 units in any one day decreased overall from 37% in 2003 to 33% in 2014, with a period low of 30% in 2012. Binge drinking prevalence among women (more than six units a day) also declined from 19% in 2003 to 17% in 2009 and has subsequently fluctuated between 15% and 17% (16% in 2014). **Figure 2B, Table 2.2**

**Figure 2B**

Percentage of men exceeding 4 units and 8 units, and women exceeding 3 units and 6 units, on the heaviest drinking day in the previous week, 2003-2014



### 2.3.3 Trends in adherence to weekly and daily drinking guidelines since 2003

Table 2.3 presents trends in adherence to both the weekly and daily drinking advice. As noted last year, and distinct from the results in Tables 2.1 and 2.2, the proportion of adults who adhere to the guidelines on weekly and / or daily drinking has been fairly static over time (39% of men and 45% of women in 2003, compared with 40% of men and 46% of women, in 2014). In contrast, while the recent figures for the proportions drinking outwith government guidelines have also been quite static, there has been a significant decline overall (from 53% in 2003 to 46% in 2014 for men; and from 42% in 2003 to 36% in 2014 for women).

As previously reported, the decline in drinking outwith the guidelines was largely accounted for by the increased proportion of ex-drinkers in

the population (from 4% to 8% in men and from 5% to 10% in women, between 2003 and 2014). While the prevalence of lifelong abstinence from alcohol has typically been stable in this period, the latest figure for men (7%) was significantly higher than the 4% seen in the 2003-2009 period. The figures for women have fluctuated at 7-10% in the same period, but with no clear pattern (the lowest levels were seen in 2008 and 2014).

**Table 2.3**

#### **2.3.4 Trends in frequency of alcohol consumption since 2003**

Table 2.4 shows that the mean number of days in the past week that adult drinkers consumed alcohol, and the proportion drinking on more than five days, have both declined overall. The figures in 2014 were either identical, or very similar, to those in 2013, with most of the significant change occurring earlier in the series. The mean number of days for male drinkers decreased significantly from 3.3 in 2003 to 2.7 in 2014. There was a smaller decrease for female drinkers: from 2.7 mean days in 2003 to 2.4 days by 2014. Prevalence of drinking on more than five days a week also decreased significantly, from 20% in 2003 to 11% in 2014 among male drinkers, and from 13% in 2003 to 8% by 2014 among female drinkers.

**Table 2.4**

### **2.4 TRENDS IN WEEKLY ALCOHOL CONSUMPTION BY INCOME SINCE 2003**

Table 2.5 presents trends in weekly alcohol consumption by household income. To ensure that the comparisons presented by income are not confounded by the different age profiles of the sub-groups, the data have been age-standardised. The income data have been equivalised to take account of the number of persons in the household. See the Glossary at the end of this Volume for a detailed description of both age-standardisation and equivalised household income.

The age-standardised prevalence of hazardous / harmful weekly drinking by men was significantly higher for those in the highest household income quintile than those in the lowest quintile for each year from 2003 to 2014. In 2003, 42% of men in the highest income quintile were hazardous / harmful drinkers compared with 25% in the lowest income quintile, with the 17 percentage point gap between them being the highest seen across the years. However, although hazardous / harmful drinking declined significantly from year to year among men overall, significant differences by income remained. By 2014, 31% of men in the highest income households drank at hazardous / harmful levels in 2014 compared with 18% in the lowest.

The picture for women was similarly pronounced. In every year, there was a markedly higher age-standardised prevalence of hazardous / harmful weekly drinking among women in the highest income quintile compared with the lowest income quintile. The biggest difference between these two groups, in 2003, was as much as 21 percentage points. (37% in the highest income group were hazardous / harmful drinkers, as were 16% in the lowest). By 2014 the gap had reduced to nine percentage points largely due to a decline in hazardous / harmful drinking among women in the highest income quintile (to 22%), whereas the figure for those in the lowest quintile (13%) was only slightly lower



than in 2003. However, while drinking levels did decline significantly over time, the differences by income across all the quintiles did not vary significantly over time.

The patterns for weekly unit consumption generally followed those described above. Adults in the highest income quintile drank the most units per week, and drank more units than those in the lowest income quintiles (ranging between 1.7 and 5.2 units more across the years), although those in the lowest quintile did not generally have the lowest consumption levels across all groups. These overall patterns were true for women in every year, while there was some variation among men, for example mean unit consumption did not differ notably by income quintile in 2008 or 2010. For both sexes, but especially for men, the units of alcohol consumed declined significantly over time, and while this was universally true regardless of income, significant differences by income remain in 2014.

**Table 2.5**

## **2.5 ALCOHOL CONSUMPTION BY AGE AND SEX IN 2014**

### **2.5.1 Weekly alcohol consumption in 2014**

Table 2.6 shows self-reported usual weekly alcohol consumption by age and sex in 2014. As previously reported,<sup>34</sup> men consumed more alcohol than women, and consumption differed significantly with age, with different patterns evident for men and women.

In 2014, men consumed 13.6 mean units of alcohol per week compared with 7.4 units for women. Men's weekly mean unit consumption was higher than women's in all age groups, albeit with less of a difference among those aged 16-24 (12.2 for men, 10.3 for women) than for older age groups. Among men, average consumption was highest in the 45-74 age group (15.0-17.2 units) with lower levels found for those aged 16-44 (10.1-13.3 units) and 75 and over (9.3 units). The pattern for women was significantly different: consumption was highest for those aged 16-24 (10.3 units) and 45-54 (9.9 units), and then declined steadily with age to 3.4 units for those aged 75 and over.

As with weekly unit consumption, men were more likely than women (23% and 17%, respectively) to be hazardous or harmful drinkers (drinking over the recommended weekly limits) in 2014. Levels of hazardous or harmful drinking were broadly similar in men and women aged 16-54, but prevalence was between 10 and 18 percentage points higher for men than women for those aged 55 and over. In contrast, the prevalence of moderate drinking (i.e. within the recommended weekly limits) was similar for men (63%) and women (65%); and this was generally true in each age group.

Women were significantly more likely than men to describe themselves as non-drinkers (18% compared with 14%) in 2014. The proportion of adult non-drinkers also varied significantly by age, with distinct patterns for men and women. Among men, non-drinking prevalence was highest among those aged 75 and over (23%) and notably lower in the 16-74

age group (11-16%). The increase in non-drinking prevalence occurred at a younger age among women: 10-16% of those aged 16-64 did not drink, rising to 23% of those aged 65-74 and 37% of those aged 75 and over. As these figures suggest, the overall difference between men and women was particularly pronounced in the 65 and over age group.

**Table 2.6**

### **2.5.2 Alcohol consumption on the heaviest drinking day in 2014**

Data on reported alcohol consumption on the heaviest drinking day in the previous week in 2014 are presented by age and sex in Table 2.7. Figures are shown for mean unit consumption, as well as exceeding the daily recommended limits of 3-4 units for men or 2-3 units for women, and binge drinking (more than 8 units for men, more than 6 for women).

Consistent with the patterns for weekly drinking (above), and previous reports,<sup>34</sup> in 2014, men drank significantly more units of alcohol on their heaviest drinking day than women (5.5 and 3.1 units, respectively). This was true for all age groups.

Men were also more likely than women in 2014 to drink more than their recommended daily limits (41% of men compared with 33% of women), and to binge drink – 24% of men did this, as did 16% of women.

Age-related differences in consuming more than the recommended daily limits, and in binge drinking, followed similar patterns (albeit with different overall levels) in 2014. Among men, those aged 75 and over stood out as the least likely group to exceed daily limits or to binge drink, whereas for women, the two oldest groups (65-74 and 75 and over) were the most distinctive. To illustrate, 40-47% of men aged 16-74 drank in excess of the daily limits compared with 18% of men in the oldest age group, while the equivalent figures for binge drinking were 21-28% and 5%, respectively. Among women, 33-45% of those aged 16-64 exceeded the daily limits, which declined to 17% for those aged 65-74 and 9% in the oldest age group. Binge drinking prevalence was 21-22% among women aged 16-54, and declined with age successively after that to just 5% at age 65-74 and 1% for those aged 75 and over.

**Table 2.7**

### **2.5.3 Adherence to weekly and daily drinking guidelines in 2014**

Reported adherence to the guidelines on weekly and daily drinking in 2014 are presented in Table 2.8 and Figures 2C and 2D, by age and sex.

As in previous years,<sup>34</sup> a higher percentage of men (46%) than women (36%) drank in excess of the recommended guidelines for weekly and / or daily drinking in 2014. While this was not true for all age groups (figures were similar for men and women aged 16-24, and 35-54) the gap between the sexes was most notable for those aged 65 and over, where the figures for men were around twice those for women. Levels were broadly similar (45-53%) for men aged under 75 (with a peak

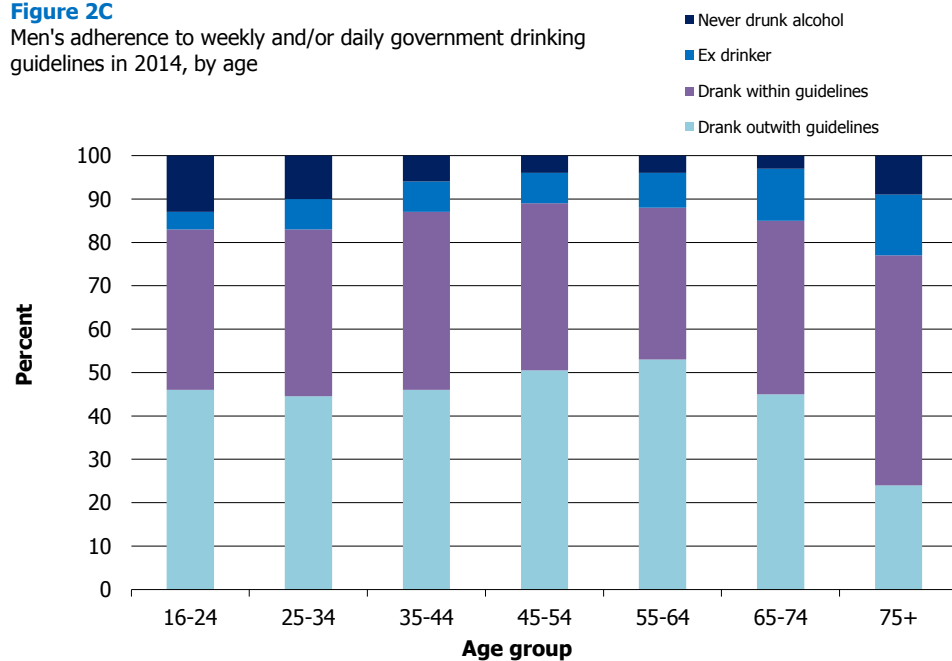
within this of 50-53% for those aged 45-64), but much lower, at 24%, for the oldest group. The pattern for women was more varied. Among those aged 16-54, women aged 25-34 were the least likely to drink outwith the guidelines (35% compared with 44-49% for the rest of this age group), and prevalence then declined steadily from the age of 55-64 onwards, to just 12% for the oldest group.

In 2014, 40% of men and 46% of women drank alcohol within the government guidelines. Women aged 65 and over (51-55%), and men aged 75 and over (53%), were the most likely to do this.

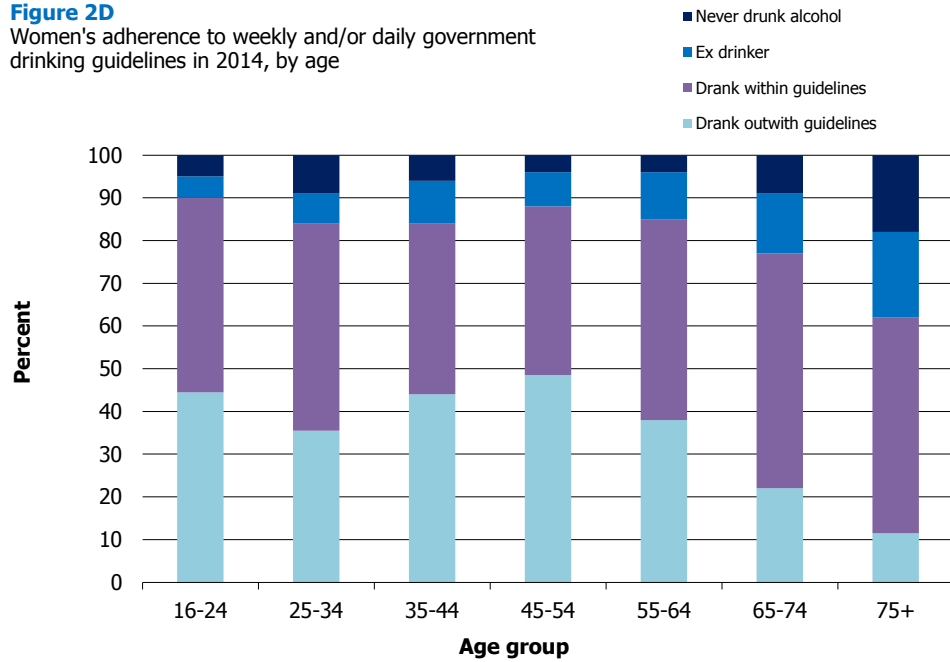
Ex-drinkers were more likely to be older and this was true for both sexes in 2014. Lifelong abstinence from alcohol among men was highest (10-13%) for the two youngest groups (aged 16-34) and those aged 75 and over (9%), compared with 3-6% for all other age groups. In contrast, the oldest women were the most likely to have never drunk alcohol (18%), with the figures for all other age groups ranging between 4% and 9% with no clear pattern. **Figure 2C, Figure 2D, Table 2.8**

**Figure 2C**

Men's adherence to weekly and/or daily government drinking guidelines in 2014, by age



**Figure 2D**  
Women's adherence to weekly and/or daily government drinking guidelines in 2014, by age



#### 2.5.4 Number of days alcohol was consumed in past week in 2014

The reported numbers of days on which drinkers consumed alcohol in the past week in 2014 are presented by age and sex in Table 2.9. Consistent with previous reports,<sup>34</sup> in 2014 male drinkers consumed alcohol on more days per week than did female drinkers (2.7 compared with 2.4). Similarly, the mean number of drinking days in the past week increased with age (from 1.9 for drinkers aged 16-34 to 3.7 for those aged 75 and over); this pattern was true for men and women.

Male drinkers were also more likely than female drinkers to have drunk alcohol on more than five days in the past week (11% and 8%, respectively) in 2014. This was due primarily to the higher prevalence among men aged 45 and over. Drinking on five or more days was relatively rare for drinkers aged 16-44 (2-4%), but increased to 23% for those aged 65-74 and to 32% for those aged 75 and over.

As highlighted in previous reports, there is a discrepancy between the age-related patterns in weekly mean unit consumption (which is lowest in the oldest groups, see Table 2.1) and the number of days on which alcohol was consumed in the past week (highest in the oldest groups). Together, these data suggest that younger drinkers tend to consume larger quantities in fewer drinking sessions, while older drinkers consume smaller amounts with greater frequency.

**Table 2.9**

## References and notes

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- <sup>2</sup> See: [www.who.int/substance\\_abuse/publications/global\\_alcohol\\_report/en/](http://www.who.int/substance_abuse/publications/global_alcohol_report/en/)
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past twelve months, and how much they had usually drunk on any one day. The amount given to the latter question was converted into units of alcohol, with a unit equal to half a pint of normal strength beer/lager/cider/alcoholic soft drink, a single measure of spirits, one glass of wine, or one small glass of fortified wine. A half pint of strong beer/lager/cider was equal to 1.5 units. The number of units was then multiplied by the frequency to give an estimate of weekly consumption of each type of drink. The frequency multipliers were:

Drinking frequency	Multiplying factor
Almost every day	7.0
5 or 6 times a week	5.5
3 or 4 times a week	3.5
Once or twice a week	1.5
Once or twice a month	0.375
One every couple months	0.115
Once or twice a year	0.029

The separate consumption figures for each type of drink were rounded to two decimal places and then added together to give an overall weekly consumption figure. The results were then banded, using the same bands as the ones used in the 1995 Scottish Health Survey and in all years of the Health Survey for England. The bandings for men are as follows:

- 1 Under 1 unit (less than or equal to 0.50 units)
- 2 1-10 units (over 0.50 units, but less than or equal to 10.00 units)
- 3 Over 10-21 units (over 10.00 units, but less than or equal to 21.00 units)
- 4 Over 21-35 units (over 21.00 units, but less than or equal to 35.00 units)
- 5 Over 35-50 units (over 35.00 units, but less than or equal to 50.00 units)
- 6 Over 50 (over 50.00 units)

The bands for women were similar, but with breaks at 7, 14, 21 and 35 units, instead of 10, 21, 35 and 50.

- 33 Participants were first asked if they had drunk alcohol in the past seven days. If they had, they were asked on how many days and, if on more than one, whether they had drunk the same amount on each day or more on one day than others. If they had drunk more on one day than others, they were asked how much they drank on that day. If they had drunk the same on several days, they were asked how much they drank on the most recent of those days. If they had drunk on only one day, they were asked how much they had drunk on that day.
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- 35 See for example the North West Public Health Observatory's Local Alcohol Profiles for England, which use these definitions - [www.nwph.net/alcohol/lape/](http://www.nwph.net/alcohol/lape/)

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**Table 2.1 Estimated usual weekly alcohol consumption level, 2003 to 2014**

<i>Aged 16 and over</i>		<i>2003 to 2014</i>						
<b>Alcohol units per week</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Estimated usual weekly alcohol consumption level<sup>a</sup></b>								
Non-drinker	8	10	10	12	11	12	12	14
Moderate	58	59	63	61	64	63	65	63
Hazardous / Harmful	33	30	27	27	25	25	22	23
Mean units per week	19.8	18.0	17.5	16.0	15.0	15.2	13.7	13.6
SE of the mean	0.62	0.53	0.75	0.50	0.42	0.59	0.48	0.44
<b>Women</b>								
<b>Estimated usual weekly alcohol consumption level<sup>a</sup></b>								
Non-drinker	13	13	16	17	17	17	20	18
Moderate	64	67	66	65	65	65	64	65
Hazardous / Harmful	23	20	19	18	18	18	16	17
Mean units per week	9.0	8.6	7.8	7.6	7.4	7.6	6.8	7.4
SE of the mean	0.31	0.34	0.24	0.24	0.23	0.33	0.25	0.33
<b>All adults</b>								
<b>Estimated usual weekly alcohol consumption level<sup>a</sup></b>								
Non-drinker	11	12	13	15	14	15	16	16
Moderate	61	63	64	63	64	64	65	64
Hazardous / Harmful	28	25	23	22	21	21	19	20
Mean units per week	14.1	13.1	12.4	11.6	11.1	11.3	10.1	10.3
SE of the mean	0.36	0.34	0.40	0.29	0.27	0.35	0.29	0.30
<i>Bases (weighted):</i>								
<i>Men</i>	3791	3011	3576	3388	3551	2253	2303	2171
<i>Women</i>	4215	3319	3912	3711	3874	2464	2501	2389
<i>All adults</i>	8006	6330	7488	7098	7425	4717	4805	4560
<i>Bases (unweighted):</i>								
<i>Men</i>	3558	2796	3276	3064	3239	2095	2108	2028
<i>Women</i>	4482	3579	4232	4076	4220	2657	2724	2564
<i>All adults</i>	8040	6375	7508	7140	7459	4752	4832	4592

a Non-drinker: no units per week; Moderate: >0 units and up to 21 units for men / 14 units for women; Hazardous / harmful: more than 21 units for men / 14 units for women

**Table 2.2 Estimated units consumed on heaviest drinking day, 2003 to 2014**

<i>Aged 16 and over</i>		<i>2003 to 2014</i>						
<b>Alcohol units per day</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Units consumed on heaviest drinking day (HDD)</b>								
Consumed over 4 units on HDD	45	44	44	43	41	42	40	41
Consumed over 8 units on HDD	29	27	26	26	25	25	25	24
Mean units on HDD	6.5	6.2	5.9	6.0	5.5	5.6	5.2	5.5
SE of the mean	0.18	0.19	0.17	0.21	0.15	0.21	0.19	0.21
<b>Women</b>								
<b>Units consumed on heaviest drinking day (HDD)</b>								
Consumed over 4 units on HDD	37	36	34	33	34	30	31	33
Consumed over 8 units on HDD	19	18	17	16	17	15	15	16
Mean units on HDD	3.6	3.5	3.2	3.1	3.2	2.8	2.8	3.1
SE of the mean	0.10	0.14	0.09	0.09	0.09	0.11	0.10	0.15
<b>All adults</b>								
<b>Units consumed on heaviest drinking day (HDD)</b>								
Consumed over 4 units on HDD	41	40	39	38	37	36	35	37
Consumed over 8 units on HDD	24	22	21	21	20	20	19	20
Mean units on HDD	4.9	4.8	4.5	4.5	4.3	4.1	4.0	4.2
SE of the mean	0.12	0.13	0.10	0.12	0.10	0.13	0.12	0.14
<i>Bases (weighted):</i>								
<i>Men</i>	3819	3015	3521	3386	3549	2264	2270	2137
<i>Women</i>	4254	3320	3865	3710	3860	2460	2498	2379
<i>All adults</i>	8073	6335	7385	7096	7409	4724	4768	4517
<i>Bases (unweighted):</i>								
<i>Men</i>	3580	2801	3244	3066	3242	2104	2082	2001
<i>Women</i>	4507	3579	4202	4083	4217	2659	2721	2552
<i>All adults</i>	8087	6380	7446	7149	7459	4763	4803	4553

**Table 2.3 Adherence to weekly and daily drinking advice, 2003 to 2014**

<i>Aged 16 and over</i>		<i>2003 to 2014</i>						
<b>Adherence to weekly and daily drinking advice<sup>a,b</sup></b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Adherence to weekly and daily drinking advice</b>								
Never drunk alcohol	4	4	4	6	5	5	5	7
Ex drinker	4	6	6	7	6	7	7	8
Drinks within government guidelines <sup>a</sup>	39	39	41	39	42	41	42	40
Drinks outwith government guidelines <sup>b</sup>	53	51	49	49	46	47	45	46
<b>Women</b>								
<b>Adherence to weekly and daily drinking advice</b>								
Never drunk alcohol	9	7	8	9	9	9	10	7
Ex drinker	5	6	7	8	9	9	10	10
Drinks within government guidelines <sup>a</sup>	45	47	47	45	44	47	45	46
Drinks outwith government guidelines <sup>b</sup>	42	40	38	38	38	35	35	36
<b>All adults</b>								
<b>Adherence to weekly and daily drinking advice</b>								
Never drunk alcohol	7	6	6	7	7	7	8	7
Ex drinker	5	6	7	7	8	8	9	9
Drinks within government guidelines <sup>a</sup>	42	43	44	42	43	44	44	43
Drinks outwith government guidelines <sup>b</sup>	47	45	43	43	42	41	40	41
<i>Bases (weighted):</i>								
<i>Men</i>	3769	2981	3519	3355	3520	2234	2240	2108
<i>Women</i>	4203	3296	3862	3675	3827	2442	2469	2362
<i>All adults</i>	7972	6277	7381	7030	7347	4677	4709	4470
<i>Bases (unweighted):</i>								
<i>Men</i>	3543	2778	3242	3042	3222	2085	2061	1979
<i>Women</i>	4469	3560	4199	4055	4192	2643	2702	2536
<i>All adults</i>	8012	6338	7441	7097	7414	4728	4763	4515

a Drank no more than 4 units (men) or 3 units (women) on heaviest drinking day, and drank no more than 21 units (men) or 14 units (women) in usual week

b Drank more than 4 units (men) or 3 units (women) on heaviest drinking day, and / or drank more than 21 units (men) or 14 units (women) in usual week

**Table 2.4 Number of days on which drank alcohol in the past week, 2003 to 2014**

	<i>Aged 16 and over and drank alcohol in past week</i>							<i>2003 to 2014</i>	
<b>% who drank on &gt;5 days / mean number of days drank alcohol in last week<sup>a</sup></b>	2003	2008	2009	2010	2011	2012	2013	2014	
	%	%	%	%	%	%	%	%	
<b>Men</b>									
<b>Number of days on which drank alcohol in the past week<sup>a</sup></b>									
Drank on >5 days	20	17	14	15	13	13	12	11	
Mean number of days	3.3	3.1	2.9	2.9	2.8	2.8	2.8	2.7	
SE of the mean	0.05	0.05	0.04	0.05	0.05	0.06	0.06	0.06	
<b>Women</b>									
<b>Number of days on which drank alcohol in the past week<sup>a</sup></b>									
Drank on >5 days	13	10	9	10	10	10	9	8	
Mean number of days	2.7	2.5	2.5	2.5	2.5	2.5	2.4	2.4	
SE of the mean	0.05	0.05	0.04	0.04	0.05	0.06	0.05	0.05	
<b>All adults</b>									
<b>Number of days on which drank alcohol in the past week<sup>a</sup></b>									
Drank on >5 days	17	14	11	13	12	12	11	10	
Mean number of days	3.0	2.8	2.7	2.7	2.7	2.7	2.6	2.6	
SE of the mean	0.04	0.04	0.03	0.04	0.04	0.05	0.04	0.05	
<i>Bases (weighted):</i>									
<i>Men</i>	2762	2160	2497	2307	2406	1551	1538	1437	
<i>Women</i>	2472	1953	2199	2070	2152	1283	1285	1301	
<i>All adults</i>	5234	4113	4696	4377	4557	2834	2823	2738	
<i>Bases (unweighted):</i>									
<i>Men</i>	2590	1967	2266	2057	2174	1405	1392	1346	
<i>Women</i>	2609	2053	2346	2200	2256	1361	1354	1360	
<i>All adults</i>	5199	4020	4612	4257	4430	2766	2746	2706	

a Of those who drank alcohol in the last week

**Table 2.5 Estimated usual weekly alcohol consumption level (age-standardised), 2003 to 2014, by equivalised income and sex**

<i>Aged 16 and over</i>		<i>2003 to 2014</i>						
<b>Alcohol units per week<sup>a</sup></b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
Hazardous / harmful drinking								
1st (highest income)	42	36	37	36	30	30	25	31
2nd	37	34	30	25	27	26	29	24
3rd	31	33	28	24	27	22	22	22
4th	27	26	19	25	23	24	20	18
5th (lowest income)	25	25	26	25	18	23	17	18
Mean units per week								
1st (highest income)	21.9	19.3	21.6	18.0	17.3	18.6	15.6	15.9
2nd	21.0	18.2	17.6	14.6	15.6	14.3	15.1	14.6
3rd	19.6	18.9	17.6	13.8	15.8	13.4	13.6	13.3
4th	17.9	16.9	12.9	15.5	14.2	14.7	11.9	10.8
5th (lowest income)	18.1	19.4	20.4	19.2	13.0	17.3	12.7	12.1
SE of the mean								
1st (highest income)	0.96	0.99	3.12	0.92	0.86	1.21	1.10	0.89
2nd	0.99	0.93	0.94	0.78	1.04	0.95	0.96	1.20
3rd	1.83	1.38	1.81	0.88	0.98	1.09	1.26	1.02
4th	1.82	1.98	0.89	1.41	1.05	1.64	1.03	1.25
5th (lowest income)	1.70	2.11	2.11	2.10	1.35	2.44	1.52	1.36

*Continued...*

**Table 2.5 - Continued**

*Aged 16 and over*

*2003 to 2014*

<b>Alcohol units per week<sup>a</sup></b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Women</b>								
Hazardous / harmful drinking								
1st (highest income)	37	30	24	28	26	27	24	22
2nd	28	20	23	21	21	18	18	21
3rd	20	20	17	18	16	17	18	16
4th	17	18	14	16	17	15	9	15
5th (lowest income)	16	16	15	12	12	12	11	13
Mean units per week								
1st (highest income)	12.3	11.3	9.8	10.2	10.3	10.2	9.2	9.1
2nd	10.3	7.9	9.5	8.9	8.2	8.1	8.0	8.8
3rd	8.2	8.1	7.6	7.5	7.0	6.7	7.4	7.5
4th	6.8	7.4	6.5	6.7	6.3	6.5	4.8	6.7
5th (lowest income)	7.5	9.3	6.8	6.3	5.9	6.9	5.6	5.9
SE of the mean								
1st (highest income)	0.58	0.87	0.85	0.61	0.59	0.79	0.70	0.57
2nd	0.63	0.54	0.59	0.53	0.45	0.96	0.60	1.00
3rd	0.56	0.62	0.52	0.53	0.45	0.55	0.61	1.29
4th	0.43	0.64	0.50	0.60	0.40	0.65	0.53	1.00
5th (lowest income)	1.12	1.18	0.75	0.65	0.58	0.95	0.66	0.60

*Continued...*

**Table 2.5 - Continued**

*Aged 16 and over*

*2003 to 2014*

<b>Alcohol units per week<sup>a</sup></b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>All adults</b>								
Hazardous / harmful drinking								
1st (highest income)	40	33	31	33	28	29	24	27
2nd	32	27	26	23	24	22	24	22
3rd	25	26	23	21	21	19	20	19
4th	22	21	17	20	20	19	14	16
5th (lowest income)	20	20	20	18	15	17	13	15
Mean units per week								
1st (highest income)	17.3	15.4	16.0	14.3	14.0	14.6	12.6	12.6
2nd	15.7	12.9	13.5	11.8	11.8	11.2	11.8	11.8
3rd	13.5	13.4	12.4	10.5	11.3	9.9	10.2	10.3
4th	11.6	11.6	9.6	10.6	9.9	10.0	8.0	8.4
5th (lowest income)	12.2	13.7	12.4	12.1	9.1	11.6	8.6	8.7
SE of the mean								
1st (highest income)	0.66	0.74	1.73	0.62	0.57	0.85	0.75	0.62
2nd	0.64	0.60	0.61	0.50	0.63	0.74	0.65	0.95
3rd	0.90	0.80	0.97	0.53	0.63	0.65	0.73	0.88
4th	0.85	1.05	0.53	0.77	0.55	0.76	0.56	0.86
5th (lowest income)	0.98	1.15	1.04	1.05	0.74	1.25	0.77	0.74

*Continued...*

**Table 2.5 - Continued***Aged 16 and over**2003 to 2014*

<b>Alcohol units per week<sup>a</sup></b>	2003	2008	2009	2010	2011	2012	2013	2014
<i>Bases (weighted):</i>								
<i>Men - 1st (highest income)</i>	838	642	771	703	714	456	472	453
<i>Men - 2nd</i>	692	545	698	697	618	426	489	431
<i>Men - 3rd</i>	610	581	632	547	633	373	330	379
<i>Men - 4th</i>	616	421	664	507	539	328	343	287
<i>Men - 5th (lowest income)</i>	513	426	426	460	462	338	294	307
<i>Women - 1st (highest income)</i>	768	603	690	631	657	414	429	415
<i>Women - 2nd</i>	677	569	708	671	664	413	413	416
<i>Women - 3rd</i>	704	592	674	607	654	399	399	409
<i>Women - 4th</i>	825	530	689	652	649	436	415	400
<i>Women - 5th (lowest income)</i>	650	556	616	574	572	406	408	369
<i>All adults - 1st (highest income)</i>	1606	1245	1461	1334	1371	870	901	868
<i>All adults - 2nd</i>	1368	1114	1407	1368	1283	838	902	847
<i>All adults - 3rd</i>	1314	1173	1306	1154	1288	772	728	788
<i>All adults - 4th</i>	1441	952	1352	1159	1188	764	758	687
<i>All adults - 5th (lowest income)</i>	1163	983	1043	1034	1034	744	702	676
<i>Bases (unweighted):</i>								
<i>Men - 1st (highest income)</i>	773	531	666	617	628	415	424	418
<i>Men - 2nd</i>	641	524	619	585	557	402	422	394
<i>Men - 3rd</i>	577	522	583	508	601	363	330	376
<i>Men - 4th</i>	649	460	594	519	521	328	356	280
<i>Men - 5th (lowest income)</i>	476	396	415	426	439	306	283	297
<i>Women - 1st (highest income)</i>	806	577	714	648	683	442	458	438
<i>Women - 2nd</i>	715	625	722	722	705	454	450	433
<i>Women - 3rd</i>	752	622	741	692	747	443	459	455
<i>Women - 4th</i>	920	635	769	741	736	482	497	440
<i>Women - 5th (lowest income)</i>	685	608	683	645	648	437	433	429
<i>All adults - 1st (highest income)</i>	1579	1108	1380	1265	1311	857	882	856
<i>All adults - 2nd</i>	1356	1149	1341	1307	1262	856	872	827
<i>All adults - 3rd</i>	1329	1144	1324	1200	1348	806	789	831
<i>All adults - 4th</i>	1569	1095	1363	1260	1257	810	853	720
<i>All adults - 5th (lowest income)</i>	1161	1004	1098	1071	1087	743	716	726

a Non-drinker: no units per week; Moderate: >0 units and up to 21 units for men / 14 units for women; Hazardous/harmful: more than 21 units for men / 14 units for women



**Table 2.6 Estimated usual weekly alcohol consumption level, 2014, by age and sex**

<i>Aged 16 and over</i>								<i>2014</i>
Alcohol units per week	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Estimated usual weekly alcohol consumption level<sup>a</sup></b>								
Non-drinker	16	16	12	11	12	14	23	14
Moderate	62	69	68	62	60	57	61	63
Hazardous / Harmful	22	15	19	27	29	29	16	23
Mean units per week	12.2	10.1	13.3	15.0	16.1	17.2	9.3	13.6
SE of the mean	1.55	0.84	1.14	1.12	1.10	1.60	1.01	0.44
<b>Women</b>								
<b>Estimated usual weekly alcohol consumption level<sup>a</sup></b>								
Non-drinker	10	16	16	12	15	23	37	18
Moderate	66	70	67	63	66	66	57	65
Hazardous / Harmful	24	13	18	26	19	11	6	17
Mean units per week	10.3	6.1	7.3	9.9	7.8	5.2	3.4	7.4
SE of the mean	1.74	0.54	0.53	0.77	0.56	0.56	0.43	0.33
<b>All adults</b>								
<b>Estimated usual weekly alcohol consumption level<sup>a</sup></b>								
Non-drinker	13	16	14	11	13	19	31	16
Moderate	64	70	67	62	63	62	58	64
Hazardous / Harmful	23	14	18	26	24	20	10	20
Mean units per week	11.2	8	10.2	12.4	11.9	10.9	5.8	10.3
SE of the mean	1.21	0.53	0.63	0.80	0.66	0.87	0.55	0.30
<i>Bases (weighted):</i>								
<i>Men</i>	269	352	353	415	345	263	173	2171
<i>Women</i>	290	374	377	441	363	294	251	2389
<i>All adults</i>	559	726	730	856	708	557	424	4560
<i>Bases (unweighted):</i>								
<i>Men</i>	176	248	301	360	356	360	227	2028
<i>Women</i>	214	336	419	430	435	419	311	2564
<i>All adults</i>	390	584	720	790	791	779	538	4592

a Non-drinker: no units per week; Moderate: >0 units and up to 21 units for men / 14 units for women; Hazardous / harmful: more than 21 units for men / 14 units for women

**Table 2.7 Units consumed on heaviest drinking day, 2014, by age and sex**

*Aged 16 and over*

2014

Alcohol units per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Units consumed on heaviest drinking day (HDD)</b>								
Consumed over 4 units on HDD	40	42	42	47	44	40	18	41
Consumed over 8 units on HDD	28	27	26	28	21	22	5	24
Mean units on HDD	6.4	5.8	6.2	6.1	5.2	4.6	2.2	5.5
SE of the mean	0.95	0.61	0.59	0.40	0.41	0.32	0.22	0.21
<b>Women</b>								
<b>Units consumed on heaviest drinking day (HDD)</b>								
Consumed over 4 units on HDD	39	33	39	45	34	17	9	33
Consumed over 8 units on HDD	22	22	21	21	13	5	1	16
Mean units on HDD	4.7	3.3	3.5	3.8	2.9	1.7	0.9	3.1
SE of the mean	0.91	0.29	0.24	0.27	0.23	0.15	0.09	0.15
<b>All adults</b>								
<b>Units consumed on heaviest drinking day (HDD)</b>								
Consumed over 4 units on HDD	39	38	41	46	39	28	13	37
Consumed over 8 units on HDD	25	24	23	24	17	13	2	20
Mean units on HDD	5.5	4.5	4.8	4.9	4	3.1	1.4	4.2
SE of the mean	0.67	0.36	0.32	0.27	0.25	0.18	0.11	0.14
<i>Bases (weighted):</i>								
<i>Men</i>	278	346	334	407	339	260	173	2137
<i>Women</i>	294	368	370	440	365	291	251	2379
<i>All adults</i>	572	714	704	846	704	551	425	4517
<i>Bases (unweighted):</i>								
<i>Men</i>	180	244	291	354	350	356	226	2001
<i>Women</i>	218	331	413	427	437	415	311	2552
<i>All adults</i>	398	575	704	781	787	771	537	4553

**Table 2.8 Adherence to weekly and daily drinking advice, 2014, by age and sex**

*Aged 16 and over*

2014

Adherence to weekly and daily drinking advice <sup>a,b</sup>	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Adherence to weekly and daily drinking advice</b>								
Never drunk alcohol	13	10	6	4	4	3	9	7
Ex drinker	4	7	7	7	8	12	14	8
Drinks within government guidelines <sup>a</sup>	37	39	41	38	35	40	53	40
Drinks outwith government guidelines <sup>b</sup>	46	45	46	50	53	45	24	46
<b>Women</b>								
<b>Adherence to weekly and daily drinking advice</b>								
Never drunk alcohol	5	9	6	4	4	9	18	7
Ex drinker	5	7	10	8	11	14	20	10
Drinks within government guidelines <sup>a</sup>	45	48	40	40	47	55	51	46
Drinks outwith government guidelines <sup>b</sup>	44	35	44	49	38	22	12	36
<b>All adults</b>								
<b>Adherence to weekly and daily drinking advice</b>								
Never drunk alcohol	9	10	6	4	4	6	14	7
Ex drinker	5	7	9	8	10	13	17	9
Drinks within government guidelines <sup>a</sup>	41	44	41	39	41	48	52	43
Drinks outwith government guidelines <sup>b</sup>	45	40	45	49	45	33	17	41
<i>Bases (weighted):</i>								
<i>Men</i>	256	344	330	406	339	260	173	2108
<i>Women</i>	282	368	369	439	363	291	249	2362
<i>All adults</i>	538	712	699	845	702	551	422	4470
<i>Bases (unweighted):</i>								
<i>Men</i>	165	243	287	353	349	356	226	1979
<i>Women</i>	208	331	412	426	435	415	309	2536
<i>All adults</i>	373	574	699	779	784	771	535	4515

a Drank no more than 4 units (men) or 3 units (women) on heaviest drinking day, and drank no more than 21 units (men) or 14 units (women) in usual week

b Drank more than 4 units (men) or 3 units (women) on heaviest drinking day, and / or drank more than 21 units (men) or 14 units (women) in usual week

**Table 2.9 Number of days on which drank alcohol in the past week, 2014, by age and sex**

*Aged 16 and over and drank alcohol in past week*

2014

% who drank on >5 days / mean number of days drank alcohol in last week <sup>a</sup>	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Number of days on which drank alcohol in the past week<sup>a</sup></b>								
Drank on >5 days	2	1	4	10	15	26	35	11
Mean number of days	2.0	1.9	2.4	2.7	3.1	3.6	3.9	2.7
SE of the mean	0.19	0.11	0.13	0.14	0.14	0.16	0.22	0.06
<b>Women</b>								
<b>Number of days on which drank alcohol in the past week<sup>a</sup></b>								
Drank on >5 days	2	2	5	4	12	18	28	8
Mean number of days	1.9	1.9	2.2	2.4	2.9	2.9	3.4	2.4
SE of the mean	0.15	0.10	0.11	0.10	0.14	0.16	0.26	0.05
<b>All adults</b>								
<b>Number of days on which drank alcohol in the past week<sup>a</sup></b>								
Drank on >5 days	2	2	4	7	13	23	32	10
Mean number of days	1.9	1.9	2.3	2.6	3.0	3.3	3.7	2.6
SE of the mean	0.14	0.08	0.09	0.10	0.10	0.13	0.20	0.05
<i>Bases (weighted):</i>								
<i>Men</i>	164	229	231	279	253	186	95	1437
<i>Women</i>	156	198	219	283	210	142	92	1301
<i>All adults</i>	320	427	450	562	464	328	188	2738
<i>Bases (unweighted):</i>								
<i>Men</i>	110	161	197	242	261	248	127	1346
<i>Women</i>	109	176	246	265	253	204	107	1360
<i>All adults</i>	219	337	443	507	514	452	234	2706

a Of those who drank alcohol in the last week



### 3 SMOKING

Lindsay Gray & Alastair H Leyland

#### SUMMARY

##### Smoking prevalence

- In 2014 one in five adults (22%) reported that they were current cigarette smokers, similar to the rate in 2013 (21%).
- Just under a quarter (23%) of adults used to smoke regularly and 55% had either never smoked at all, or used to smoke but not regularly.
- Prevalence of current smoking in 2014 was similar among men (23%) and women (21%).
- Current smoking was higher among those aged 25-64 (23-26%) than those aged 16-24 (20%), 65-74 (16%) and 75 and over (10%).
- Adult smokers in 2014 smoked on average 13.2 cigarettes per day. Younger smokers smoked the least cigarettes on average per day (10.8 for those aged 16-24 and 10.3 for those aged 25-34).

##### Children's exposure to tobacco smoke in the home

- The proportion of children reported to be exposed to second-hand smoke in the home remained at 11% in 2014 (the same figure as in 2013).
- Exposure levels increased with age from 4% for those aged 0-1 to 18% for those aged 13-15.

##### Adults' use of e-cigarettes

- In 2014, 15% of adults aged 16 and over reported ever having used an e-cigarette, including 5% who said they currently used them. Prevalence of ever using was highest among the younger age groups while current usage was highest for those aged 35-64 (6-7%).
- Exactly half (50%) of current cigarette smokers reported ever using e-cigarettes, including 15% currently using. In total, 14% of ex-regular smokers ever used an e-cigarette including 7% currently using them. Just 1% of people who had never smoked regularly reported using e-cigarettes currently or ever.

##### Quit attempts and smoking cessation

- In 2014, two-thirds (67%) of smokers said they would like to quit smoking.
- Frequency of attempts to quit showed 21% of all smokers having made no attempts, 37% one or two and 43% at least three attempts.
- Women were more likely than men to have attempted to quit smoking. In total, 82% of female smokers had attempted to quit, compared with 77% of male smokers. Just under half (46%) of female smokers, and 39% of male smokers, had attempted to quit on at least three occasions.
- Patterns by age showed a link between the length of time someone has smoked and their number of quit attempts, with smokers from the age of 35 onwards the most likely to have made three or more unsuccessful quit attempts.
- Just under two-thirds (64%) of recent ex-smokers and current smokers who had attempted to quit said they used a nicotine replacement therapy (NRT) product or e-cigarettes in the previous three months. Use of products to support a quit attempt was significantly higher for women (67%) than men (60%), and also

higher among those aged 18-64 (64-68%) than those aged 65 and over (50%).

- The most common items used as part of a recent quit attempt were nicotine patches (36%) and e-cigarettes (32%).
- Over a third (36%) of people who had used a product as part of a recent quit attempt had also used smoking cessation services, most commonly pharmacies (18%), specialist cessation advisers (9%) and GPs (7%).

#### **Factors associated with successful quitting**

- Factors associated with having successfully quit smoking for adults who had ever smoked regularly included:
  - Age – those aged 55 and over had increased odds of having successfully quit, compared with those aged 16-34.
  - Marital status – married / in civil partnership had increased odds of having quit.
  - Body mass index – obese / morbidly obese adults had increased odds compared with those not overweight.
  - SIMD – those in the most deprived areas had lower odds (women only).
  - Equivalised household income – those with lower household incomes had lower odds.
  - Economic activity – those who were unemployed and looking for work had lower odds than those in employment.
  - Education – those with no or only low-level qualifications had lower odds than those with a degree.
  - Alcohol consumption – those who drank over the weekly recommended maximum number of units had lower odds (men only).

### **3.1 INTRODUCTION**

Nationally<sup>1</sup> and globally,<sup>2</sup> tobacco use is the leading cause of preventable poor health and premature mortality, each year killing around 6 million people and costing over half a trillion dollars worldwide.<sup>3</sup> In Scotland alone, tobacco use is associated with over 13,000 deaths (around a quarter of all deaths) and approximately 56,000 hospital admissions every year.<sup>4</sup>

#### **3.1.1 Policy background**

Several of the Scottish Government's National Indicators are relevant to smoking.<sup>5</sup> In addition to the specific indicator to reduce the proportion of adults who are current smokers, there are more general related indicators on, for example, reducing premature mortality and reducing emergency admissions to hospital.<sup>6</sup>

The **Tobacco Control Strategy**<sup>7</sup> lays out the Scottish Government's vision to create a 'tobacco-free generation' (defined as 'a smoking prevalence among the adult population of 5% or lower') by the year 2034. Actions arising from the strategy are structured around the themes of prevention, protection and cessation. Smoking cessation interventions, including pharmacotherapy, are among the most cost-effective health care interventions available.<sup>8</sup>

One outcome of the actions under the cessation theme was the development of the NHS Scotland HEAT target to achieve at least

12,000 successful quits at twelve weeks post quit, in the 40% most deprived areas within each NHS Health Board (60% for Island Boards) over the one year ending March 2015.<sup>9</sup> These are being replaced in 2015 with the new NHS Local Delivery Plan (LDP) Standards which require NHS Boards to sustain and embed successful smoking quits at twelve weeks post quit, in the 40% most deprived SIMD areas (60% in the Island Boards).<sup>10</sup>

### **3.1.2 Reporting on smoking in the Scottish Health Survey (SHeS)**

Reliable data on smoking behaviour, cessation, NRT use and exposure to second-hand smoke are vital to effective monitoring of trends relevant to the various targets in place. The SHeS self-reported data presented in this chapter complement the data provided by the Scottish Household Survey which is used to measure the current NPF indicator on reducing smoking among adults.<sup>11</sup> This chapter presents figures for prevalence of cigarette smoking, cessation attempts and support, NRT use, e-cigarette use and children's exposure to second-hand smoke.

Nicotine replacement therapy (NRT) products supply low doses of nicotine but do not contain the toxins found in tobacco smoke. The goal of their use is to reduce nicotine cravings and ease the symptoms of nicotine withdrawal. Nicotine replacement products come in many forms such as inhalers, gum, lozenges, nasal sprays and skin patches. From 2014, SHeS has gathered information on the use of e-cigarettes among the Scottish adult population, in response to their increased availability and high profile.

### **3.1.3 Comparability with other UK statistics**

The Health Survey for England, Health Survey for Northern Ireland and Welsh Health Survey provide estimates of smoking prevalence in the other home nations within the UK. A Government Statistical Service publication on the comparability of official statistics across the UK advises that the smoking prevalence estimates across these surveys are only partially comparable as they are conducted separately and have different sampling methodologies.<sup>12</sup> Smoking prevalence estimates from the UK-wide Integrated Household Survey for Scotland, Wales, England and Northern Ireland have been deemed as fully comparable.

## **3.2 METHODS AND DEFINITIONS**

### **3.2.1 Methods of collecting data on smoking behaviour**

Adults aged 20 and over were asked about their smoking behaviour during the face to face interview. For those aged 16 and 17, information was collected in a self-completion questionnaire offering more privacy and reducing the likelihood of concealing behaviour in front of other household members. At the interviewer's discretion those aged 18 and 19 could answer the questions either face to face or via the self-completion booklet.



### **3.2.2 Questions on smoking behaviour**

Questions on smoking have been included in SHeS since 1995. Some small changes were made to the questions in 2008 and 2012, these are outlined in the relevant annual reports.<sup>13,14</sup>

The current questions in the survey focus on:

- current smoking status
- frequency and pattern of current smoking
- the number of cigarettes smoked by current smokers
- ex-smokers' previous smoking history
- exposure to second-hand smoke
- past smoking behaviour
- quit attempts and desire to give up smoking
- medical advice on giving up smoking
- NRT use
- e-cigarette use (including as part of a quit attempt)

While the self-completion questions were largely similar to those asked in the face to face interview, the self-completion questionnaire did exclude questions on: past smoking behaviour, desire to give up smoking and medical advice to stop smoking.

### **3.2.3 Definitions**

#### **Cigarette smoking status**

Information on cigar and pipe use is collected in the survey but as prevalence is low these are not considered in the definition of current smoking. Smoking status categories reported here are:

- current cigarette smoker
- ex-regular cigarette smoker
- never regular cigarette smoker
- never smoked cigarettes at all

#### **Children's exposure to second-hand smoke**

Children's (age 0-15) exposure to second-hand smoke is measured in two ways in the survey:

- whether there is someone who regularly smokes inside the accommodation where the child lives, and
- parents' and older children's (aged 13-15) reports of whether children are exposed to smoke at home.

### 3.3 CIGARETTE SMOKING STATUS

#### 3.3.1 Trends in cigarette smoking status since 1995

The results in each of the self-reported cigarette smoking status groups for adults are given in Table 3.1 for all relevant years. As there have been changes to the age range of the sample over the years, data are presented for all adults aged 16 and over since 2003 along with data for individuals aged 16-64 from 1995.

Table 3.1 presents the trends in smoking status for all adults aged 16 and over since 2003. This showed a current smoking level of 28% in 2003 and a more recent decline between 2012 and 2013 (from 25% to 21%) with the level in 2014 at 22%. This decline from 2012 was statistically significant, providing evidence of progress on the NPF National Indicator to reduce the percentage of adults who smoke.<sup>7</sup> As outlined in section 3.1.3, progress towards the Indicator is monitored using the Scottish Household Survey which had a smoking estimate of 20% in 2014.

While the proportion of all adults aged 16 and over who had never smoked, or had never smoked regularly, increased from 50% in 2003 to 55% in 2011, this figure has remained relatively static since then, at 54-55%. The proportion of all adults identifying as ex-regular smokers changed little between 2003 and 2014 (remaining between 22 and 24%). Time-related patterns and levels for smoking status among those aged 16 and over were similar for men and women.

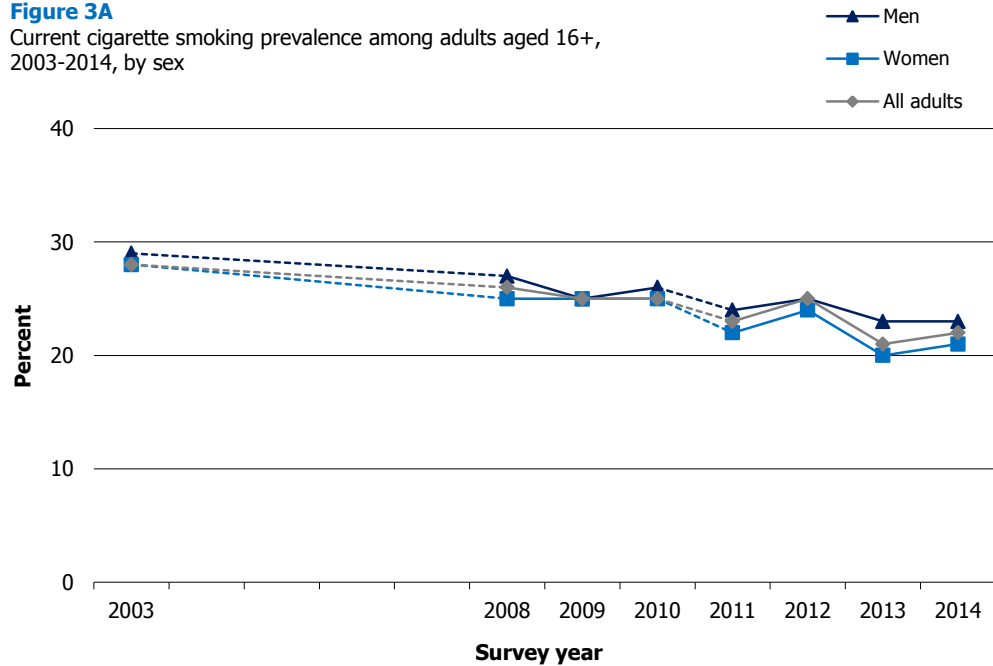
Figures for all adults aged 16-64 showed a similar significant decline in current smoking levels but with this trend having begun in 1998 (35%) and continued to 2014 (24%).

Among all smokers aged 16 and over, there was also a significant fall over time in the mean number of cigarettes smoked per day from 15.3 cigarettes in 2003 to 13.2 cigarettes in 2014. Figures for adults aged 16-64 show that this decline over time can be traced further back, to 1995 (a mean of 16.7 cigarettes in 1995, 15.3 in 2003, and 13.1 in 2014). This overall decrease was more apparent among male smokers aged 16-64 (18.1 cigarettes per day in 1995 to 13.1 cigarettes in 2014) than female smokers (15.4 cigarettes and 13.1 cigarettes respectively).

**Figure 3A, Table 3.1**

**Figure 3A**

Current cigarette smoking prevalence among adults aged 16+, 2003-2014, by sex



### 3.3.2 Cigarette smoking status in 2014

Data on self-reported cigarette smoking status for all adults aged 16 and over in 2014 are shown in Table 3.2. Just over one in five (22%) adults were current smokers in 2014, with 23% reporting that they used to smoke regularly and over half (55%) that they had either never smoked at all, or used to smoke, but not regularly. Current smoking prevalence was similar for men (23%) and women (21%); none of the other figures for smoking status varied by sex either.

There were marked variations in cigarette smoking status by age, as reported previously in SHeS.<sup>14</sup> The prevalence of current smoking in 2014 was highest among those aged 25-64 (23% to 26%), lower among those aged 16-24 (20%), and lowest among those aged 65-74 (16%) and those aged 75 and over (10%). The lower current smoking prevalence among the youngest and oldest age groups was true for both sexes.

As would be expected, the proportion of people identifying as ex-regular smokers was lowest for the youngest age group (7% for those aged 16-24) and highest at older ages (39% for those aged 65-74, 41% for those aged 75 and over) in 2014. This correlation corresponded with patterning by age in the proportions reporting that they had never smoked or had never smoked regularly (72% for those aged 16-24 compared with 44% for those aged 65-74 and 49% for those aged 75 and over).

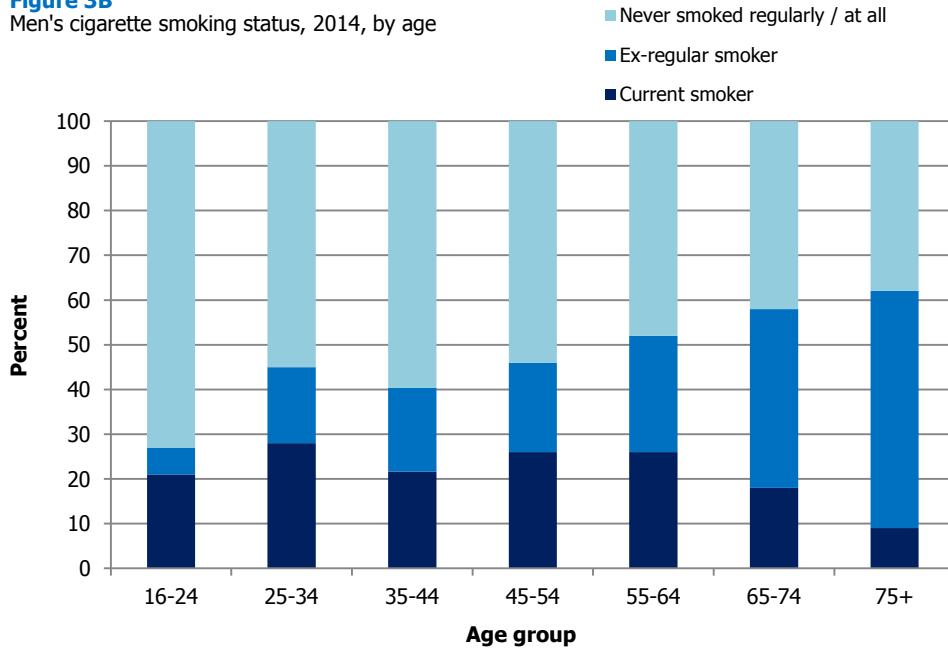
Table 3.2 shows the mean number of cigarettes smoked per day per adult smoker in 2014. The overall mean was 13.2 cigarettes, and was similar for male (13.5 cigarettes) and female smokers (13.0 cigarettes). In 2014, younger smokers smoked the least cigarettes on average per day (10.8 cigarettes for smokers aged 16-24, 10.3 cigarettes for those

aged 25-34) with higher average numbers for those aged 45-74 (between 15.0 and 15.7 cigarettes). These age-related patterns for numbers of cigarettes consumed were similar for male and female smokers.

**Figure 3B, Figure 3C, Table 3.2**

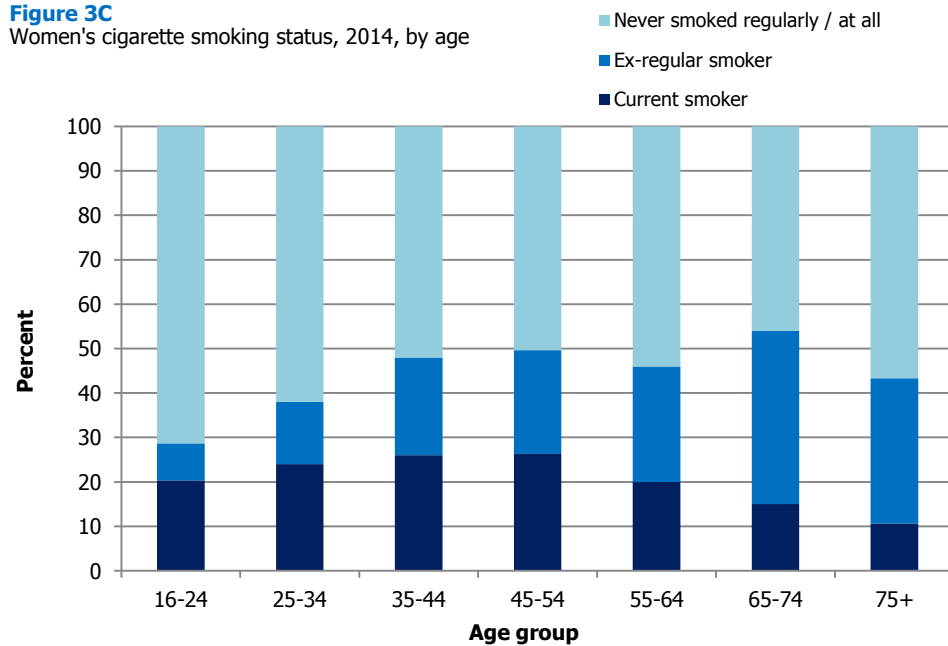
**Figure 3B**

Men's cigarette smoking status, 2014, by age



**Figure 3C**

Women's cigarette smoking status, 2014, by age



### 3.4 CHILDREN'S EXPOSURE TO SECOND-HAND SMOKE IN 2014

The two measures of children's exposure to smoke at home (described in 3.2.3) are presented for 2014 in Table 3.3. The first set of figures shows the prevalence of children living in accommodation in which someone smokes inside. The second figure is for children's reported exposure to smoke in the home, which is being used to monitor progress towards the target to reduce this to 6% by 2020.

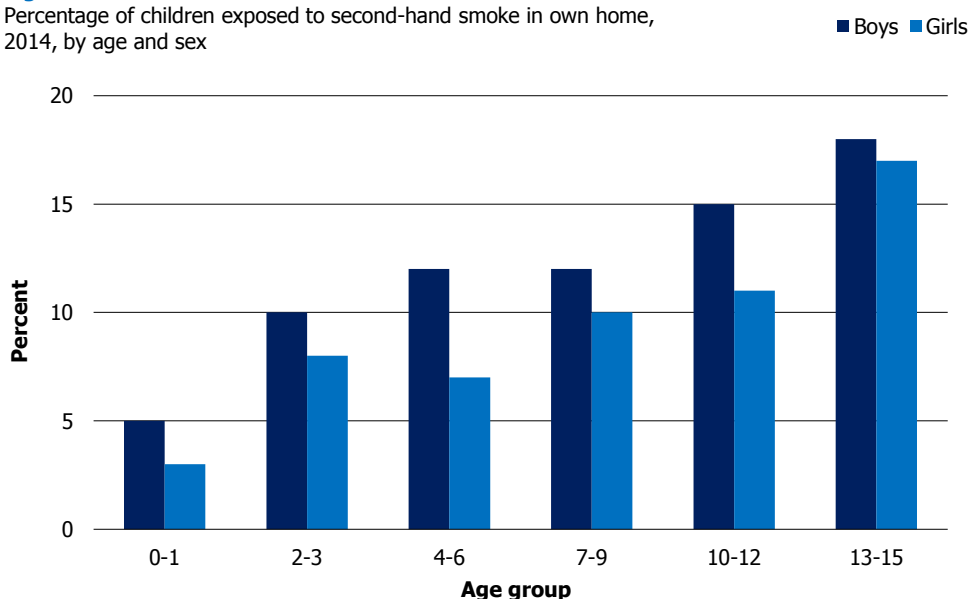
Overall, 16% of children (17% of boys and 16% of girls) lived in accommodation in which someone smoked inside. However, a lower proportion of 11% of children (12% of boys and 10% of girls) were reported to be exposed to second-hand smoke in their home. This figure has not changed significantly from 2012 (12%) or 2013 (11%).

Reported exposure to smoke increased with age, from 4% for those aged 0-1 to 18% for those aged 13-15, with similar levels seen for both boys and girls in each age group. There was less variation by age in the proportion of children who live in accommodation in which someone smokes inside, with levels lowest for those aged 0-1 (10%) but varying between 13% and 21% for all other age groups.

**Figure 3D, Table 3.3**

**Figure 3D**

Percentage of children exposed to second-hand smoke in own home, 2014, by age and sex



### 3.5 E-CIGARETTE USE IN 2014

Use of e-cigarettes in the adult population for 2014 is given by age and sex in Table 3.4. In total, 5% of adults aged 16 and over currently used e-cigarettes, with a further 10% having previously used them (15% therefore having ever used). These figures were similar for both men and women.

Use of e-cigarettes varied by age in 2014, as shown in Figure 3E and Table 3.4. The population prevalence of ever use (including those currently using) decreased steadily with advancing age from 20% among adults aged 16-24 to 3% among those aged 75 and over. The prevalence of current use of e-cigarettes in 2014 was highest among the middle age groups (6-7% among adults aged 35-64) and lower for younger and older adults (4% among those aged 16-34, 1-3% for those aged 65 and over).

**Figure 3E, Table 3.4**

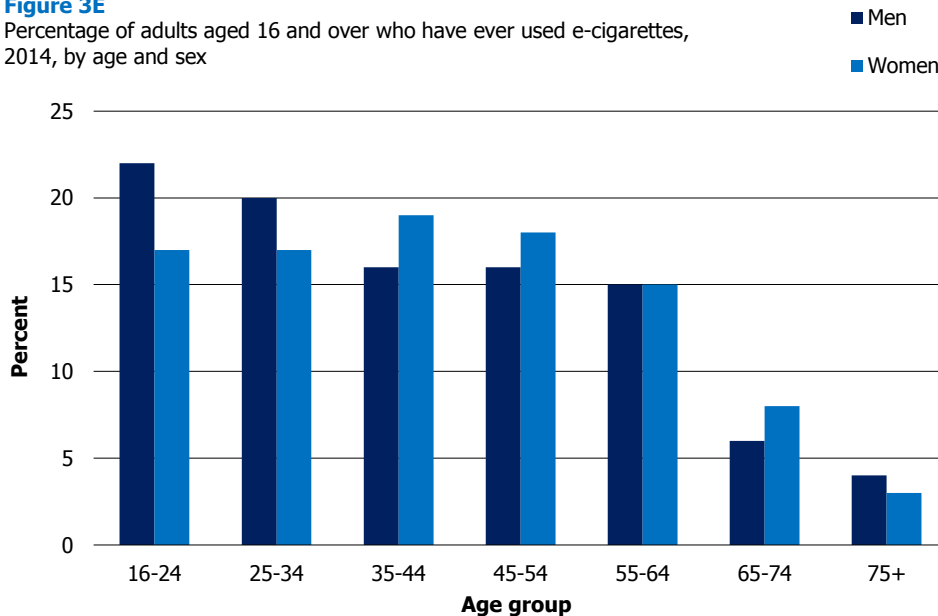
Table 3.5 shows that e-cigarette use was strongly associated with smoking behaviour, with both current and past use of e-cigarettes much higher among current cigarette smokers than among ex-regular or never regular smokers. In total, 15% of smokers reported currently using e-cigarettes and an additional

35% said they had done so in the past, the equivalent figures for ex-regular smokers were 7% and 7%, respectively. Prevalence of e-cigarette use either now or ever was 1% among people who had never smoked regularly (or at all). Use of e-cigarettes as part of smoking quit attempts is discussed in the next section.

**Table 3.5**

**Figure 3E**

Percentage of adults aged 16 and over who have ever used e-cigarettes, 2014, by age and sex



### 3.6 QUIT ATTEMPTS AND SMOKING CESSATION

#### 3.6.1 Quit attempts and aspirations in 2014

Table 3.6 presents 2014 data on the number of attempts current smokers said they had made to quit smoking, and the proportions who said they would like to stop smoking. A fifth (21%) of smokers had made no attempts to quit smoking, 37% had made one or two attempts, and a further 43% had made three or more attempts to quit. Two thirds of smokers (67%) said they would like to quit smoking (61% of male, and 73% of female smokers).

In 2014, a somewhat greater proportion of male than female smokers had made no attempt to quit (23% and 18%, respectively). The proportions making one or two attempts to quit were more similar (37% and 36%, respectively). However, male smokers were less likely than female smokers to have made three or more attempts to quit (39% and 46%, respectively).

Table 3.6 shows the differences in quit attempts by age in 2014. The proportion of smokers having made no quit attempts tended to decline with age from those aged 18-34 (29%) to those aged 55-64 (13%) before increasing for those aged 65 and over (23%). Younger smokers were also the least likely to have made three or more attempts to quit (30% of smokers aged 18-34 compared with 42-50% of smokers aged 35 and over). The age-related associations were generally similar for

men and women, though the sample sizes are relatively small for some of the sex-specific age groups.

These patterns may reflect a correspondence between quit attempts and the total length of time someone has smoked, rather than an association between being a particular age and wanting to stop smoking, as shown by the figures on smokers' desire to quit. Smokers aged 35-64 had similar proportions wanting to quit (67-77%) with lower levels seen for the 18-34 age group (64%) and those aged 65 and over (51%). Female smokers appeared to be keener to quit than their male counterparts across all age groups, (although the results for any individual age group were not statistically significant) except for those aged 65 and over.

**Table 3.6**

### **3.6.2 Products to support quit attempts in 2014**

All current smokers who had ever attempted to quit, and recent ex-smokers (who had quit within the past year), were asked whether they had used any of a list of products as part of a quit attempt within the previous three months. In 2014, 64% of this group of smokers and recent ex-smokers had used some form of nicotine replacement therapy (NRT), or e-cigarettes, for this purpose in the last three months, with the figure significantly higher for women (67%) than men (60%). The particular items most likely to have been used as part of the quit attempt were nicotine patches (36%) and e-cigarettes (32%). Nicotine gum and nasal sprays / nicotine inhalers were used by 17% and 9% respectively, with other products – Lozenge / microtab, Champix / Varenicline and Zyban / Bupropion – being less common.

In 2014, use of products as part of a recent quit attempt varied significantly with age, with those aged 18-64 (64-68%) more likely than those aged 65 and over (50%) to have used at least one of these items. Most of this difference between the age groups was accounted for by patterns in e-cigarette use, which were used by 34-35% of those aged 18-64 who had made a recent quit attempt, but just 16% of those aged 65 and over.

**Table 3.7**

### **3.6.3 Additional smoking cessation support in 2014**

Table 3.8 displays the data for 2014 on use of various services for smoking cessation support during the previous three months. These questions were only asked of people who had used at least one of the products described above. Cessation support services were used by 36% of smokers / ex-smokers who had used a product as part of a recent quit attempt (34% of men and 38% of women in this group). Service use was similar for men and women for pharmacies (18% of all product users), specialist cessation advisors (9%), and GPs (7%). However, cessation support from a GP practice nurse was used more often by women (6%) than men (2%). Use of cessation support services was significantly associated with older age, with 51% of people aged 65 and over with a recent quit attempt using some form of cessation support in combination with a product, compared with 34-35% of those

aged under 65 (though note that the sample size for the oldest group is quite small, so this estimate is not very precise). **Table 3.8**

### **3.7 FACTORS ASSOCIATED WITH SUCCESSFUL QUITTING**

Multivariable logistic regression was used to examine the independent effect of a range of socio-demographic and behavioural factors associated with successful quitting of smoking (the dependent variable) among adults who had ever smoked regularly (i.e. former and current smokers). The factors investigated in the regression models shown in Table 3.9 included behavioural characteristics explored in other chapters in this report: consumption of alcohol (drinking outwith the weekly guidelines), and body mass index (BMI); as well as the key socio-demographic factors of age, marital status, economic activity, education, area deprivation (SIMD), and equivalised household income. By simultaneously controlling for a number of factors, the independent effect each factor has on the variable of interest can be established. Other factors were included in preliminary models, but excluded from the models presented on the basis that they did not show any significant independent associations with successful quitting for either men or women. These included physical activity, levels of fruit and vegetable consumption, being a parent, and socio-economic classification (NS-SEC), both of the respondent at the time of interview and of the family in which they were brought up.

Logistic regression compares the odds of a reference category (shown in the table with a value of one) with that of the other categories. Regressions were run on 2014 data with separate models for men and women. The odds ratios for adult former and current smokers having successfully quit smoking (i.e. being an ex-smoker) are presented in Table 3.9. An odds ratio of less than one means that the odds of someone from a given group having quit smoking are lower than that of an individual from the reference category. When the odds ratio is greater than one, the opposite is true. Independent variables with a p-value of 0.05 or less are significant predictors of the dependent variable at the 95% confidence level.

Age group, marital status, body mass index and SIMD were found to be significant predictors of having successfully quit for both men and women. Additionally, equivalised household income, economic activity and (albeit only just) alcohol intake were significant for men, and level of education was significant for women.

Once all other factors were controlled for, men and women aged 55 and over had significantly higher odds of having successfully quit smoking than those aged 16-34: the odds ratio for men aged 55 to 64 was 2.60, for 65 to 74 was 7.32 and for 75 and over was 25.63; the respective odds ratio for women were 1.77, 5.07 and 6.56.

Men and women who were single (odds ratios of 0.51 for men, 0.40 for women) or separated / divorced / had a dissolved civil partnership (0.29 for men, 0.60 for women) had significantly lower odds of having quit smoking than their married / civilly partnered counterparts. The relative odds for men who were living with a



partner but not married / in civil partnership (0.58) were also significantly lower albeit only marginally so.

The odds of women living in the most deprived areas (odds ratio of 0.50) successfully quitting smoking were exactly half those of women in the least deprived ones. For men, while SIMD shows a significant association with having quit smoking, the individual differences between deprivation quintiles presented are not significant, although those in the most deprived quintile (0.59) had lower odds compared with all other groups (1.00 to 1.31).

Compared with those who were not overweight (BMI <25 kg/m<sup>2</sup>), obese men and women (BMI 30 kg/m<sup>2</sup> and over) had increased odds of having quit smoking (odds ratios of 2.14 for men and 1.82 for women).

Men exceeding the recommended weekly alcohol consumption guidelines for their sex had significantly lower odds of having quit smoking compared with those consuming less than the recommended amounts (odds ratio of 0.66). There were lower odds of having quit smoking for men living in households in the 4<sup>th</sup> and 5<sup>th</sup> (lowest) income quintile (odds ratios of 0.46 and 0.55 respectively) than those living in households in the highest income quintile, although these were only significantly lower for the 4<sup>th</sup> quintile. Additionally, the odds of women having quit smoking were significantly lower (0.50) for those in the lowest income quintile relative to those in the highest income quintile. Men who were unemployed and looking for paid work (odds ratio of 0.22) had significantly lower odds of having quit smoking than those in paid employment, self-employed or on government training. Unemployed women also had significantly lower odds (0.40), although the overall association between economic status and having quit smoking was not significant.

Women with no qualifications (odds ratio of 0.48), with school qualifications below standard grade (0.47), or with standard grade or equivalent qualifications (0.51) all had decreased odds of having quit smoking, compared with those with a university degree or equivalent / higher. Men with no qualifications (0.54) or with school qualifications below standard grade (0.45) also had lower odds, although the overall association for men between education and having successfully quit was not significant.

**Table 3.9**

## References and notes

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- <sup>3</sup> World Health Organization. WHO report on the global tobacco epidemic, 2013: Enforcing bans on tobacco advertising, promotion and sponsorship. See [apps.who.int/iris/bitstream/10665/85381/1/WHO\\_NMH\\_PND\\_13.2\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/85381/1/WHO_NMH_PND_13.2_eng.pdf?ua=1)
- <sup>4</sup> ScotPHO Smoking Ready Reckoner – 2011 Edition. See: [www.scotpho.org.uk/publications/reports-and-papers/868-smoking-ready-reckoner](http://www.scotpho.org.uk/publications/reports-and-papers/868-smoking-ready-reckoner).
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- <sup>8</sup> See [www.healthscotland.com/uploads/documents/19844-PlanningAndProvidingSpecialistSmokingCessationServices.pdf](http://www.healthscotland.com/uploads/documents/19844-PlanningAndProvidingSpecialistSmokingCessationServices.pdf)
- <sup>9</sup> See: [www.isdscotland.org/Health-Topics/Quality-Indicators/HEAT/](http://www.isdscotland.org/Health-Topics/Quality-Indicators/HEAT/)
- <sup>10</sup> See: [www.nhsinform.co.uk/~media/nhs24/aboutus/nhs%2024%20board/local%20delivery%20plan/2015-16/nhs%2024%20%20local%20delivery%20plan%2015-16%20pdf.ashx](http://www.nhsinform.co.uk/~media/nhs24/aboutus/nhs%2024%20board/local%20delivery%20plan/2015-16/nhs%2024%20%20local%20delivery%20plan%2015-16%20pdf.ashx)
- <sup>11</sup> See: [www.gov.scot/About/Performance/scotPerforms/indicator/smoking](http://www.gov.scot/About/Performance/scotPerforms/indicator/smoking)
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**Table 3.1 Cigarette smoking status, 1995 to 2014**

*Aged 16 and over*

*1995 to 2014*

<b>Cigarette smoking status</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%	%
<b>Men</b>										
<b>Current cigarette smoker<sup>a</sup></b>										
16-64	34	36	32	29	28	29	27	28	25	25
16+	n/a	n/a	29	27	25	26	24	25	23	23
<b>Ex-regular cigarette smoker</b>										
16-64	18	18	19	19	19	18	18	17	20	18
16+	n/a	n/a	24	24	24	24	23	23	25	23
<b>Never regular cigarette smoker / never smoked at all</b>										
16-64	49	46	49	51	53	53	55	55	55	57
16+	n/a	n/a	47	49	51	50	52	52	51	54
<b>Mean per current smoker per day</b>										
16-64	18.1	17.6	15.9	15.6	15.2	14.6	14.2	14.7	13.1	13.1
16+	n/a	n/a	15.9	15.7	15.4	14.8	14.3	14.7	13.4	13.5
<b>Standard error of the mean</b>										
16-64	0.31	0.29	0.35	0.49	0.44	0.46	0.38	0.52	0.51	0.52
16+	n/a	n/a	0.33	0.46	0.41	0.43	0.35	0.48	0.49	0.49

*Continued...*

**Table 3.1 - Continued**

*Aged 16 and over*

*1995 to 2014*

<b>Cigarette smoking status</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%	%
<b>Women</b>										
<b>Current cigarette smoker<sup>a</sup></b>										
16-64	36	33	31	28	27	28	26	26	22	23
16+	n/a	n/a	28	25	25	25	22	24	20	21
<b>Ex-regular cigarette smoker</b>										
16-64	16	16	17	19	17	19	17	18	21	19
16+	n/a	n/a	20	22	20	21	20	21	23	23
<b>Never regular cigarette smoker / never smoked at all</b>										
16-64	49	51	52	53	56	54	58	56	57	57
16+	n/a	n/a	53	53	55	54	57	55	57	56
<b>Mean per current smoker per day</b>										
16-64	15.4	15.2	14.8	13.6	13.5	13.3	13.2	12.3	12.2	13.1
16+	n/a	n/a	14.7	13.7	13.4	13.1	13.3	12.4	12.4	13.0
<b>Standard error of the mean</b>										
16-64	0.21	0.24	0.29	0.33	0.30	0.29	0.33	0.43	0.43	0.43
16+	n/a	n/a	0.27	0.31	0.27	0.27	0.30	0.40	0.40	0.40

*Continued...*

**Table 3.1 - Continued**

*Aged 16 and over*

*1995 to 2014*

<b>Cigarette smoking status</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%	%
<b>All adults</b>										
<b>Current cigarette smoker<sup>a</sup></b>										
16-64	35	35	31	29	28	28	26	27	24	24
16+	n/a	n/a	28	26	25	25	23	25	21	22
<b>Ex-regular cigarette smoker</b>										
16-64	17	17	18	19	18	18	17	17	20	19
16+	n/a	n/a	22	23	22	23	22	22	24	23
<b>Never regular cigarette smoker / never smoked at all</b>										
16-64	49	48	51	52	54	54	57	55	56	57
16+	n/a	n/a	50	51	53	52	55	54	54	55
<b>Mean per current smoker per day</b>										
16-64	16.7	16.4	15.3	14.6	14.3	13.9	13.7	13.5	12.7	13.1
16+	n/a	n/a	15.3	14.7	14.4	13.9	13.8	13.5	13.0	13.2
<b>Standard error of the mean</b>										
16-64	0.19	0.19	0.26	0.31	0.29	0.28	0.28	0.36	0.35	0.37
16+	n/a	n/a	0.24	0.28	0.26	0.26	0.26	0.34	0.34	0.34

*Continued...*

**Table 3.1 - Continued**

<i>Aged 16 and over</i>		<i>1995 to 2014</i>								
<b>Cigarette smoking status</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014
<i>Bases (weighted):</i>										
<i>Men 16-64</i>	3901	3937	3156	2520	2916	2795	2926	1868	1882	1769
<i>Men 16+</i>	n/a	n/a	3819	3066	3560	3422	3581	2292	2330	2207
<i>Women 16-64</i>	3994	3966	3307	2618	3047	2925	3045	1939	1968	1869
<i>Women 16+</i>	n/a	n/a	4267	3348	3905	3750	3906	2489	2534	2416
<i>All adults 16-64</i>	7895	7903	6463	5138	5962	5720	5971	3807	3850	3639
<i>All adults 16+</i>	n/a	n/a	8086	6413	7465	7173	7487	4780	4864	4623
<i>Bases (unweighted):</i>										
<i>Men 16-64</i>	3523	3356	2749	2072	2387	2273	2409	1510	1596	1469
<i>Men 16+</i>	n/a	n/a	3582	2829	3265	3092	3263	2119	2131	2057
<i>Women 16-64</i>	4406	4194	3442	2679	3198	3067	3162	1963	2068	1853
<i>Women 16+</i>	n/a	n/a	4514	3600	4227	4109	4243	2677	2746	2585
<i>All adults 16-64</i>	7929	7550	6191	4751	5585	5340	5571	3473	3664	3322
<i>All adults 16+</i>	n/a	n/a	8096	6429	7492	7201	7506	4796	4877	4642

a Current cigarette smoker excludes those who reported only smoking cigars or pipes

**Table 3.2 Cigarette smoking status, 2014, by age and sex**

*Aged 16 and over*

2014

Cigarette smoking status	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Current cigarette smoker <sup>a</sup>	21	28	22	26	26	18	9	23
Ex-regular cigarette smoker	6	17	19	20	26	40	53	23
Never regular cigarette smoker / never smoked at all	73	55	60	54	48	42	38	54
Mean per current smoker per day	[11.0]	10.3	11.7	15.4	16.1	16.3	*	13.5
Standard error of the mean	[1.56]	0.86	0.87	0.85	1.18	1.29	*	0.49
<b>Women</b>								
Current cigarette smoker <sup>a</sup>	20	24	26	26	20	15	11	21
Ex-regular cigarette smoker	8	14	22	23	26	39	33	23
Never regular cigarette smoker / never smoked at all	71	62	52	50	54	46	57	56
Mean per current smoker per day	10.7	10.4	12.3	15.7	15.2	13.8	[10.4]	13.0
Standard error of the mean	0.98	0.70	0.89	0.90	1.01	1.31	[1.17]	0.40
<b>All adults</b>								
Current cigarette smoker <sup>a</sup>	20	26	24	26	23	16	10	22
Ex-regular cigarette smoker	7	15	20	22	26	39	41	23
Never regular cigarette smoker / never smoked at all	72	59	56	52	51	44	49	55
Mean per current smoker per day	10.8	10.3	12.0	15.6	15.7	15.0	[11.7]	13.2
Standard error of the mean	0.97	0.60	0.64	0.67	0.83	0.95	[1.07]	0.34

*Continued...*



**Table 3.2 - Continued**

*Aged 16 and over*

2014

<b>Cigarette smoking status</b>	<b>Age</b>							<b>Total</b>
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<i>Bases (weighted):</i>								
<i>Men</i>	294	356	357	416	347	264	173	2207
<i>Male smokers</i>	59	96	75	106	89	42	14	482
<i>Women</i>	309	375	379	441	365	294	253	2416
<i>Female smokers</i>	60	90	96	115	74	43	28	505
<i>All adults</i>	603	731	736	857	712	558	426	4623
<i>All smokers</i>	119	186	171	221	163	85	41	987
<i>Bases (unweighted):</i>								
<i>Men</i>	194	250	306	361	358	361	227	2057
<i>Male smokers</i>	39	68	77	90	87	56	16	433
<i>Women</i>	227	337	421	431	437	419	313	2585
<i>Female smokers</i>	51	82	105	104	86	59	32	519
<i>All adults</i>	421	587	727	792	795	780	540	4642
<i>All smokers</i>	90	150	182	194	173	115	48	952

a Current cigarette smoker excludes those who reported only smoking cigars or pipes

**Table 3.3 Children's exposure to second-hand smoke, 2014, by age and sex**

*Aged 0 - 15*

2014

Exposure to second-hand smoke in own home	Age						Total
	0-1	2-3	4-6	7-9	10-12	13-15	
	%	%	%	%	%	%	%
<b>Boys</b>							
Whether anyone smokes in accommodation	12	17	16	17	18	21	17
Reported exposure to second-hand smoke in own home	5	10	12	12	15	18	12
<b>Girls</b>							
Whether anyone smokes in accommodation	8	18	11	20	15	21	16
Reported exposure to second-hand smoke in own home	3	8	7	10	11	17	10
<b>All children</b>							
Whether anyone smokes in accommodation	10	18	13	18	17	21	16
Reported exposure to second-hand smoke in own home	4	9	10	11	13	18	11
<i>Bases (weighted):</i>							
<i>Boys</i>	110	116	153	160	164	149	852
<i>Girls</i>	95	109	161	151	170	130	816
<i>All children</i>	205	225	315	311	334	278	1668
<i>Bases (unweighted):</i>							
<i>Boys</i>	112	115	155	163	153	144	842
<i>Girls</i>	95	106	170	170	157	128	826
<i>All children</i>	207	221	325	333	310	272	1668

**Table 3.4 E-cigarette use, 2014, by age and sex**

*Aged 16 and over*

2014

E-cigarette use	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Currently using	5	3	7	5	7	2	1	5
Ever previously used <sup>a</sup>	17	17	9	11	8	3	2	10
Never used	78	80	84	84	85	94	96	85
<i>Ever used<sup>b</sup></i>	22	20	16	16	15	6	4	15
<b>Women</b>								
Currently using	3	5	7	9	6	3	1	5
Ever previously used <sup>a</sup>	14	12	12	9	9	5	2	9
Never used	83	83	81	82	85	92	97	85
<i>Ever used<sup>b</sup></i>	17	17	19	18	15	8	3	15
<b>All adults</b>								
Currently using	4	4	7	7	6	3	1	5
Ever previously used <sup>a</sup>	16	14	11	10	8	4	2	10
Never used	80	81	82	83	85	93	97	85
<i>Ever used<sup>b</sup></i>	20	19	18	17	15	7	3	15
<i>Bases (weighted):</i>								
<i>Men</i>	292	356	357	416	347	264	173	2205
<i>Women</i>	305	375	379	441	365	294	253	2412
<i>All adults</i>	597	731	736	857	712	558	426	4617
<i>Bases (unweighted):</i>								
<i>Men</i>	192	250	306	361	358	361	227	2055
<i>Women</i>	224	337	421	431	437	419	313	2582
<i>All adults</i>	416	587	727	792	795	780	540	4637

a excludes those who are currently using

b includes those who are currently using

**Table 3.5 E-cigarette use, 2014, by current cigarette smoking status and sex**

*Aged 16 and over*

2014

E-cigarette use	Cigarette smoking status			Total
	Never smoked cigarettes regularly	Ex-regular smoker	Currently smokes cigarettes	
	%	%	%	%
<b>Men</b>				
Currently using	0	7	14	5
Ever previously used <sup>a</sup>	1	7	36	10
Never used	99	86	51	85
<i>Ever used<sup>b</sup></i>	<i>1</i>	<i>14</i>	<i>49</i>	<i>15</i>
<b>Women</b>				
Currently using	0	8	16	5
Ever previously used <sup>a</sup>	1	6	35	9
Never used	98	86	49	85
<i>Ever used<sup>b</sup></i>	<i>2</i>	<i>14</i>	<i>51</i>	<i>15</i>
<b>All adults</b>				
Currently using	0	7	15	5
Ever previously used <sup>a</sup>	1	7	35	10
Never used	99	86	50	85
<i>Ever used<sup>b</sup></i>	<i>1</i>	<i>14</i>	<i>50</i>	<i>15</i>
<i>Bases (weighted):</i>				
<i>Men</i>	<i>1187</i>	<i>517</i>	<i>500</i>	<i>2205</i>
<i>Women</i>	<i>1351</i>	<i>554</i>	<i>507</i>	<i>2412</i>
<i>All adults</i>	<i>2539</i>	<i>1071</i>	<i>1007</i>	<i>4617</i>
<i>Bases (unweighted):</i>				
<i>Men</i>	<i>1041</i>	<i>561</i>	<i>453</i>	<i>2055</i>
<i>Women</i>	<i>1431</i>	<i>628</i>	<i>523</i>	<i>2582</i>
<i>All adults</i>	<i>2472</i>	<i>1189</i>	<i>976</i>	<i>4637</i>

a excludes those who are currently using

b includes those who are currently using

**Table 3.6 Quit attempts by smokers, and whether would like to quit smoking, 2014, by age and sex**

*Smokers aged 18 and over<sup>a</sup>*

2014

Number of quit attempts and whether would like to quit	Age					Total
	18-34	35-44	45-54	55-64	65+	
	%	%	%	%	%	%
<b>Men</b>						
<b>Number of attempts</b>						
None	33	29	16	12	22	23
One or two	40	37	34	38	37	37
Three or more	27	34	50	50	41	39
<b>Would like to quit</b>						
Yes	58	72	66	63	48	61
No	42	28	34	37	52	39
<b>Women</b>						
<b>Number of attempts</b>						
None	25	10	13	15	24	18
One or two	40	29	41	34	33	36
Three or more	34	60	46	51	42	46
<b>Would like to quit</b>						
Yes	72	82	77	73	54	73
No	28	18	23	27	46	27
<b>All adults</b>						
<b>Number of attempts</b>						
None	29	18	15	13	23	21
One or two	40	33	37	36	35	37
Three or more	30	49	48	50	42	43
<b>Would like to quit</b>						
Yes	64	77	72	67	51	67
No	36	23	28	33	49	33
<i>Bases (weighted):</i>						
<i>Men</i>	152	77	110	91	62	491
<i>Women</i>	138	97	115	75	71	496
<i>All adults</i>	291	174	225	166	132	987
<i>Bases (unweighted):</i>						
<i>Men</i>	104	79	92	91	79	445
<i>Women</i>	125	106	104	87	92	514
<i>All adults</i>	229	185	196	178	171	959

<sup>a</sup> These questions were not asked in the self-completion for adults aged 16-17

**Table 3.7 Products to support quit attempts, 2014, by age and sex***Smokers who have attempted to quit and recent ex-smokers (<1 year) aged 18 and over<sup>a</sup>*

2014

NRT products / e-cigarettes used in past 3 months	Age			Total
	18-44	45-64	65+	
	%	%	%	%
<b>Men</b>				
Nicotine gum	16	20	11	17
Nicotine patches on skin	31	37	34	34
Nasal spray / nicotine inhaler	9	7	8	8
Lozenge / microtab	4	9	6	7
Champix / Varenicline	6	8	3	7
Zyban / Bupropion	-	4	-	2
E-cigarette	38	30	14	32
Other	5	1	2	3
Any product used	61	64	41	60
No products used	39	36	59	40
<b>Women</b>				
Nicotine gum	20	13	17	17
Nicotine patches on skin	40	38	37	39
Nasal spray / nicotine inhaler	9	10	10	10
Lozenge / microtab	5	8	8	7
Champix / Varenicline	7	7	7	7
Zyban / Bupropion	2	3	4	3
E-cigarette	33	37	17	33
Other	3	1	0	2
Any product used	66	72	58	67
No products used	34	28	42	33
<b>All adults</b>				
Nicotine gum	18	17	14	17
Nicotine patches on skin	36	38	35	36
Nasal spray / nicotine inhaler	9	8	9	9
Lozenge / microtab	5	9	7	7
Champix / Varenicline	6	8	5	7
Zyban / Bupropion	1	3	2	2
E-cigarette	35	34	16	32
Other	4	1	1	2
Any product used	64	68	50	64
No products used	36	32	50	36

*Continued...*

**Table 3.7 - Continued***Smokers who have attempted to quit and recent ex-smokers (<1 year) aged 18 and over<sup>a</sup>*

2014

<b>NRT products / e-cigarettes used in past 3 months</b>	<b>Age</b>			<b>Total</b>
	18-44	45-64	65+	
<i>Bases (weighted):</i>				
<i>Men</i>	185	191	50	425
<i>Women</i>	231	189	60	480
<i>All adults</i>	416	380	109	905
<i>Bases (unweighted):</i>				
<i>Men</i>	151	173	62	386
<i>Women</i>	223	184	80	487
<i>All adults</i>	374	357	142	873

<sup>a</sup> These questions were not asked in the self-completion for adults aged 16-17

**Table 3.8 Smoking cessation support, 2014, by age and sex**

*Smokers who have attempted to quit and recent ex-smokers (<1 year) aged 18 and over<sup>a,b</sup>*

2014

NRT use	Age			Total
	18-44	45-64	65+	
	%	%	%	%
<b>Men</b>				
<b>Smoking cessation support</b>				
Pharmacy	21	18	*	19
GP practice nurse	-	4	*	2
GP	8	6	*	7
Specialist cessation advisor	7	9	*	9
Other	-	2	*	2
Any cessation support	32	34	*	34
No cessation support	68	66	*	66
<b>Women</b>				
<b>Smoking cessation support</b>				
Pharmacy	22	11	[18]	17
GP practice nurse	4	8	[9]	6
GP	6	5	[13]	6
Specialist cessation advisor	7	10	[13]	9
Other	1	5	[1]	3
Any cessation support	36	36	[54]	38
No cessation support	64	64	[46]	62
<b>All adults</b>				
<b>Smoking cessation support</b>				
Pharmacy	22	15	16	18
GP practice nurse	2	6	6	4
GP	7	6	13	7
Specialist cessation advisor	7	10	14	9
Other	0	4	4	2
Any cessation support	34	35	51	36
No cessation support	66	65	49	64

*Continued...*



**Table 3.8 - Continued**

Smokers who have attempted to quit and recent  
ex-smokers (<1 year) aged 18 and over<sup>a,b</sup>

2014

NRT use	Age			Total
	18-44	45-64	65+	
<i>Bases (weighted):</i>				
<i>Men</i>	112	122	20	255
<i>Women</i>	152	137	34	323
<i>All adults</i>	265	259	55	578
<i>Bases (unweighted):</i>				
<i>Men</i>	99	107	28	234
<i>Women</i>	154	131	47	332
<i>All adults</i>	253	238	75	566

a These questions were not asked in the self-completion for adults aged 16-17

b Asked of those who had used NRT or other product in the previous 3 months  
as part of their most recent attempt to quit smoking

**Table 3.9 Estimated odds ratios for quitting smoking, 2014**

*Former and current smokers aged 16 and over*

2014

Independent variables <sup>a</sup>	Men			Women		
	Base (weighted)	Odds ratio	95% CI <sup>a</sup>	Base (weighted)	Odds ratio	95% CI <sup>a</sup>
	1017			1063		
<b>Age</b>		(p<0.001)			(p<0.001)	
16-34	239	1.00		229	1.00	
35-44	144	1.89	0.99 , 3.61	180	1.17	0.70 , 1.95
45-54	192	1.80	0.96 , 3.35	219	1.23	0.74 , 2.03
55-64	182	2.60	1.35 , 4.99	168	1.77	1.03 , 3.03
65-74	152	7.32	3.31 , 16.16	157	5.07	2.43 , 10.54
75+	108	25.63	9.68 , 67.88	110	6.56	2.80 , 15.37
<b>Equivalised Income</b>		(p=0.015)			(p=0.124)	
1st (highest)	152	1.00		143	1.00	
2nd	180	0.91	0.48 , 1.73	152	0.99	0.54 , 1.83
3rd	189	1.29	0.70 , 2.38	168	0.94	0.52 , 1.70
4th	149	0.46	0.24 , 0.88	216	0.84	0.45 , 1.55
5th (lowest)	184	0.55	0.26 , 1.17	221	0.50	0.27 , 0.92
Missing	163	1.03	0.55 , 1.95	164	0.67	0.35 , 1.26
<b>SIMD</b>		(p=0.027)			(p=0.036)	
1 (least deprived)	166	1.00		162	1.00	
2	189	1.31	0.74 , 2.34	203	0.92	0.51 , 1.67
3	193	1.15	0.65 , 2.04	187	0.89	0.52 , 1.52
4	239	1.16	0.64 , 2.12	269	0.63	0.37 , 1.07
5 (Most deprived)	231	0.59	0.32 , 1.09	243	0.50	0.28 , 0.90
<b>Economic status<sup>b</sup></b>		(p=0.003)			(p=0.190)	
In employment	545	1.00		504	1.00	
In education	38	1.72	0.58 , 5.14	32	0.97	0.38 , 2.47
Unemployed	74	0.22	0.09 , 0.56	46	0.40	0.17 , 0.92
Other	361	0.64	0.38 , 1.08	481	0.87	0.59 , 1.30

*Continued...*

**Table 3.9 - Continued**

Former and current smokers aged 16 and over

2014

Independent variables <sup>a</sup>	Men			Women		
	Base (weighted)	Odds ratio	95% CI <sup>a</sup>	Base (weighted)	Odds ratio	95% CI <sup>a</sup>
	1017			1063		
<b>Highest educational qualification</b>		(p=0.103)			(p=0.031)	
Degree or higher	241	1.00		231	1.00	
HNC/D or equivalent	105	1.00	0.53 , 1.86	124	0.84	0.50 , 1.42
Higher grade or equivalent	175	1.18	0.63 , 2.21	160	0.86	0.48 , 1.56
Standard grade or equivalent	214	0.74	0.45 , 1.24	229	0.51	0.32 , 0.82
Other school level	51	0.45	0.21 , 0.99	73	0.47	0.24 , 0.95
No qualifications	232	0.54	0.31 , 0.92	247	0.48	0.29 , 0.81
<b>Marital status</b>		(p<0.001)			(p=0.006)	
Married / civil partnership	489	1.00		444	1.00	
Living as married	151	0.58	0.34 , 0.99	160	0.67	0.41 , 1.11
Single	217	0.51	0.29 , 0.90	193	0.40	0.25 , 0.66
Separated from married or civil partner / divorced / dissolved civil partnership	100	0.29	0.16 , 0.51	145	0.60	0.39 , 0.92
Widowed / surviving civil partner	59	0.60	0.29 , 1.27	121	0.69	0.39 , 1.21
<b>Estimated usual weekly alcohol consumption level<sup>c</sup></b>		(p=0.046)			(p=0.274)	
Moderate / non-drinker	724	1.00		844	1.00	
Hazardous / Harmful	293	0.66	0.44 , 0.99	219	0.79	0.51 , 1.21

Continued...

**Table 3.9 - Continued**

Former and current smokers aged 16 and over

2014

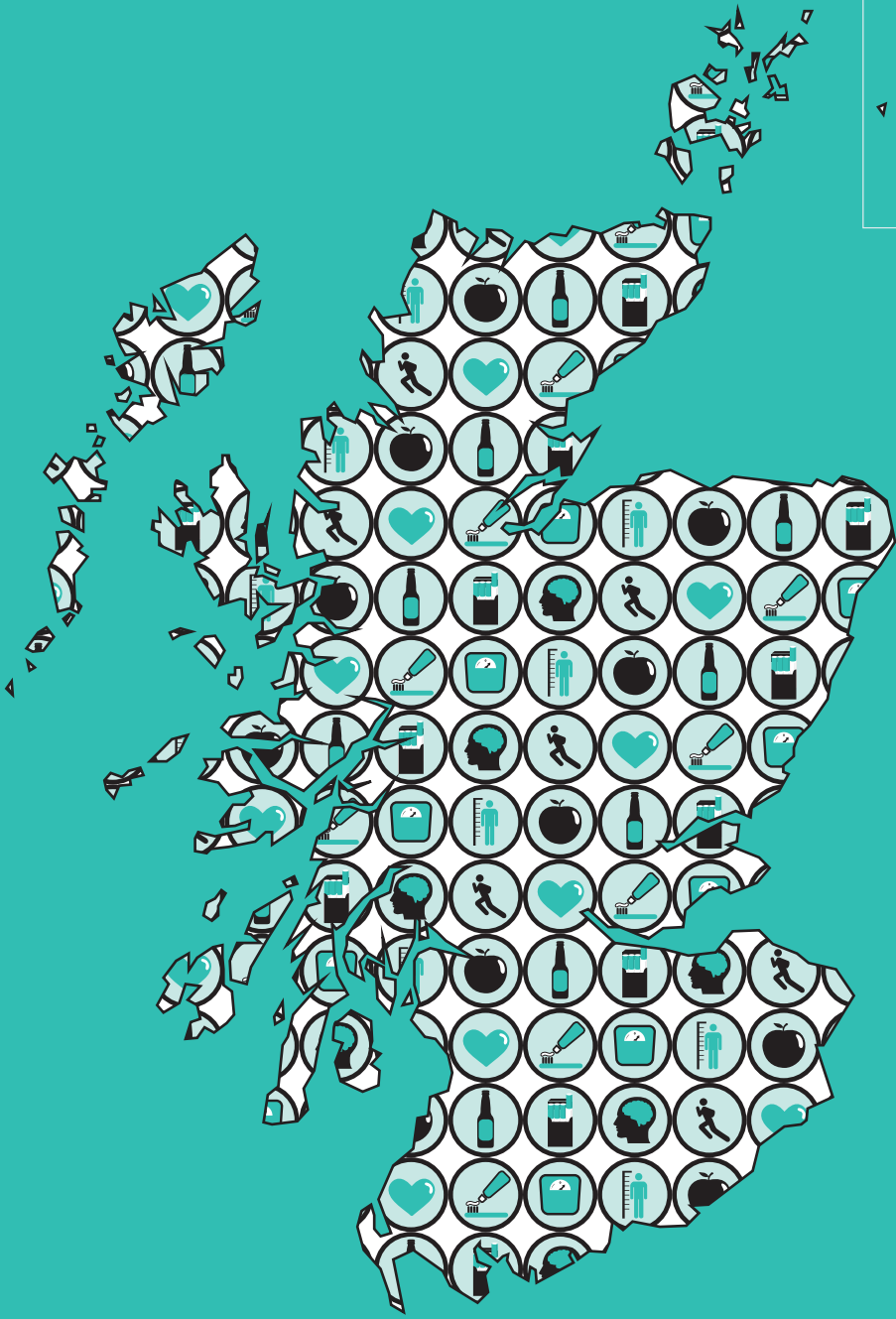
Independent variables <sup>a</sup>	Men			Women		
	Base (weighted)	Odds ratio	95% CI <sup>a</sup>	Base (weighted)	Odds ratio	95% CI <sup>a</sup>
	1017			1063		
<b>BMI (kg / m<sup>2</sup>)<sup>d</sup></b>						
			(p=0.018)			(p=0.004)
Less than 25	258	1.00		306	1.00	
25 to less than 30	380	1.13	0.72 , 1.79	270	1.23	0.84 , 1.80
30 and over	229	2.14	1.28 , 3.60	294	1.82	1.21 , 2.73
Missing	149	1.04	0.54 , 2.00	193	0.91	0.58 , 1.43

a Confidence interval

b In employment includes those in full- or part-time work, those who are self-employed, and those on a government training scheme; unemployed refers to those who are unemployed and looking for work; other includes others who are not in the labour force, such as those who are retired, looking after the home or family, and those who are unable to work because of a long-term illness or disability

c Moderate / non-drinker up to 21 units for men / 14 units for women; hazardous / harmful: more than 21 units for men / 14 units for women

d 25 and over = overweight / obese / morbidly obese; 30 and over is obese / morbidly obese



# Chapter 4

## Diet

### SUMMARY

#### **Fruit and vegetable consumption in adults**

- Adults consumed an average of 3.1 portions of fruit and vegetables a day in 2014, the same amount as in 2003.
- Only one in five adults (20%) met the 5-a-day recommendations, while one in ten (10%) did not consume any fruit or vegetables.
- Similar amounts of fruit (1.5 portions) and vegetables (1.4 portions) were consumed per day, plus 0.3 portions a day of fruit juice.
- Women consumed slightly more fruit and vegetables (including fruit juice) than men (3.2 portions a day on average, compared with 3.0 portions for men).
- Younger adults tended to eat less fruit than older people, but similar amounts of vegetables.

#### **Fruit and vegetable consumption in children**

- Consumption of fruit and vegetables by children has changed little since 2003.
- In 2014, 14% of children aged 2-15 met the 5-a-day recommendations.
- Children aged 2-15 ate an average of 2.8 portions of fruit and vegetables a day, comprising 1.5 portions of fruit, 0.9 of vegetables, and 0.4 of fruit juice.
- The total number of portions of fruit and vegetables (including fruit juice) consumed did not vary by either age or sex, although younger children did eat more fruit and fewer vegetables than older children. Those aged 2-7 ate an average of 1.7 portions of fruit and 0.8 portions of vegetables, while those aged 11-15 ate 1.2 portions of fruit and 1.0-1.1 portions of vegetables.

#### **Consumption of other foods in adults**

- Adults' consumption of other foods, including meat and fish, milk, foods rich in starch and fibre, and foods high in sugar and / or fat, showed very little change between 2008 and 2014, with most measures remaining static.
- Red meat was the only food showing change from 2008 to 2014, where there was a small decrease in the proportion of adults consuming this more than once a week (61% in 2008, 56% in 2014).
- In 2014, a higher proportion of women than men ate oily fish (27% women, 23% men) and tuna fish (30% women, 25% men) at least once a week.
- More men than women ate red meat (61% men, 51% women) or processed meat (37% men, 20% women) twice or more per week.
- Men tended to eat more foods high in fat and / or sugar than women did, particularly chips (37% of men and 25% of women ate chips at least twice a week).

## 4.1 INTRODUCTION

### 4.1.1 Diet and health

An individual's diet is one of the contributory factors to health over which they have a degree of control. The risk of many non-communicable diseases, including cardiovascular disease, type 2 diabetes and certain types of cancer is affected by the foods people consume. Estimates from international comparisons have suggested that around 30% of cases of cancer<sup>1</sup> and cardiovascular disease<sup>2</sup> worldwide could be prevented by changes in diet, both through improvements in nutritional content and reductions in body mass.<sup>3</sup>

Early research on diet and chronic diseases focussed on the possible role of fat, particularly saturated fat, and fruit and vegetable intake. Some recent studies have questioned the consideration of fruit and vegetables together, and shown, for example, that vegetable consumption is more important than fruit consumption in explaining reduced risks of certain types of breast cancer,<sup>4</sup> stroke,<sup>5</sup> and diabetes,<sup>6</sup> while reduced risk of coronary heart disease in women,<sup>5</sup> and oesophageal and stomach cancers<sup>7</sup> are better explained by levels of fruit consumption.

Other aspects of diet, including the potentially positive effects of fibre and wholegrains<sup>8</sup>, oily fish intake<sup>9,10</sup> and antioxidant vitamins<sup>11</sup> have been studied in relation to cardiovascular disease and cognitive decline in later life. Folates have been shown to have a role in the prevention of neural tube defects;<sup>12</sup> vitamin D and calcium are determinants of bone health;<sup>13</sup> sugar intake is associated with dental decay;<sup>14</sup> and salt intake is linked to the development of hypertension.<sup>15</sup> A link between consumption of red and processed meats in bowel disease has been proposed,<sup>16,17</sup> while it has been suggested that added sugars, particularly those consumed in drinks, may have a particular role in the development of obesity and type 2 diabetes.<sup>18</sup>

Given the broad range of health conditions which may be influenced by diet it is difficult to estimate the economic and social costs of poor eating habits, but some examples can highlight the potential benefits of improving the diet of the population. Treatment of cardiovascular disease, including hypertension, and type 2 diabetes, represent significant costs to the NHS, as do treatment of dental decay in children and bone disease in adults. One study looking at the economic costs of risk factors for chronic disease puts poor diet as the largest burden on the NHS, ahead of overweight and obesity, smoking, alcohol consumption, and physical inactivity.<sup>19</sup>

Surveys of household food intake and of children's diet in Scotland have highlighted socio-economic inequalities in consumption of a wide range of food groups such as fruit and vegetables and soft drinks though differences in fat and sugar content of the diet between those in more versus less deprived areas are not marked.<sup>20,21,22</sup>

#### 4.1.2 Policy background

The most widely promoted diet and health message has been the World Health Organisation (WHO) '5-a-day' advice for adults to consume at least five varied 80g portions of fruit and vegetables per day. In Scotland the poor record on diet was first highlighted in 1993 with the publication of the Scottish Diet report and associated **Action Plan**.<sup>23,24</sup> The **Action Plan** included specific **Scottish Dietary Targets** for eight nutrients and food groups which would constitute a balanced diet. These were replaced in 2013 by the **Scottish Dietary Goals**.<sup>25</sup> Goals include the 5-a-day recommendation and a target to reduce salt intake from around 9g to 6g per day for adults. There is a goal in place to reduce average calorie intake by 120 kcal per day and average intake of red meat to 70g per day as well as advice to limit fat and sugar intake and increase consumption of fibre and oil-rich fish. More recently the WHO and Public Health England have proposed that added sugars should be reduced by more than half, to provide 5% of energy in the diet.<sup>26,27</sup>

To tackle the poor diet in children in Scotland, the main target has been food in schools with **Healthy Eating in Schools** guidance on implementing the **Schools Food and Nutrition** legislation which prohibits the sale of foods and drinks high in fat, sugar and / or salt in schools.<sup>28</sup> The foods available to children who leave school at lunchtimes have also been considered in the '**Beyond the School Gate**' advice to caterers in the vicinity of schools.<sup>29</sup>

The Scottish Government has also developed the **Better Eating Better Learning** guidance. This has provided refreshed guidance to a range of stakeholders (schools, local authorities, caterers, procurement departments, parents, children and young people) to support them to work in partnership to make further improvements in school food and food education.<sup>30</sup>

The Scottish Government has also outlined specific measures which could be taken by retailers, manufacturers and caterers which would affect the wider population in its '**Supporting Healthy Choices**' framework.<sup>31</sup> This is a voluntary framework based on four core principles. These are to:

- Put the health of children first in food-related decisions
- Rebalance promotional activities
- Support consumers and communities
- Formulate healthier products

The Scottish Government is also funding a number of programmes aimed at encouraging people make healthier choices in the way they shop, cook and eat, through its '**Eat Better Feel Better**' campaign.<sup>32</sup>

A key part of the Health Promoting Health Service is a focus towards the provision of healthier food choices in hospitals. All NHS-run restaurants for staff, visitors and patients now have the Healthyliving



Award Plus as a mandatory requirement with all voluntary sector establishments holding the award. While maintaining this standard along with its expansion into the private sector, attention is shifting to the adoption of a comparable Healthcare Retail Standard in 2015/2016.

#### **4.1.3 Reporting on diet in the Scottish Health Survey (SHeS)**

This chapter provides information on fruit and vegetable consumption in adults and children from 2003-2014, along with data on consumption of selected foods and drinks by adults over the same period. Further tables on the trend in fruit and vegetable consumption, and in high-sugar processed foods, by area deprivation (SIMD) over time are included in Chapter 9, along with results for other eating habits for 2014, by SIMD. Supplementary tables on diet, including analysis by socio-economic classification, household income and area deprivation are also published on the Scottish Health Survey website.<sup>33</sup>

## **4.2 METHODS AND DEFINITIONS**

### **4.2.1 Measuring fruit and vegetable consumption**

The module of questions on fruit and vegetable consumption was designed with the aim of providing sufficient detail to monitor adherence to the 5-a-day recommendation. These questions have been asked of all adults (aged 16 and over) participating in the survey since 2003 and of children aged 2 to 15 since 2008.

To establish the total number of portions consumed in the 24 hours preceding the interview, the module includes questions on consumption of the following food types: vegetables (fresh, frozen or canned); salads; pulses; vegetables in composites (e.g. vegetable chilli); fruit (fresh, frozen or canned); dried fruit; fruit in composites (e.g. apple pie); and fresh fruit juice. A portion is defined as the conventional 80g of a fruit or vegetable. Since 80g is difficult to visualise, a 'portion' was described using more everyday terms, such as tablespoons, cereal bowls and slices. Examples are given in the questionnaire to aid the recall process, for instance, tablespoons of vegetables, cereal bowls full of salad, pieces of medium sized fruit (e.g. apples) or handfuls of small fruits (e.g. raspberries). In spite of this, there may be some variation between participants' interpretation of a portion. These everyday measures were converted back to 80g portions prior to analysis. The following table shows the definitions of the portion sizes used for each food item included in the survey:

<b>Food item</b>	<b>Portion size</b>
Vegetables (fresh, frozen or canned)	3 tablespoons
Pulses (dried)	3 tablespoons
Salad	1 cereal bowlful
Vegetables in composites, such as vegetable chilli	3 tablespoons
Very large fruit, such as melon	1 average slice
Large fruit, such as grapefruit	Half a fruit
Medium fruit, such as apples	1 fruit
Small fruit, such as plums	2 fruits
Very small fruit, such as blackberries	2 average handfuls
Dried fruit	1 tablespoon
Fruit in composites, such as stewed fruit in apple pie	3 tablespoons
Frozen fruit / canned fruit	3 tablespoons
Fruit juice	1 small glass (150 ml)

Since the 5-a-day policy stresses both volume and variety, the number of portions of fruit juice, pulses and dried fruit is capped so that no more than one portion can contribute to the total number of portions consumed. Interviewers record full or half portions, but nothing smaller.

#### **4.2.2 Measuring consumption of other foods and drinks**

The eating habits module of the interview was developed from the Dietary Instrument of Nutrition Education (DINE) questionnaire and is similar to that used in the Health Survey for England (HSE). The DINE questionnaire was developed by the Imperial Cancer Research Fund's General Practice Research Group to assess usual intake of a wide range of nutrients, including protein, starch, fat and fibre.<sup>34</sup> The module asks about frequency of consumption for categories of food, but does not ask about either the amount consumed or specific types of food. It cannot be used to estimate daily nutrient intake but can reflect differences in consumption of the specified foods between population and sub-groups or within a population over time. These questions are asked of all children aged 2-15 annually, and a sub-sample of adults biennially.

### **4.3 FRUIT AND VEGETABLE CONSUMPTION**

#### **4.3.1 Trends in adult fruit and vegetable consumption since 2003**

Fruit and vegetable consumption by adults has changed very little since 2003. The mean and median number of portions eaten per day were the same in 2014 (mean 3.1, median 2.7) as they were in 2003.<sup>35</sup> In the years in between, these figures varied only by small amounts.

The proportion of adults meeting the 5-a-day recommendations has also remained fairly constant. In 2014, 20% of adults met or exceeded the recommended five portions, down slightly from a high of 23% in 2009, but at a similar level to the 21% in 2003.

The proportion of adults eating no fruit and vegetables has remained at between 9% and 10% each year since 2003 (10% in 2014).

Men and women's separate consumption patterns also remained fairly constant over time. In every survey year, since 2003, women's mean fruit and vegetable consumption was slightly higher than men's (a difference of between 0.1 and 0.3 portions). In 2014, women consumed a mean of 3.2 portions, while men consumed 3.0.

Similar small differences between men and women could be observed in the proportion eating no fruit and vegetables (9% of women and 12% of men in 2014). The proportion of men eating five or more portions was identical in 2008 and 2014 (20%), whereas the proportion fell among women from 24% in 2008 to 20% in 2014. **Table 4.1**

#### **4.3.2 Adult fruit and vegetable consumption, by age and sex**

Figure 4A shows that the relationship between consumption of fruit and vegetables and age was not linear. As in previous years, in 2014 it was lowest among those aged 16-24, who consumed a mean of 2.8 portions a day, and highest among those aged 65-74 (a mean of 3.4 portions).

Variations by age in 2014, with the exception of the oldest age group, appear largely to be a result of differences in the amount of fruit consumed. Overall, adults ate similar amounts of fruit (1.5 mean portions) and vegetables (1.4 mean portions), plus 0.3 portions of fruit juice. Vegetable consumption was at a similar level for all age groups under 75 (between 1.3 and 1.5 mean portions, compared with 1.1 for those aged 75 and over); and fruit juice did not contribute greatly to overall consumption for any age group (between 0.2 and 0.4 portions). However, fruit consumption varied to a much greater extent, from a mean of 1.1 portions for those aged 16-24 to 1.8 portions for those aged 65-74.

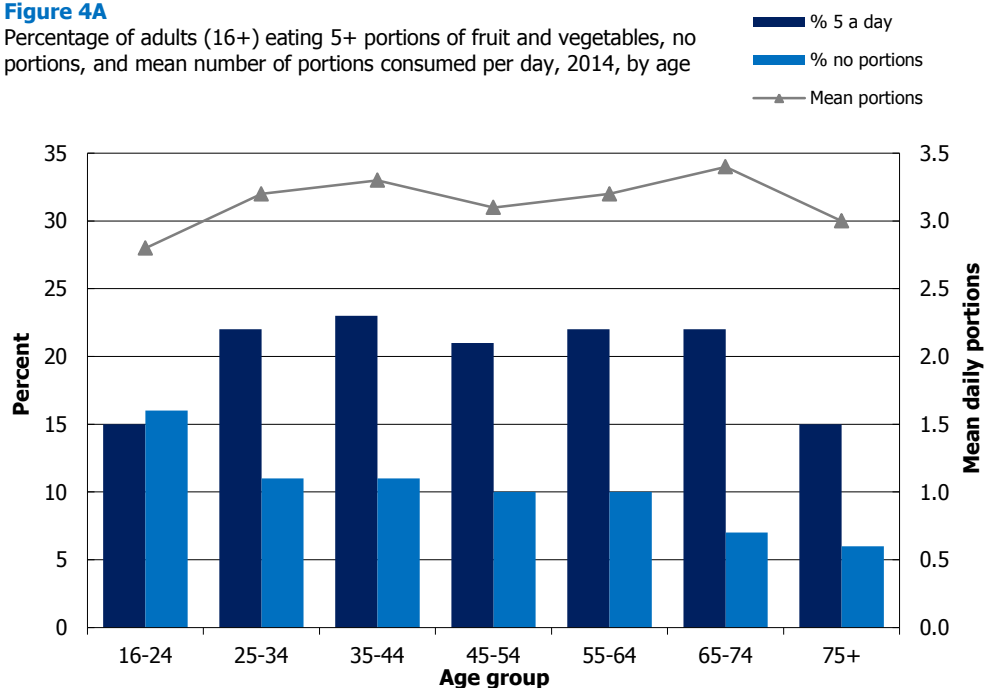
Patterns of consumption by age for fruit and vegetables, and for fruit, vegetables and fruit juice separately, were similar for both men and women.

The youngest age group (16-24) was the most likely to have eaten no fruit or vegetables (16%, compared with 10-11% of those aged 25-64 and 6-7% of those aged 65 and over).

The youngest and the oldest age groups were also the least likely to have eaten the recommended five portions or more (15% of those aged 16-24 and of those aged 75 and over, compared with 21-23% of those aged 25-74). **Figure 4A, Table 4.2**

**Figure 4A**

Percentage of adults (16+) eating 5+ portions of fruit and vegetables, no portions, and mean number of portions consumed per day, 2014, by age



### 4.3.3 Trends in child fruit and vegetable consumption since 2003

Levels of consumption of fruit and vegetables by children, like those for adults, have changed little in recent years. Trends are presented for children aged 2-15, since 2008, and 5-15 since 2003. In every year since 2008, mean consumption in the 2-15 age group was no more than 0.1 portions higher than the 5-15 age group, so to avoid unnecessary repetition and allow a longer time series, only figures for those aged 5-15 are discussed in the following paragraphs.

Mean consumption has remained almost constant since 2003, at 2.6 or 2.7 portions in every year (2.7 in 2014). The proportion eating no fruit or vegetables has also remained fairly constant, between 10% and 12% each year (11% in 2014). The proportion eating the recommended five or more portions has remained between 11% and 14% each year (14% in 2014).

Patterns for boys and girls separately were similarly both fairly constant over time, with no significant differences in consumption between boys and girls. Mean consumption varied between 2.4 and 2.7 portions for boys, and between 2.6 and 2.8 portions for girls. In 2014 it was at the upper end of these ranges for both boys (2.7) and girls (2.8). **Table 4.3**

### 4.3.4 Child fruit and vegetable consumption, by age and sex

In 2014, children aged 2-15 consumed an average of 2.8 portions of fruit and vegetables, comprising 1.5 portions of fruit, 0.9 of vegetables, and 0.4 of fruit juice.

There were no significant differences by either age or sex in the mean consumption of fruit and vegetables, but there were differences by age in the consumption of the separate components in 2014. Younger

children ate more fruit: a mean of 1.7 portions a day was consumed by those aged 2-7, compared with a mean of 1.2 portions consumed by those aged 11-15. Older children tended to eat more vegetables: 1.0-1.1 portions a day for those aged 11-15, compared with 0.8 portions consumed by those aged 2-7.

Older children were more likely to consume no fruit or vegetables at all than younger children. Only 6-7% of children aged 2-7 had eaten no portions, compared with 15% of those aged 13-15.

In 2014, 14% of children aged 2-15 ate the recommended five or more portions, with no significant difference between boys and girls. However, as in Table 4.4, there were slightly different patterns by age, most notably in the higher proportion of girls aged 2-7 meeting the 5-a-day guidelines than those aged 8-15. **Table 4.4**

## 4.4 CONSUMPTION OF OTHER FOODS IN ADULTS

### 4.4.1 Meat and fish

The proportion of adults consuming red meat more than once a week has fallen since 2008, from 61% in 2008, to 56% in 2014. This fall in red meat consumption has been more pronounced among women (from 59% in 2008 to 51% in 2014) than among men (64% in 2008 and 61% in 2014).

Consumption of processed meat products, such as pies or sausages has not changed: 28% of adults ate these more than once a week in 2014, the same proportion as in 2008. A much higher proportion of men than women consumed meat products more than once a week (37% of men in 2014, compared with 20% of women).

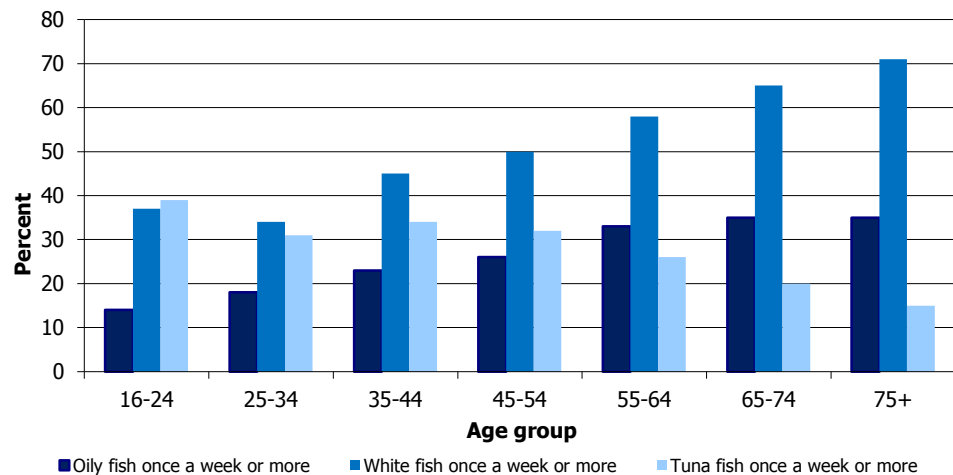
The consumption of fish has not changed significantly since 2008. In 2014, around half of adults (48%) ate white fish at least once a week, a quarter (25%) ate oily fish, such as mackerel, at least once a week, and just over a quarter (28%) ate tuna fish at least once a week, with figures in 2008 almost identical (51%, 25% and 30% respectively). A higher proportion of women than men ate oily fish (27% women, 23% men) or tuna fish (30% women, 25% men) at least once a week. **Table 4.5**

Consumption of meat and fish also varied with age in 2012/2014. As shown in Figure 4B and 4C, older people were more likely than those in younger age groups to eat oily fish at least once a week, white fish at least once a week, and red meat more than once a week. Oily fish was eaten at least once a week by 14% of those aged 16-24, rising steadily to 33% of those aged 55-64 and 35% of those aged 65 and over. Similarly, 34-37% of those aged 16-34 ate white fish at least once a week, rising steadily to 71% of those aged 75 and over. The reverse was true for weekly (or more) tuna fish consumption and eating meat products twice weekly (or more), both of which were more common in younger people. Tuna fish consumption declined fairly steadily from

39% of those aged 16-24, to 15% of those aged 75 and over. Twice weekly (or more) consumption of meat products halved from 39% of those aged 16-24 to 19-20% of those aged 65 and over. The pattern for consumption of red meat more than once a week was not so consistent, but there was an increase from 48% of those aged 16-24 to 61% of those aged 65 and over. **Figure 4B, Figure 4C, Table 4.6**

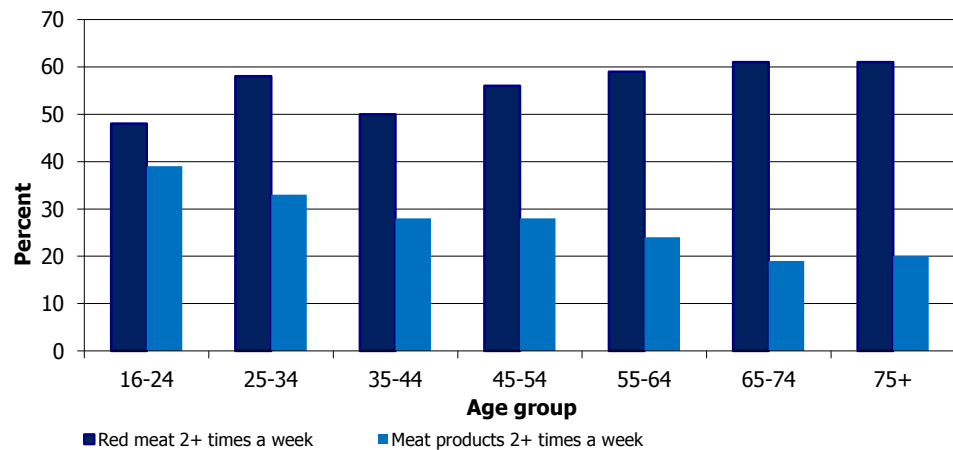
**Figure 4B**

Measures of the consumption of oily fish, white fish, tuna fish, by age, 2012/2014



**Figure 4C**

Measures of the consumption of red meat and meat products, by age, 2012/2014



#### 4.4.2 Milk

Three quarters of adults (74%) in 2014 consumed skimmed or semi-skimmed milk in drinks or on breakfast cereal, as opposed to whole milk, other types of milk or no milk. This proportion did not change between 2008 and 2014. Again, as in previous years, a higher proportion of women (77%) than men (71%) in 2014 consumed either skimmed or semi-skimmed milk. **Table 4.5**

In 2012 and 2014 (combined), 19% of adults chose whole milk most regularly, 64% chose semi-skimmed, 10% skimmed and 2% other types of milk, such as goat's or soya. Just 4% did not drink milk. Consumption of different types of milk did vary by age, but there was no clear pattern. Those aged 25-34 and those aged 75 and over were the most regular consumers of whole milk (27% and 28% respectively, compared with 16-18% in other age groups). Those aged 16-24 were the most regular consumers of semi-skimmed (71%), compared with 59-66% in other age groups. Skimmed milk was most regularly consumed by those aged between 35 and 74 (11-14%, compared with 7-8% of those aged 16-34 and 6% of those aged 75 and over).

**Table 4.7**

#### **4.4.3 Foods rich in starch and fibre**

The consumption of foods rich in starch and fibre has not changed significantly since 2008. Half of all adults (51%) ate potatoes, pasta or rice at least five times a week in 2014. Four in ten adults (40%) ate at least 2-3 slices of high fibre bread a day. Three in ten (30%) ate high fibre and low sugar cereal at least five times a week. A greater proportion of men than women ate high fibre bread every day (43%, compared with 37%).

**Table 4.5**

Consumption of high fibre, low sugar cereal increased steadily with age in 2012/2014, from being eaten at least five times a week by 21% of those aged 16-24 to 45% of those aged 75 and over. Consumption of high fibre bread increased from 31% for those aged 16-24 to 46% for those aged 55-64 but then plateaued at 46% and 45% for the older two age groups. Age-based consumption patterns for potatoes, rice and pasta were not so clear, although eating at least five portions a week was lowest for both men and women around the ages of 35-54 and highest for those aged 75 and over.

**Table 4.8**

#### **4.4.4 Foods and drinks high in fat and / or sugar**

Consumption of foods and drinks that are high in fat or sugar, or both, has not changed significantly since 2008. In 2014, 34% ate cakes at least twice a week; 31% consumed biscuits at least once a day; 31% consumed chips at least twice a week; 29% ate ice cream at least once a week; 27% of adults consumed sweets or chocolates at least once a day; 27% drank non-diet soft drinks at least once a day; and 21% consumed crisps or other savoury snacks at least once a day. For all of these measures, the figures were similar in 2008.

Figure 4D shows that, with the exception of daily sweets and chocolates consumption (which was similar for men and women), the measures of consuming high sugar / fat foods mentioned above were all higher among men than women. Differences in consumption between men and women were also particularly notable for chips (37% of men ate chips at least twice a week, compared with 25% of women).

**Figure 4D, Table 4.5**

**Figure 4D**

Measures of the consumption of foods high in fat and / or sugar, by sex, 2014

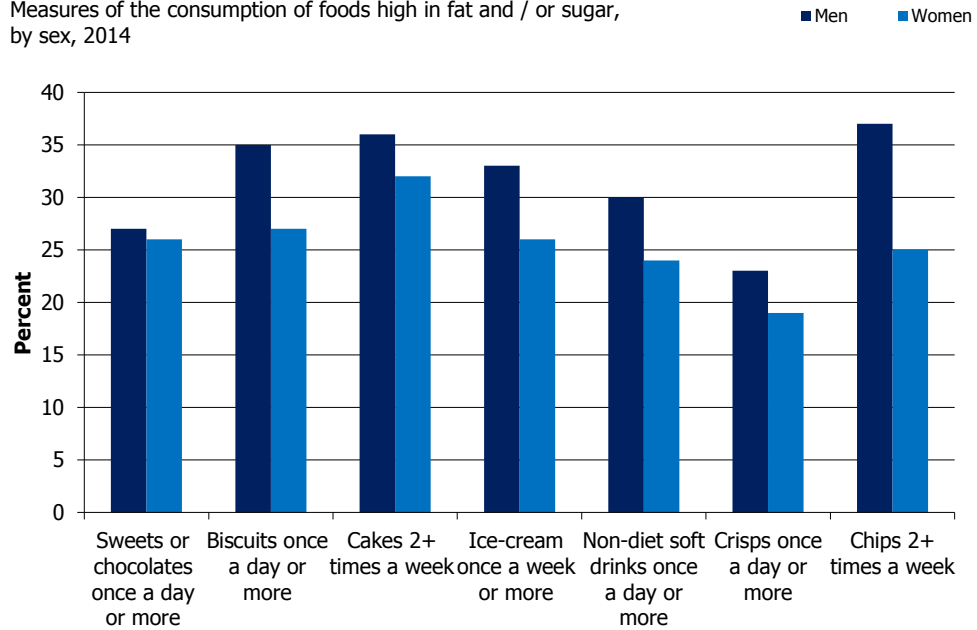
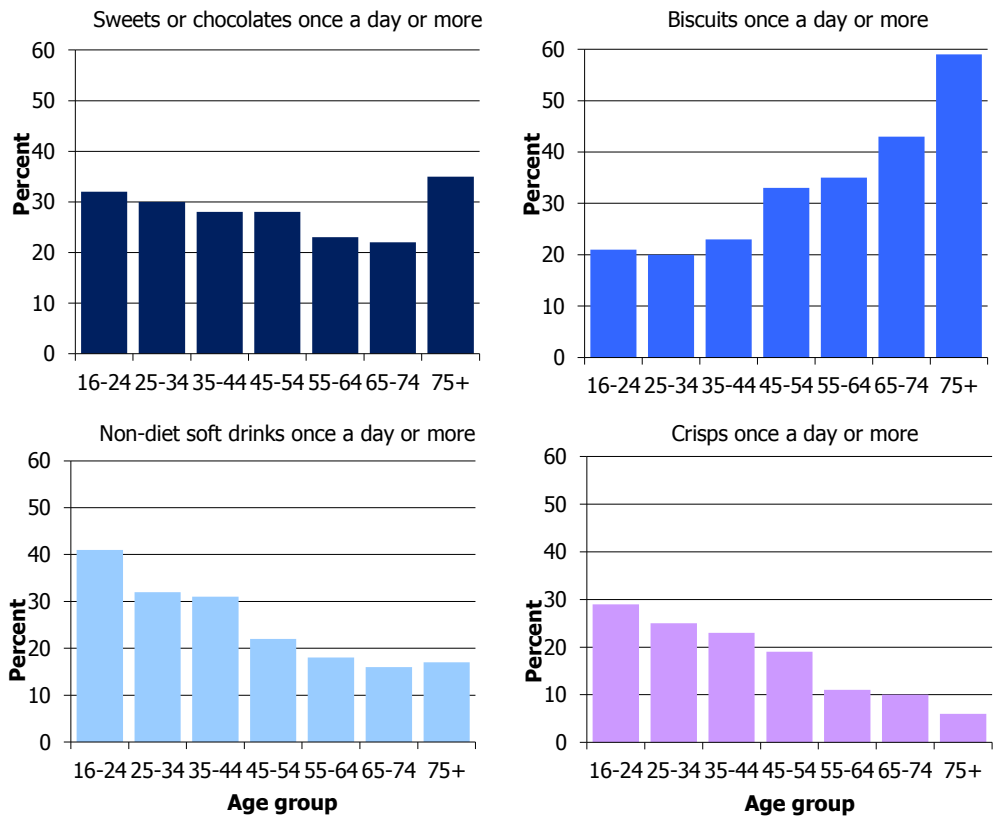


Figure 4E illustrates how consumption of sweet foods tended to be highest among the oldest age group, whereas consumption of non-diet soft drinks and savoury fatty foods decreased with age. For example, 20% of adults aged 25-34 ate biscuits every day, increasing to 59% of those aged 75 and over, and 26% of those aged 25-34 ate cakes at least twice a week, increasing to 52% of those aged 75 and over. At least weekly ice cream consumption increased from 21% of those aged 25-44 to 38% of those aged 75 and over. The pattern for daily consumption of sweets or chocolates was a little different, with a steady decrease from 32% of those aged 16-24 to 22% of those aged 65-74, and then a large jump to 35% of those aged 75 and over.

The proportion consuming non-diet soft drinks daily decreased from 41% of those aged 16-24 to 16-18% of those aged 55 and over. The proportion eating crisps daily also decreased markedly with age from 29% of those in the youngest age group to only 6% of those in the oldest group. The proportion eating chips at least twice a week showed a general downward pattern with increasing age, from 45% of those aged 16-24 to 22-28% of those aged 55 and over. **Figure 4E, Table 4.9**



**Figure 4E**  
 Measures of the consumption of sweets, biscuits, crisps and non-diet soft drinks, by age, 2012/2014



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**Table 4.1 Adult fruit and vegetable consumption, 2003 to 2014**

<i>Aged 16 and over</i>		<i>2003 to 2014</i>						
<b>Portions per day</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
None	11	10	11	12	10	11	11	12
5 portions or more	20	20	22	20	20	19	22	20
Mean	3.0	3.1	3.1	3.1	3.1	3.0	3.2	3.0
Standard error of the mean	0.06	0.07	0.05	0.06	0.05	0.08	0.07	0.07
Median	2.7	2.7	2.8	2.7	2.7	2.7	3.0	2.5
<b>Women</b>								
None	8	7	7	9	8	9	8	9
5 portions or more	22	24	25	23	23	21	22	20
Mean	3.2	3.4	3.4	3.3	3.3	3.2	3.3	3.2
Standard error of the mean	0.05	0.06	0.05	0.05	0.05	0.05	0.06	0.07
Median	3.0	3.0	3.0	3.0	3.0	2.8	3.0	3.0
<b>All adults</b>								
None	9	9	9	10	9	10	9	10
5 portions or more	21	22	23	22	22	20	22	20
Mean	3.1	3.3	3.3	3.2	3.2	3.1	3.2	3.1
Standard error of the mean	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.06
Median	2.7	3.0	3.0	3.0	3.0	2.7	3.0	2.7
<i>Bases (weighted):</i>								
<i>Men</i>	3834	3087	3594	3465	3606	2309	2343	2234
<i>Women</i>	4281	3375	3926	3775	3931	2502	2547	2420
<i>All adults</i>	8115	6462	7520	7239	7537	4811	4890	4654
<i>Bases (unweighted):</i>								
<i>Men</i>	3590	2840	3283	3112	3275	2126	2138	2066
<i>Women</i>	4526	3621	4241	4127	4260	2686	2754	2589
<i>All adults</i>	8116	6461	7524	7239	7535	4812	4892	4655

**Table 4.2 Adult fruit and vegetable consumption, 2014, by age and sex**

*Aged 16 and over*

2014

Portions per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
None	15	15	13	11	11	7	9	12
Less than 1 portion	3	4	3	6	5	4	6	4
1 portion or more but less than 2	23	17	19	18	18	15	21	19
2 portions or more but less than 3	18	21	20	22	17	19	17	20
3 portions or more but less than 4	13	14	9	12	14	19	17	13
4 portions or more but less than 5	13	9	12	11	13	14	13	12
5 portions or more	14	20	24	20	21	23	17	20
Mean portions of fruit, veg and fruit juice	2.7	2.9	3.3	3.0	3.1	3.4	3.0	3.0
Standard error of the mean	0.27	0.19	0.20	0.15	0.14	0.13	0.16	0.07
Median portions of fruit, veg and fruit juice	2.0	2.3	2.7	2.3	2.7	3.0	2.7	2.5
Mean portions of fruit	1.0	1.2	1.5	1.3	1.4	1.8	1.5	1.4
Standard error of the mean	0.13	0.12	0.13	0.10	0.09	0.09	0.11	0.04
Median portions of fruit	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0
Mean portions of vegetables	1.3	1.4	1.4	1.4	1.4	1.3	1.1	1.4
Standard error of the mean	0.25	0.10	0.10	0.08	0.08	0.07	0.07	0.05
Median portions of vegetables	1.0	1.0	1.0	1.3	1.0	1.0	1.0	1.0
Mean portions of fruit juice	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3
Standard error of the mean	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.01
Median portions of fruit juice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Continued...*

**Table 4.2 - Continued**

*Aged 16 and over*

2014

Portions per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Women</b>								
None	17	7	9	9	8	7	5	9
Less than 1 portion	2	3	3	5	7	6	4	4
1 portion or more but less than 2	23	20	19	18	15	14	19	18
2 portions or more but less than 3	18	19	15	17	20	19	23	19
3 portions or more but less than 4	16	16	18	17	14	18	22	17
4 portions or more but less than 5	10	12	13	12	13	16	14	13
5 portions or more	15	23	22	22	22	20	13	20
Mean portions of fruit, veg and fruit juice	2.9	3.4	3.4	3.2	3.3	3.4	3.0	3.2
Standard error of the mean	0.25	0.18	0.16	0.13	0.14	0.14	0.12	0.07
Median portions of fruit, veg and fruit juice	2.3	3.0	3.0	3.0	2.8	3.2	2.7	3.0
Mean portions of fruit	1.1	1.6	1.5	1.5	1.7	1.8	1.6	1.5
Standard error of the mean	0.13	0.12	0.11	0.09	0.09	0.09	0.09	0.04
Median portions of fruit	1.0	1.0	1.0	1.0	1.5	1.5	1.3	1.0
Mean portions of vegetables	1.4	1.6	1.6	1.5	1.3	1.3	1.1	1.4
Standard error of the mean	0.18	0.10	0.08	0.07	0.07	0.07	0.07	0.04
Median portions of vegetables	1.0	1.3	1.3	1.3	1.0	1.0	1.0	1.0
Mean portions of fruit juice	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.3
Standard error of the mean	0.04	0.03	0.02	0.02	0.02	0.02	0.03	0.01
Median portions of fruit juice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Continued...*

**Table 4.2 - Continued**

*Aged 16 and over*

2014

Portions per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>All adults</b>								
None	16	11	11	10	10	7	6	10
Less than 1 portion	3	4	3	5	6	5	5	4
1 portion or more but less than 2	23	19	19	18	17	14	20	18
2 portions or more but less than 3	18	20	18	19	19	19	21	19
3 portions or more but less than 4	14	15	14	15	14	19	20	15
4 portions or more but less than 5	11	11	13	12	13	15	13	12
5 portions or more	15	22	23	21	22	22	15	20
Mean portions of fruit, veg and fruit juice	2.8	3.2	3.3	3.1	3.2	3.4	3.0	3.1
Standard error of the mean	0.22	0.15	0.14	0.11	0.10	0.11	0.10	0.06
Median portions of fruit, veg and fruit juice	2.3	2.7	2.8	2.7	2.8	3.2	2.7	2.7
Mean portions of fruit	1.1	1.4	1.5	1.4	1.6	1.8	1.5	1.5
Standard error of the mean	0.09	0.09	0.09	0.08	0.07	0.07	0.07	0.03
Median portions of fruit	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0
Mean portions of vegetables	1.4	1.5	1.5	1.5	1.3	1.3	1.1	1.4
Standard error of the mean	0.18	0.08	0.07	0.06	0.06	0.06	0.06	0.04
Median portions of vegetables	1.0	1.0	1.3	1.3	1.0	1.0	1.0	1.0
Mean portions of fruit juice	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.3
Standard error of the mean	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.01
Median portions of fruit juice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Bases (weighted):</i>								
<i>Men</i>	320	356	357	417	347	264	173	2234
<i>Women</i>	314	375	379	441	365	294	252	2420
<i>All adults</i>	634	731	736	859	712	558	425	4654
<i>Bases (unweighted):</i>								
<i>Men</i>	202	250	306	362	358	361	227	2066
<i>Women</i>	232	337	421	431	437	419	312	2589
<i>All adults</i>	434	587	727	793	795	780	539	4655



**Table 4.3 Child fruit and vegetable consumption, 2003 to 2014**

<i>Aged 2-15</i>		<i>2003 to 2014</i>						
<b>Portions per day</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Boys</b>								
<b>Total 5 - 15</b>								
None	12	13	10	12	11	13	12	12
5 portions or more	12	14	13	11	12	11	13	15
Mean	2.6	2.6	2.6	2.5	2.6	2.4	2.6	2.7
Standard error of the mean	0.07	0.11	0.07	0.10	0.09	0.10	0.10	0.13
Median	2.0	2.0	2.3	2.3	2.3	2.0	2.3	2.2
<b>Total 2 - 15</b>								
None	n/a	11	9	11	10	12	11	10
5 portions or more	n/a	14	14	12	13	12	13	13
Mean	n/a	2.7	2.7	2.6	2.7	2.5	2.7	2.7
Standard error of the mean	n/a	0.09	0.06	0.09	0.08	0.09	0.09	0.11
Median	n/a	2.3	2.4	2.3	2.5	2.2	2.3	2.3
<b>Girls</b>								
<b>Total 5 - 15</b>								
None	12	9	10	11	10	11	11	10
5 portions or more	13	14	15	12	11	12	12	13
Mean	2.6	2.8	2.8	2.6	2.7	2.8	2.7	2.8
Standard error of the mean	0.07	0.10	0.09	0.09	0.09	0.10	0.09	0.11
Median	2.0	2.5	2.3	2.5	2.5	2.7	2.7	2.3
<b>Total 2 - 15</b>								
None	n/a	8	9	10	9	9	10	9
5 portions or more	n/a	13	16	13	12	14	13	14
Mean	n/a	2.9	2.9	2.7	2.8	2.9	2.8	2.8
Standard error of the mean	n/a	0.09	0.08	0.08	0.08	0.09	0.09	0.10
Median	n/a	2.7	2.7	2.5	2.5	2.7	2.7	2.7

*Continued...*

**Table 4.3 - Continued**

*Aged 2-15*

*2003 to 2014*

<b>Portions per day</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>All children</b>								
<b>Total 5 - 15</b>								
None	12	11	10	12	10	12	12	11
5 portions or more	12	14	14	12	12	11	12	14
Mean	2.6	2.7	2.7	2.6	2.6	2.6	2.7	2.7
Standard error of the mean	0.05	0.08	0.06	0.07	0.07	0.08	0.08	0.09
Median	2.0	2.3	2.3	2.3	2.3	2.3	2.5	2.3
<b>Total 2 - 15</b>								
None	n/a	10	9	11	9	11	10	10
5 portions or more	n/a	13	15	12	13	13	13	14
Mean	n/a	2.8	2.8	2.6	2.7	2.7	2.7	2.8
Standard error of the mean	n/a	0.07	0.05	0.07	0.06	0.07	0.07	0.08
Median	n/a	2.5	2.5	2.3	2.5	2.5	2.5	2.3
<i>Bases (weighted):</i>								
<i>Boys 5 - 15</i>	1225	618	910	621	686	614	637	576
<i>Boys 2 - 15</i>	n/a	791	1153	792	881	800	830	742
<i>Girls 5 - 15</i>	1166	591	867	591	652	588	607	551
<i>Girls 2 - 15</i>	n/a	736	1108	759	835	759	787	720
<i>All children 5 - 15</i>	2391	1209	1777	1212	1338	1202	1243	1128
<i>All children 2 - 15</i>	n/a	1527	2261	1551	1716	1559	1616	1461
<i>Bases (unweighted):</i>								
<i>Boys 5 - 15</i>	1152	591	923	629	649	580	608	563
<i>Boys 2 - 15</i>	n/a	764	1153	821	855	761	819	729
<i>Girls 5 - 15</i>	1170	597	837	532	619	602	554	567
<i>Girls 2 - 15</i>	n/a	752	1100	708	833	784	761	730
<i>All children 5 - 15</i>	2322	1188	1760	1161	1268	1182	1162	1130
<i>All children 2 - 15</i>	n/a	1516	2253	1529	1688	1545	1580	1459

**Table 4.4 Child fruit and vegetable consumption, 2014, by age and sex**

*Aged 2-15*

*2014*

Portions per day	Age					Total
	2-4	5-7	8-10	11-12	13-15	
	%	%	%	%	%	%
<b>Boys</b>						
None	6	7	11	11	17	10
Less than 1 portion	5	8	2	5	5	5
1 portion or more but less than 2	21	23	23	26	21	23
2 portions or more but less than 3	27	21	18	21	22	22
3 portions or more but less than 4	17	14	19	13	10	15
4 portions or more but less than 5	14	16	10	5	10	11
5 portions or more	9	11	17	17	14	13
Mean portions of fruit, veg and fruit juice	2.7	2.7	3.0	2.6	2.5	2.7
Standard error of the mean	0.13	0.16	0.24	0.26	0.25	0.11
Median portions of fruit, veg and fruit juice	2.5	2.3	2.7	2.0	2.0	2.3
Mean portions of fruit	1.6	1.5	1.6	1.1	1.0	1.4
Standard error of the mean	0.10	0.10	0.16	0.15	0.12	0.06
Median portions of fruit	1.5	1.0	1.0	1.0	1.0	1.0
Mean portions of vegetables	0.8	0.8	1.0	1.1	1.2	0.9
Standard error of the mean	0.06	0.09	0.09	0.15	0.17	0.06
Median portions of vegetables	0.7	0.7	0.7	0.7	1.0	0.7
Mean portions of fruit juice	0.3	0.4	0.4	0.5	0.3	0.4
Standard error of the mean	0.04	0.04	0.04	0.05	0.04	0.02
Median portions of fruit juice	0.0	0.0	0.0	0.0	0.0	0.0

*Continued...*

**Table 4.4 - Continued**

*Aged 2-15*

2014

Portions per day	Age					Total
	2-4	5-7	8-10	11-12	13-15	
	%	%	%	%	%	%
<b>Girls</b>						
None	7	6	11	10	12	9
Less than 1 portion	4	3	3	4	4	4
1 portion or more but less than 2	19	23	18	20	28	21
2 portions or more but less than 3	20	17	29	23	21	22
3 portions or more but less than 4	20	24	19	19	11	19
4 portions or more but less than 5	16	5	13	13	9	12
5 portions or more	15	21	7	12	13	14
Mean portions of fruit, veg and fruit juice	3.0	3.0	2.6	2.8	2.6	2.8
Standard error of the mean	0.16	0.19	0.15	0.20	0.25	0.10
Median portions of fruit, veg and fruit juice	3.0	3.0	2.3	2.7	2.0	2.7
Mean portions of fruit	1.8	1.9	1.3	1.3	1.4	1.5
Standard error of the mean	0.13	0.15	0.11	0.13	0.17	0.08
Median portions of fruit	1.5	2.0	1.0	1.0	1.0	1.0
Mean portions of vegetables	0.8	0.7	0.8	1.0	0.8	0.8
Standard error of the mean	0.08	0.06	0.07	0.10	0.10	0.04
Median portions of vegetables	0.7	0.7	0.7	1.0	0.7	0.7
Mean portions of fruit juice	0.4	0.4	0.5	0.4	0.4	0.4
Standard error of the mean	0.04	0.04	0.04	0.05	0.05	0.02
Median portions of fruit juice	0.0	0.0	0.0	0.0	0.0	0.0

*Continued...*

**Table 4.4 - Continued**

Aged 2-15

2014

Portions per day	Age					Total
	2-4	5-7	8-10	11-12	13-15	
	%	%	%	%	%	%
<b>All children</b>						
None	7	6	11	11	15	10
Less than 1 portion	4	6	3	4	5	4
1 portion or more but less than 2	20	23	20	23	24	22
2 portions or more but less than 3	23	19	24	22	22	22
3 portions or more but less than 4	19	19	19	16	11	17
4 portions or more but less than 5	15	11	11	9	10	11
5 portions or more	12	16	12	15	14	14
Mean portions of fruit, veg and fruit juice	2.9	2.8	2.8	2.7	2.6	2.8
Standard error of the mean	0.11	0.13	0.14	0.17	0.19	0.08
Median portions of fruit, veg and fruit juice	2.7	2.5	2.5	2.3	2.0	2.3
Mean portions of fruit	1.7	1.7	1.4	1.2	1.2	1.5
Standard error of the mean	0.08	0.10	0.10	0.10	0.10	0.05
Median portions of fruit	1.5	1.5	1.0	1.0	1.0	1.0
Mean portions of vegetables	0.8	0.8	0.9	1.1	1.0	0.9
Standard error of the mean	0.05	0.05	0.06	0.09	0.11	0.04
Median portions of vegetables	0.7	0.7	0.7	1.0	0.7	0.7
Mean portions of fruit juice	0.4	0.4	0.4	0.4	0.4	0.4
Standard error of the mean	0.03	0.03	0.03	0.04	0.03	0.02
Median portions of fruit juice	0.0	0.0	0.0	0.0	0.0	0.0
<i>Bases (weighted):</i>						
<i>Boys</i>	165	153	164	112	149	742
<i>Girls</i>	169	150	159	113	129	720
<i>All children</i>	334	303	323	224	277	1461
<i>Bases (unweighted):</i>						
<i>Boys</i>	166	152	163	104	144	729
<i>Girls</i>	163	169	167	104	127	730
<i>All children</i>	329	321	330	208	271	1459

**Table 4.5 Summary of adult eating habits, 2008, 2010, 2012, 2014***Aged 16 and over**2008, 2010, 2012, 2014*

<b>Food type and frequency</b>	2008	2010	2012	2014
	%	%	%	%
<b>Men</b>				
Eats oily fish once a week or more	23	24	25	23
Eats white fish once a week or more	50	51	52	48
Eats tuna fish once a week or more	27	29	29	25
Eats red meat 2+ times a week	64	63	59	61
Eats meat products 2+ times a week	39	34	36	37
Drinks skimmed / semi-skimmed milk	70	73	71	71
Sweets or chocolates once a day or more	28	26	28	27
Biscuits once a day or more	36	35	33	35
Cakes 2+ times a week	36	36	36	36
Ice-cream once a week or more	29	24	28	33
Non-diet soft drinks once a day or more	26	29	28	30
Crisps once a day or more	19	17	18	23
Eats chips 2+ times a week	36	35	36	37
Eats potatoes, pasta, rice 5+ times a week	55	53	52	51
Eats at least 2-3 slices of high fibre bread a day	42	41	43	43
Eats high fibre / low sugar cereal at least 5-6 times a week	29	24	31	30
<b>Women</b>				
Eats oily fish once a week or more	26	24	26	27
Eats white fish once a week or more	52	49	50	48
Eats tuna fish once a week or more	33	32	32	30
Eats red meat 2+ times a week	59	53	53	51
Eats meat products 2+ times a week	18	17	21	20
Drinks skimmed / semi-skimmed milk	77	77	77	77
Sweets or chocolates once a day or more	28	24	29	26
Biscuits once a day or more	33	28	32	27
Cakes 2+ times a week	33	36	33	32
Ice-cream once a week or more	28	24	25	26
Non-diet soft drinks once a day or more	21	23	22	24
Crisps once a day or more	16	14	16	19
Eats chips 2+ times a week	26	24	26	25
Eats potatoes, pasta, rice 5+ times a week	54	53	51	52
Eats at least 2-3 slices of high fibre bread a day	42	43	40	37
Eats high fibre / low sugar cereal at least 5-6 times a week	31	28	33	30

*Continued...*

**Table 4.5 - Continued***Aged 16 and over**2008, 2010, 2012, 2014*

<b>Food type and frequency</b>	<b>2008</b>	<b>2010</b>	<b>2012</b>	<b>2014</b>
	%	%	%	%
<b>All adults</b>				
Eats oily fish once a week or more	25	24	26	25
Eats white fish once a week or more	51	50	51	48
Eats tuna fish once a week or more	30	30	30	28
Eats red meat 2+ times a week	61	58	56	56
Eats meat products 2+ times a week	28	25	28	28
Drinks skimmed / semi-skimmed milk	74	75	74	74
Sweets or chocolates once a day or more	28	25	29	27
Biscuits once a day or more	34	31	32	31
Cakes 2+ times a week	34	36	35	34
Ice-cream once a week or more	28	24	26	29
Non-diet soft drinks once a day or more	23	26	25	27
Crisps once a day or more	17	15	17	21
Eats chips 2+ times a week	31	29	31	31
Eats potatoes, pasta, rice 5+ times a week	55	53	51	51
Eats at least 2-3 slices of high fibre bread a day	42	42	41	40
Eats high fibre / low sugar cereal at least 5-6 times a week	30	26	32	30
<i>Bases (weighted):</i>				
<i>Men</i>	1086	1142	1252	999
<i>Women</i>	1188	1242	1359	1081
<i>All adults</i>	2274	2384	2611	2080
<i>Bases (unweighted):</i>				
<i>Men</i>	986	1013	1151	925
<i>Women</i>	1286	1371	1459	1155
<i>All adults</i>	2272	2384	2610	2080

a for example beef, lamb or pork

b for example sausages, meat pies, bridies, corned beef or burgers

**Table 4.6 Consumption of meat and fish, 2012/2014 combined, by age and sex**

*Aged 16 and over*

*2012/2014 combined*

Food type and frequency	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Oily fish once a week or more	12	17	22	23	34	35	36	24
White fish once a week or more	43	33	44	51	57	70	72	51
Tuna fish once a week or more	34	30	33	29	24	17	15	27
Any fish 2+ times a week	33	32	40	41	45	46	48	40
Red meat <sup>a</sup> 2+ times a week	57	61	55	57	63	65	64	60
Meat products <sup>b</sup> 2+ times a week	51	43	34	36	31	25	27	36
Any red meat or meat product 2+ times a week	82	78	77	79	79	81	79	79
<b>Women</b>								
Oily fish once a week or more	17	18	24	28	32	35	35	27
White fish once a week or more	30	35	46	49	59	61	71	49
Tuna fish once a week or more	44	32	34	35	28	22	16	31
Any fish 2+ times a week	38	32	39	43	46	45	47	41
Red meat <sup>a</sup> 2+ times a week	39	55	45	55	55	58	58	52
Meat products <sup>b</sup> 2+ times a week	26	24	22	20	17	14	15	20
Any red meat or meat product 2+ times a week	65	71	63	71	69	69	71	68
<b>All adults</b>								
Oily fish once a week or more	14	18	23	26	33	35	35	26
White fish once a week or more	37	34	45	50	58	65	71	50
Tuna fish once a week or more	39	31	34	32	26	20	15	29
Any fish 2+ times a week	35	32	39	42	45	46	47	40
Red meat <sup>a</sup> 2+ times a week	48	58	50	56	59	61	61	56
Meat products <sup>b</sup> 2+ times a week	39	33	28	28	24	19	20	28
Any red meat or meat product 2+ times a week	74	74	70	75	74	75	74	74
<i>Bases (weighted):</i>								
<i>Men</i>	322	360	360	420	350	266	175	2253
<i>Women</i>	316	377	382	444	368	296	255	2438
<i>All adults</i>	638	738	742	865	718	561	429	4691
<i>Bases (unweighted):</i>								
<i>Men</i>	168	225	317	378	382	377	229	2076
<i>Women</i>	224	312	431	484	434	399	330	2614
<i>All adults</i>	392	537	748	862	816	776	559	4690

a for example beef, lamb or pork

b for example sausages, meat pies, bridies, corned beef or burgers



**Table 4.7 Consumption of whole, semi-skimmed and skimmed milk, 2012/2014 combined, by age and sex**

*Aged 16 and over*

*2012/2014 combined*

Type of milk usually consumed	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Whole	21	28	22	18	21	19	35	23
Semi-skimmed	74	56	62	65	66	63	56	64
Skimmed	1	8	9	10	8	10	4	8
Other type of milk	-	2	1	3	2	1	2	2
Does not drink milk	4	5	5	4	3	7	3	5
<b>Women</b>								
Whole	13	26	14	13	13	15	23	17
Semi-skimmed	68	61	62	67	66	61	67	65
Skimmed	12	8	15	13	13	17	7	12
Other type of milk	0	2	4	3	5	3	1	3
Does not drink milk	6	3	6	3	4	4	2	4
<b>All adults</b>								
Whole	17	27	18	16	17	17	28	19
Semi-skimmed	71	59	62	66	66	62	63	64
Skimmed	7	8	12	12	11	14	6	10
Other type of milk	0	2	3	3	3	2	1	2
Does not drink milk	5	4	5	4	3	5	2	4
<i>Bases (weighted):</i>								
<i>Men</i>	322	360	360	420	350	266	174	2252
<i>Women</i>	316	377	382	444	368	296	255	2438
<i>All adults</i>	638	738	742	865	718	561	428	4690
<i>Bases (unweighted):</i>								
<i>Men</i>	168	225	317	378	382	377	228	2075
<i>Women</i>	224	312	431	484	434	399	330	2614
<i>All adults</i>	392	537	748	862	816	776	558	4689

**Table 4.8 Consumption of foods rich in starch and fibre, 2012/2014 combined, by age and sex**

Food type and frequency	Aged 16 and over							2012/2014 combined
	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Potatoes, pasta, rice 5+ times a week	51	51	46	49	59	50	58	52
At least 2-3 slices of high fibre bread a day	33	41	41	46	49	45	46	43
High fibre / low sugar cereal at least 5-6 times a week	21	25	31	28	33	37	46	30
<b>Women</b>								
Potatoes, pasta, rice 5+ times a week	52	49	48	49	53	54	56	51
At least 2-3 slices of high fibre bread a day	29	33	40	36	43	46	44	39
High fibre / low sugar cereal at least 5-6 times a week	21	28	26	32	38	37	44	32
<b>All adults</b>								
Potatoes, pasta, rice 5+ times a week	52	50	47	49	56	52	57	51
At least 2-3 slices of high fibre bread a day	31	37	40	41	46	46	45	41
High fibre / low sugar cereal at least 5-6 times a week	21	26	28	30	36	37	45	31
<i>Bases (weighted):</i>								
<i>Men</i>	322	360	360	420	350	266	175	2253
<i>Women</i>	316	377	382	444	368	296	255	2438
<i>All adults</i>	638	738	742	865	718	561	429	4691
<i>Bases (unweighted):</i>								
<i>Men</i>	168	225	317	378	382	377	229	2076
<i>Women</i>	224	312	431	484	434	399	330	2614
<i>All adults</i>	392	537	748	862	816	776	559	4690

**Table 4.9 Consumption of foods and drinks high in fat and / or sugar, 2012/2014 combined, by age and sex**

Food type and frequency	Aged 16 and over							2012/2014 combined
	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Sweets or chocolates once a day or more	36	31	28	27	21	20	33	28
Biscuits once a day or more	27	19	27	37	35	46	60	34
Cakes 2+ times a week	35	26	37	34	39	40	52	36
Ice-cream once a week or more	31	22	25	30	30	39	40	30
Non-diet soft drinks once a day or more	50	36	34	26	18	16	16	29
Any sugary drink or snack once a day or more <sup>a</sup>	89	71	78	73	76	76	83	77
Crisps once a day or more	35	28	22	19	10	12	7	20
Chips 2+ times a week	54	41	35	36	26	33	28	37
<b>Women</b>								
Sweets or chocolates once a day or more	27	29	27	28	24	24	36	28
Biscuits once a day or more	14	21	20	28	36	41	59	30
Cakes 2+ times a week	22	26	24	30	40	42	52	33
Ice-cream once a week or more	24	20	18	22	31	31	37	25
Non-diet soft drinks once a day or more	32	28	28	19	17	16	18	23
Any sugary drink or snack once a day or more <sup>a</sup>	75	74	67	66	71	74	85	72
Crisps once a day or more	22	23	24	20	12	9	6	17
Chips 2+ times a week	36	29	28	25	18	23	19	25
<b>All adults</b>								
Sweets or chocolates once a day or more	32	30	28	28	23	22	35	28
Biscuits once a day or more	21	20	23	33	35	43	59	32
Cakes 2+ times a week	29	26	30	32	40	41	52	34
Ice-cream once a week or more	27	21	21	26	31	35	38	27
Non-diet soft drinks once a day or more	41	32	31	22	18	16	17	26
Any sugary drink or snack once a day or more <sup>a</sup>	82	73	72	69	73	75	84	75
Crisps once a day or more	29	25	23	19	11	10	6	19
Chips 2+ times a week	45	35	31	30	22	28	23	31

Continued...

**Table 4.9 - Continued***Aged 16 and over**2012/2014 combined*

<b>Food type and frequency</b>	<b>Age</b>							<b>Total</b>
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<i>Bases (weighted):</i>								
<i>Men</i>	322	360	360	420	350	266	175	2253
<i>Women</i>	316	377	382	444	368	296	255	2438
<i>All adults</i>	638	738	742	865	718	561	429	4691
<i>Bases (unweighted):</i>								
<i>Men</i>	168	225	317	378	382	377	229	2076
<i>Women</i>	224	312	431	484	434	399	330	2614
<i>All adults</i>	392	537	748	862	816	776	559	4690

a Sugary snacks include sweets or chocolates, biscuits, cakes, ice cream and non-diet soft drinks



## 5 PHYSICAL ACTIVITY

Valdeep Gill

### SUMMARY

#### Child Activity Levels

- In 2014, 76% of children aged 2-15 were active for at least 60 minutes a day (including school-based activity), a similar level to 2013 (75%).
- The proportion of children meeting the physical activity guidelines had increased since 2008 regardless of whether school-based activity was included or excluded.
- As in previous years, a significantly lower percentage of girls than of boys met the physical activity guidelines in 2014, irrespective of whether school-based activities were included or not.
- The difference between girls and boys in meeting the physical activity guidelines was particularly pronounced for those aged 2-4 and 13-15 where participation for girls was considerably lower.
- The proportion of children who had participated in sport in the last week was 67%, a similar level to that seen in recent years (66% in 2012, 67% in 2013) but a decline on the 73% figure in 2009.
- There was no significant difference overall in participation by boys (68%) and girls (65%) in sport in the last week, but participation by those aged 13-15 was significantly higher for boys (71%) than girls (56%).

#### Adult Activity Levels

- In 2014, 63% of adults were active at the recommended level (150 minutes of moderate or 75 minutes of vigorous activity per week), similar to the proportions in 2012 (62%) and 2013 (64%). One in five (22%) adults did fewer than 30 minutes of moderate or 15 minutes of vigorous activity per week.
- A significantly smaller proportion of women than men met the physical activity guidelines (59% and 68% respectively).
- The proportion of adults meeting the guidelines was highest for those aged 25-34 (79%), and steadily declined with increasing age with 26% of adults aged 75 and above meeting the requirement and 56% of the same age group having very low activity levels.
- The most popular sporting activities in 2014 were working out a gym (17%), exercises (17%), swimming (14%) and running (13%).
- Participation in sports tended to decline with age, with 78% of those aged 16-24 taking part and 22% of those aged 75 and above.

#### Perceived Impact of the Commonwealth Games

- A small minority of all adults in 2014 felt that the Commonwealth Games had influenced or changed their attitudes to, or participation in, sport. The largest reported impact was that 6% of adults said they were now more interested in sport and physical activity in general.
- Adults aged 16-44 were more likely than older adults to be influenced by the Games.
- 5% of adults interviewed after the Games started said they were thinking about doing more sport or physical activity compared with 2% of those interviewed beforehand. No other perceptions changed significantly once the Games began.

### **Motivations and Barriers to Sports Participation**

- The main motivations for doing sport in 2012/2014 were: enjoyment (69%), keeping fit (64%), health reasons / improving health (33%), weight loss (31%) and meeting with friends (26%).
- Men were more likely than women to report enjoyment, performance improvement and training for or participating in competitions. Women were more likely than men to mention weight loss and accompanying children as their motivations.
- The main barriers to doing sport in 2012/2014 were: poor health (35%), a lack of time (32%), and lack of interest (17%). Men and women tended to mention the same kinds of barriers.
- Lack of time to do sport decreased with age, while health concerns increased with age.

## **5.1 INTRODUCTION**

The health benefits of a physically active lifestyle are well recognised. Being active on a regular basis puts a person at reduced risk of chronic conditions of particular concern in Scotland, including cardiovascular disease, obesity, and type 2 diabetes.<sup>1</sup> The benefits of being regularly active extend beyond physical health, with evidence that certain forms of increased activity may also improve mental wellbeing, another key health priority in Scotland.<sup>2</sup> Exercise is now recommended by The Royal College of Psychiatrists as a treatment for depression in adults,<sup>3</sup> and the Scottish Intercollegiate Guidelines Network (SIGN) national clinical guidelines for non-pharmaceutical management of depression states that structured exercise programmes may be an option for depressed people.<sup>4</sup> Among older people, physical activity is associated with better health and cognitive function and can reduce the risk of falls in those with mobility problems.<sup>5,6</sup>

High activity levels in childhood provide both immediate and longer-term benefits, for example by promoting cognitive skills and bone strength, reducing the incidence of metabolic risk factors such as obesity and hypertension, and setting in place activity habits that endure into adulthood.<sup>7</sup>

The World Health Organisation (WHO) estimated, in 2008, that 3.2 million deaths per year could be attributed to low physical activity levels.<sup>8</sup> It is estimated that in Scotland low activity contributes to around 2,500 deaths per year and costs the National Health Service £94 million annually.<sup>9</sup>

### **5.1.1 Policy background**

Helping more people to be more active, more often is an over-arching policy objective of the Scottish Government. This commitment is reflected in the addition of a National Indicator to 'increase physical activity' to the **National Performance Framework** in 2012.<sup>10</sup> Data from the Scottish Health Survey (SHeS) are used to monitor indicator performance. The **Active Scotland Outcomes Framework**,<sup>11</sup> published in December 2014, was collaboratively developed through the National Strategic Group for Sport and Physical Activity. The framework relies on SHeS data for many of its indicators.

In addition, information on physical and sedentary activity collected during the survey interview is used to inform some of the intermediate-term indicators used to monitor the progress of the **Obesity Route Map**.<sup>12</sup>

The Scottish Government have committed an annual investment of £3 million to increase the activity levels of those furthest away from meeting the guidelines – teenage girls and older adults. The **Active Scotland** web portal, developed by NHS Health Scotland, helps physical activity staff and health professionals signpost the public to physical activity opportunities.<sup>13</sup>

In addition to the annual funding to boost teenage girls' activity, other key initiatives to tackle inactivity among children and young people include the **Active Schools** network which aims to increase the number of sporting opportunities available to children and young people.<sup>14</sup> Alongside this, is the **Sport Strategy for Children and Young People** which aims to boost physical activity and participation and make sport as accessible and enjoyable as possible.<sup>15</sup>

Several programmes to increase physical activity have been designed to capitalise on the opportunities presented by the 2014 Commonwealth Games in Glasgow, as part of the **Legacy 2014** initiative.<sup>16</sup> Progress on legacy outcomes is being tracked via **Assessing Legacy 2014**.<sup>17</sup> Again, SHeS data are being used to monitor several of the Active Scotland Outcome Framework Indicators on activity levels (reported here) and awareness of the recommendations on physical activity (included in last year's report).

The key national legacy programme designed to influence population levels of activity in adults and children is the national **Physical Activity Implementation Plan: A More Active Scotland - Building a Legacy from the Commonwealth Games (PAIP)**.<sup>18</sup> The PAIP is a 10 year plan which adapts the key elements of the 2010 Toronto Charter for Physical Activity to Scotland, and links this directly to the Scottish Government's legacy ambitions for the Commonwealth Games.<sup>19</sup> The Toronto charter was developed following extensive worldwide expert consultation and makes the case for increased action and greater investment on physical activity for health, environmental, economic and other wider outcomes.

The Plan represents Scotland's long term physical activity implementation policy. It adapts the Toronto Charter's seven best investments that work to promote physical activity and presents these in the Scottish context under five delivery themes: environment, workplace settings, healthcare settings, education settings and sport and active recreation. The data presented below demonstrate the importance of walking for physical activity, and one of the first milestones of the PAIP is the **National Walking Strategy, published in 2014**.<sup>20</sup>



### 5.1.2 Guidelines on physical activity

In July 2011, drawing on evidence about activity and health, the Chief Medical Officers of each of the four UK countries agreed and introduced revised guidelines on physical activity. The revisions followed guidance issued by the WHO and are in line with similar changes made to advice on activity levels in both the USA and Canada. The guidance, tailored to specific age groups over the life course, is as follows:

**Table 5A UK CMOs' physical activity guidelines**

Age group	Guidelines
<b>Early years – children under 5 years</b>	<ul style="list-style-type: none"> <li>○ Physical activity should be encouraged from birth, particularly through floor-based play and water-based activities in safe environments.</li> <li>○ Children capable of walking unaided should be physically active daily for at least 180 minutes (3 hours), spread throughout the day.</li> <li>○ Minimise amount of time spent being sedentary (being restrained or sitting) for extended periods (except time spent sleeping).</li> </ul>
<b>Children and young people aged 5 to 18</b>	<ul style="list-style-type: none"> <li>○ Should engage in moderate to vigorous activity for at least 60 minutes and up to several hours every day.</li> <li>○ Vigorous activities, including those that strengthen muscles and bones, should be carried out on at least 3 days a week.</li> <li>○ Extended periods of sedentary activities should be limited.</li> <li>○ Should be active daily.</li> </ul>
<b>Adults aged 19-64</b>	<ul style="list-style-type: none"> <li>○ Should engage in at least moderate activity for a minimum of 150 minutes a week (accumulated in bouts of at least 10 minutes) - for example by being active for 30 minutes on five days a week.</li> <li>○ Alternatively, 75 minutes of vigorous activity spread across the week will confer similar benefits to 150 minutes of moderate activity (or a combination of moderate and vigorous activity).</li> <li>○ Activities that strengthen muscles should be carried out on at least two days a week.</li> <li>○ Extended periods of sedentary activities should be limited.</li> </ul>
<b>Adults aged 65 and over</b>	<ul style="list-style-type: none"> <li>○ In addition to the guidance for adults aged 19-64, older adults are advised that any amount of physical activity is better than none, and more activity provides greater health benefits.</li> <li>○ Older adults at risk of falls should incorporate activities to improve balance and coordination on at least two days a week.</li> </ul>

### 5.1.3 Reporting on physical activity in the Scottish Health Survey (SHeS)

Adult adherence to the new guidelines on moderate / vigorous physical activity (MVPA) in 2014 is presented in this chapter (adherence to other aspects of the guidelines, such as muscle-strengthening activities, will be included in future reports). Trends in child physical activity, both including and excluding school-based activities are also presented and the trend in child participation in sports and exercise has also been

updated. As noted above, these headline measures are key indicators for a number of strategies. Chapter 9 examines the social patterning of these outcome measures for children over time, and for adults in 2014, by presenting activity levels by area deprivation.

A question designed to assess perceptions of the influence of the Commonwealth Games on adults' participation and interest in sports and activity was added to the survey in 2014 to help assess the Games' impact. The findings are presented here by age, sex and area deprivation. Adults' reasons for participating in physical activity, and the barriers they face, are also presented. Supplementary tables on physical activity are available on the survey website.<sup>21</sup>

## **5.2 METHODS AND DEFINITIONS**

### **5.2.1 Adult physical activity questionnaire**

The SHeS questionnaire<sup>22</sup> asks about four main types of physical activity:

- Home-based activities (housework, gardening, building work and DIY)
- Walking
- Sports and exercise, and
- Activity at work.

Information is collected on the:

- time spent being active
- intensity of the activities undertaken, and
- frequency with which activities are performed.

### **5.2.2 Adherence to adult physical activity guidelines**

Monitoring adherence to the revised guidelines (discussed in Section 5.1.2) required several changes to be made to the SHeS physical activity questions in 2012. Details of the exact amendments made to the module, and fuller details of the information collected about physical activity, are outlined in the 2012 SHeS annual report.<sup>23</sup>

The current activity guidelines advise adults to accumulate 150 minutes of moderate activity or 75 minutes of vigorous activity per week or an equivalent combination of both, in bouts of 10 minutes or more. This guideline is referred to throughout this chapter as the MVPA guideline (Moderate or Vigorous Physical Activity). To help assess adherence to this guideline, the intensity level of activities mentioned by participants was estimated. Activities of low intensity, and activities of less than 10 minutes duration, were not included in the assessment. This allowed the calculation of a measure of whether each SHeS participant adhered to the guideline, referred to in the text and tables as "adult summary

activity levels". A more detailed discussion of this calculation is provided in the 2012 report.<sup>23</sup>

**Table 5B Adult summary activity levels<sup>a</sup>**

Meets MVPA guidelines	Reported 150 mins/week of moderate physical activity, 75 mins vigorous physical activity, or an equivalent combination of these.
Some activity	Reported 60-149 mins/week of moderate physical activity, 30-74 mins/week vigorous physical activity, or an equivalent combination of these.
Low activity	Reported 30-59 mins/week of moderate physical activity, 15-29 mins/week vigorous physical activity or an equivalent combination of these.
Very low activity	Reported less than 30 mins/week of moderate physical activity, less than 15 mins/week vigorous physical activity, or an equivalent combination of these.

<sup>a</sup> Only bouts of 10 minutes or more were included towards the 150 minutes per week guideline

To avoid overcomplicating the text, where descriptions are provided of the summary activity levels, they tend to refer only to moderate physical activity, although the calculations were based on moderate or vigorous activity as described above.

A second summary measure was calculated for adults, in respect of meeting the guidelines to carry out activities that strengthen muscles on at least 2 days a week to increase bone strength and muscular fitness. Nine different sports were classed as always muscle strengthening, and other sports or exercises were classed as muscle strengthening if the participant reported that the effort was enough to make the muscles feel some tension, shake or feel warm. If the participant carried out such activities for at least 10 minutes on 2 or more days a week, on average, they were deemed to meet the muscle strengthening guideline.

### 5.2.3 Child physical activity questionnaire

The questions on child physical activity are slightly less detailed than those for adults.<sup>24</sup> No information on intensity is collected (with the exception of asking those aged 13-15 about their walking pace). The questions cover:

- Sports and exercise
- Active play
- Walking, and
- Housework or gardening (children aged 8 and over only).

Since 2008, children at school have also been asked about any active things they have done as part of lessons (using the same format of questions as for all other activity types). Full details of all the information collected was provided in the 2012 report.<sup>23</sup>

#### 5.2.4 Adherence to child physical activity guidelines

For the purposes of calculating physical activity levels, it was assumed that all reported activities were of at least moderate intensity. Data on each of the different activities have been summarised to provide an overall measure of child physical activity. This summary measure takes into account both the average time spent participating in physical activity, and the number of active days in the last week. A child's level of physical activity was assigned to one of three categories:

**Table 5C Child summary activity levels**

Meets guideline	Active on 7 days in last week for an average of at least 60 minutes per day
Some activity	Active on 7 days in last week for an average of 30 to 59 minutes per day
Low activity	Active on fewer than 7 days in last week or for an average of less than 30 minutes a day

#### 5.2.5 Perceived impact of the Commonwealth Games on adult activity levels

From January 2014, a random sub-sample of adults was asked whether Scotland hosting the Glasgow 2014 Commonwealth Games had influenced them in any of the following ways:

- I have taken up a new sport
- I am thinking about taking up a new sport
- I am doing more sport or physical activity
- I am thinking about doing more sport or physical activity
- I am more interested in sport and physical activity in general

These questions can only measure participants' perceptions – no data were collected on their level of sporting activity or interest prior to 2014, and no follow-up of individuals is being conducted to assess whether any new activities taken up were maintained, or intentions to do so were acted on. The question is also being asked in the 2015 survey so the sustainability of these perceptions at the population level can be assessed in future.

#### 5.2.6 Motivations and barriers to physical activity

Adults were presented with a range of possible reasons for doing physical activities and asked to select the ones that applied to them. The options included reasons to do with improving health and fitness, improving performance, as well as social motivations, such as meeting friends. The full range of options is shown in Table 5.11. Various barriers to being active, or being more active, were also asked about, with the options spanning aspects such as costs, access, time, interest and poor health (the full options are in Table 5.12).

## 5.3 CHILD PHYSICAL ACTIVITY LEVELS

### 5.3.1 Trends in summary physical activity levels for children since 1998

Information on children's physical activity has been collected in SHeS since 1998, and data on activity done while at school included since 2008. Trends for the proportion of children aged 2-15 meeting the government guidelines of at least 60 minutes of activity every day of the week, including and excluding activity at school, are presented in Figure 5A and Table 5.1.

Excluding school-based activities, 70% of all children aged 2-15 met the physical activity guidelines in 2014. The long-term trend shows a significant increase from 2008 (64%) to 2014 (70%) although this has not been completely linear, and the latest figure is now very similar to that in 2003 (69%). Including school-based activities, 76% of children met the physical activity guidelines in 2014, an increase on the 71% seen in 2008, though this was not significantly different to the level in 2013 (75%). Levels of participation for all children increased by six percentage points when school-based activity was included, with the difference between these two measures having ranged between six and nine percentage points since 2008.

In 2014, including school-based activities, over three-quarters of boys aged 2-15 (79%) met the activity guideline, with the overall proportion since 2008 ranging between 73% and 79%, with no obvious pattern. There was also no clear pattern when school-based activities were excluded, with levels ranging from 66% to 74% (73% in 2014).

The proportion of girls meeting the required activity level showed a clearer pattern than that seen for boys. When school-based activities were included, a generally upward trend was seen from 64% in 2008 to 72% in 2013 and 73% in 2014. A similar pattern was seen when school-based activities were excluded, from 56% in 2008 to 64% in 2013, and 67% in 2014, with earlier figures from 1998 to 2008 having shown no real change.

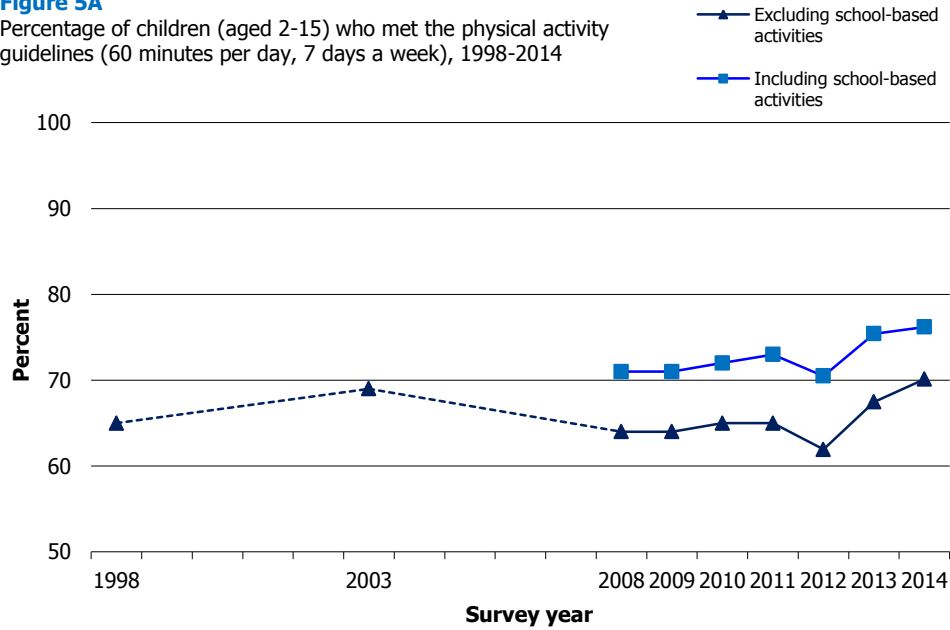
The gap in physical activity in 2014 between boys and girls (including school-based activity) was six percentage points (79% of boys and 73% of girls). This gap has remained static since 2010 at five to six percentage points, which represents a narrowing of the gap since the earlier years of 2008 (13 percentage points) and 2009 (9 percentage points).

**Figure 5A, Table 5.1**

Additional analysis of the change over time in the social-patterning of children's activity levels, including sports and exercise participation, by area deprivation is presented in Chapter 9.

**Figure 5A**

Percentage of children (aged 2-15) who met the physical activity guidelines (60 minutes per day, 7 days a week), 1998-2014



### 5.3.2 Physical activity levels in children in 2014, by age and sex

As seen in Section 5.3.1, in 2014, boys were more likely than girls to meet the physical activity guideline, irrespective of whether or not school-based activities were included in the estimate. Almost three quarters (73%) of boys met the physical activity guideline, when school activity was excluded, compared with two-thirds (67%) of girls. Similarly, when school activity was included, 79% of boys met the physical activity guideline, compared with 73% of girls.

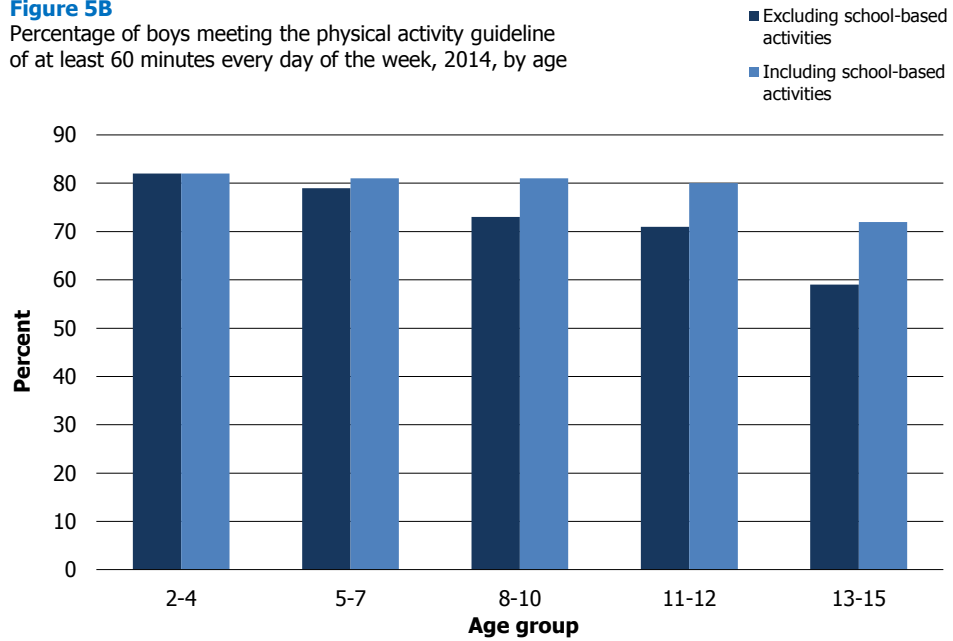
The difference between girls' and boys' activity levels was largely explained by lower activity levels among girls aged 2-4 and 13-15 in 2014 compared with boys of the same age. There was a six percentage point gap overall between boys (73%) and girls (67%) when school-based activity was excluded, but this rose to 11 percentage points for those aged 2-4 (82% of boys, 71% of girls) and 16 percentage points for those aged 13-15 (59% of boys, 43% of girls). Levels of physical activity were more similar for boys and girls in the other age groups. This pattern of lower activity levels among girls aged 2-4 and 13-15 compared with boys was also observed when school-based activity was included.

Previous years reports<sup>23,25</sup> have noted that girls' adherence to the guidelines decreased with increasing age more notably when school-based activity was excluded than when it was included, suggesting the importance of school-based activity for girls. As Figures 5B and 5C illustrate, this pattern was not seen in 2014, with the differences in participation levels with and without school activity included being broadly similar for girls and boys in percentage point terms across the age groups. This will need further examination in future years to assess whether these results are an outlier or reflect a genuine change.

**Figure 5B, Figure 5C, Table 5.2**

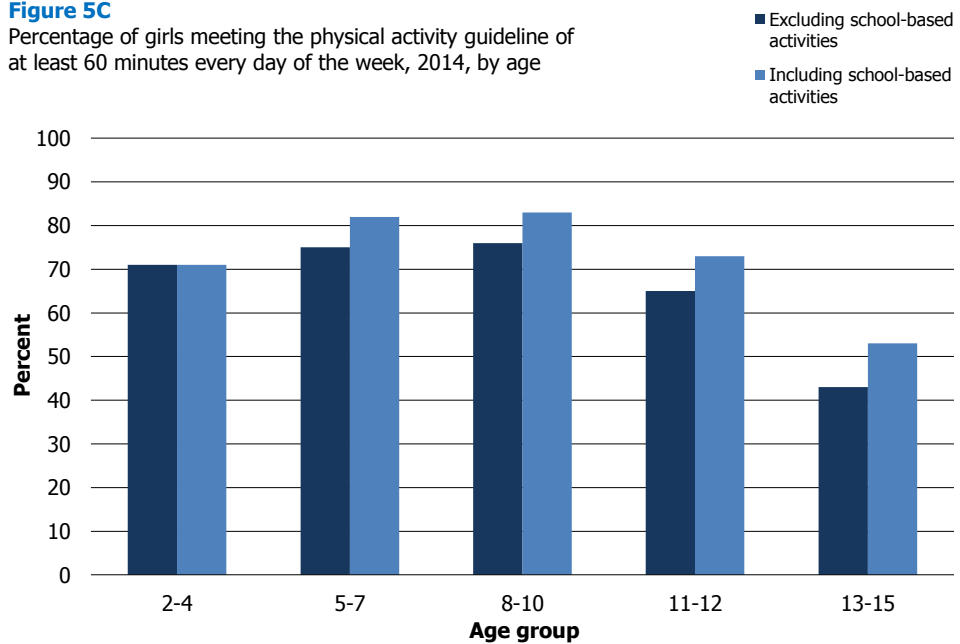
**Figure 5B**

Percentage of boys meeting the physical activity guideline of at least 60 minutes every day of the week, 2014, by age



**Figure 5C**

Percentage of girls meeting the physical activity guideline of at least 60 minutes every day of the week, 2014, by age



### 5.3.3 Trends in sports and exercise participation among children since 1998

In 2014, 67% of all children aged 2-15 had participated in sport and exercise in the week prior to interview. While this level has remained relatively stable since 2012 (66%) and 2013 (67%), this has declined from 73% in 2009.

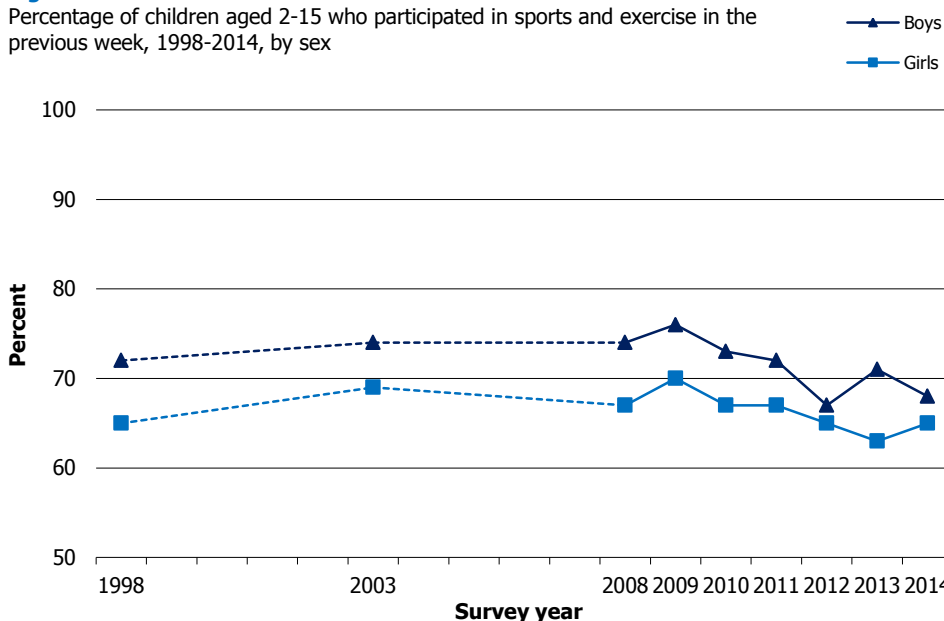
Since 1998, girls' participation in sport and exercise in the previous week was at its highest in 2009 (70%), while figures from 2012 to 2014 have been relatively static at 63-65% (65% in 2014). This was in contrast to the overall increase from 2008 to 2014 in girls adhering to the required weekly physical activity as discussed in Section 5.3.1.

The figures for boys' participation in sport and exercise have seen a little more fluctuation over time (particularly since 2012), but there has been a statistically significant downward trend overall, with the figures for the three most recent years (67-71%) lower than those in 2008 (74%) and 2009 (76%). This was in contrast to the finding discussed in Section 5.3.1, that changes in boys' adherence to the physical activity guidelines have shown no clear pattern over the same 2008 and 2014 period.

**Figure 5D, Table 5.3**

**Figure 5D**

Percentage of children aged 2-15 who participated in sports and exercise in the previous week, 1998-2014, by sex



### 5.3.4 Sports and exercise participation among children in 2014, by age and sex

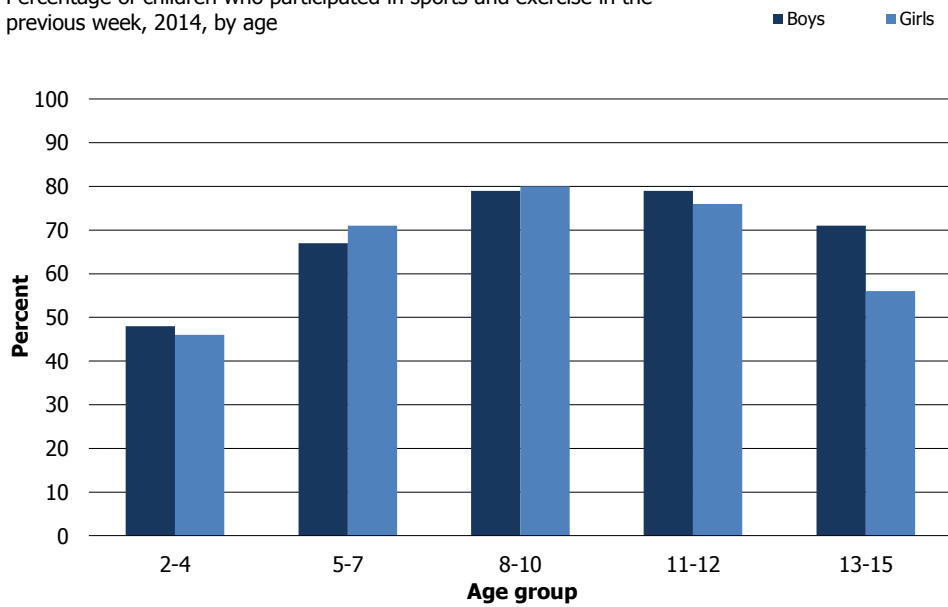
In 2014, 67% of children aged 2-15 had participated in sport and exercise in the week prior to interview, with no significant difference between boys (68%) and girls (65%). However, as Figure 5E illustrates, the decline in participation evident for the 13-15 age group was more pronounced for girls (76-80% for those aged 8-12, 56% for those aged 13-15) than boys (79% for those aged 8-12, 71% for those aged 13-15).

**Figure 5E, Table 5.4**



**Figure 5E**

Percentage of children who participated in sports and exercise in the previous week, 2014, by age



## 5.4 ADULT PHYSICAL ACTIVITY LEVELS

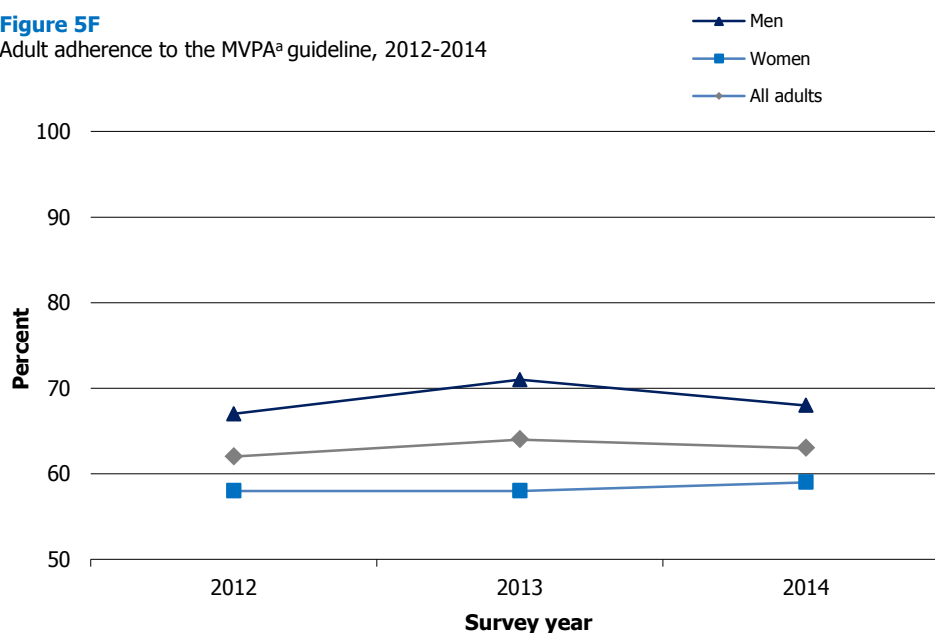
### 5.4.1 Trends in summary adult physical activity levels, and adherence to the aerobic activity guidelines in 2012-2014

In 2014, 63% of adults met the guidelines on moderate or vigorous activity (MVPA) of at least 150 minutes of moderate, or 75 minutes' vigorous activity, or an equivalent combination of the two, per week. This figure has not changed significantly in the 2012-2014 period.

As in previous years, men were more likely than women to meet the MVPA guidelines in 2014 (68% and 59%, respectively). While adherence to this guidelines from 2012 to 2014 has remained stable for women at the 58-59% level, adherence among men has fluctuated slightly, increasing from 2012 (67%) to 2013 (71%), and then dipping in 2014 (68%).

**Figure 5F, Table 5.5**

**Figure 5F**  
Adult adherence to the MVPA<sup>a</sup> guideline, 2012-2014



<sup>a</sup>Meets moderate / vigorous physical activity guidelines of 150 minutes of moderate, or 75 minutes' vigorous activity, or combination of both each week

#### 5.4.2 Summary adult physical activity levels, and adherence to the aerobic activity guidelines in 2014, by age and sex

Activity levels were significantly associated with age, with younger adults in 2014 generally more likely than those in older age groups to meet the MPVA guideline. Adherence was highest among adults aged 25-34 (79%), and steadily declined with increasing age, with the lowest proportion found among adults aged 75 and over (26%).

In 2014, men's activity levels were notably higher than women's across all age groups (6-16 percentage points difference), with the exception of those aged 45-64 (1-2 percentage points difference). As Figure 5G illustrates, the difference between men and women's adherence to the MVPA guidelines was most apparent in the youngest (aged 16-24) and oldest (65 and over) age groups.

**Figure 5G, Table 5.6**

**Figure 5G**

Adult adherence to the MVPA guideline, 2014, by age

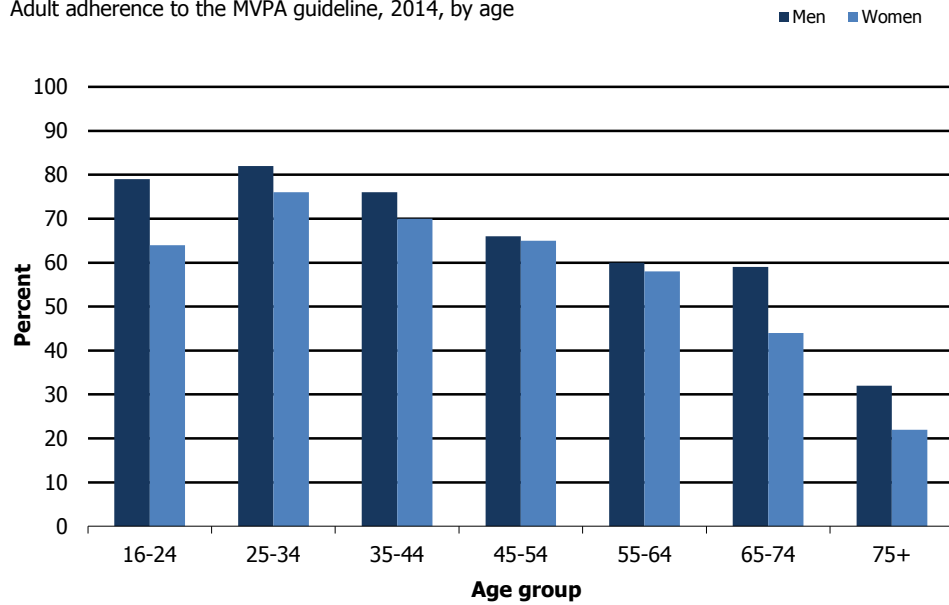


Table 5.6 shows how the decline in adherence to the MVPA guidelines across the age groups was mainly accounted for by an increase in the proportion of adults with the lowest level of activity (less than half an hour a week of moderate activity or the equivalent level of vigorous activity). Around one in five (22%) adults in 2014 had very low activity levels, and women were more likely to have very low activity levels than men (24% and 19%, respectively). As reported in previous years, and illustrated in Figure 5H, low activity levels increase with age, and while this was true for both sexes, women aged 16-24 differ notably from men of the same age.

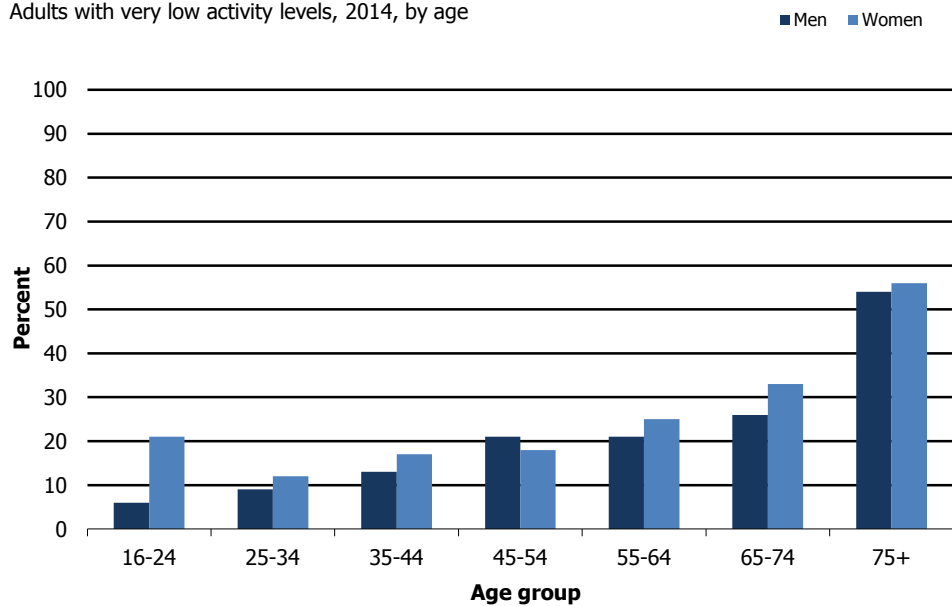
In contrast, the other two activity levels presented in Table 5.6 generally showed very little variation in 2014, either by age or sex. One in ten (11%) adults in 2014 had done 60-149 minutes of moderate or 30-74 minutes of vigorous physical activity per week, and 4% had done 30-59 minutes of moderate or 15-29 minutes of vigorous physical activity per week.

**Figure 5H, Table 5.6**

Additional analysis of adult activity levels, and adherence to the MVPA guidelines, by area deprivation is presented in Chapter 9.

**Figure 5H**

Adults with very low activity levels, 2014, by age



### 5.4.3 Adult sport participation in 2014, by age and sex

In 2014, just over half (55%) of adults had participated in sport and exercise during the four weeks prior to interview, with this being significantly higher for men (62%) than for women (48%). As in 2012,<sup>23</sup> the most popular activities reported included a mixture of some requiring physical infrastructure or equipment, such as working out at a gym (17%), swimming (14%) or cycling (10%), and others that can be less resource intensive, such as exercises (17%) and running (13%).

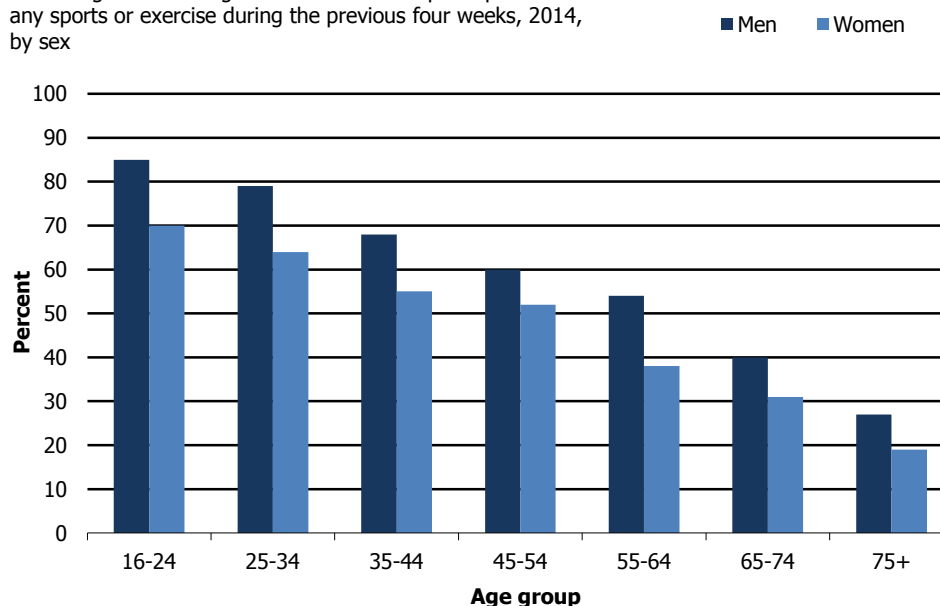
Variations between men and women's sporting activities in 2014 followed similar patterns to those previously observed. For example, swimming, dancing (not including dance for fitness), hill-walking / rambling, racquet sports, and lawn bowls continue to be equally popular among men and women. Similarly, men remain more likely than women to have participated in running, cycling, football / rugby, golf, snooker / billiards / pool, basketball, climbing and fishing / angling, while women were more likely than men to have been to an aerobics / keep fit / gymnastics / dance class or yoga / pilates in the past month.

The proportion of adults taking part in any sports declined steadily with increasing age in 2014, from 78% among those aged 16-24 to 22% among those aged 75 and over. Figure 5I shows that this decline was largely similar for both sexes. Most of the individual sports, but particularly the more vigorous ones, showed this decline with age. As in 2012, golf, hill-walking / rambling and bowls were notable exceptions, with participation levels remaining broadly steady - or increasing - as age increased.

**Figure 5I, Table 5.7**

**Figure 5I**

Percentage of adults aged 16 and over who participated in any sports or exercise during the previous four weeks, 2014, by sex



## 5.5 PERCEIVED IMPACT OF THE COMMONWEALTH GAMES ON SPORTING INTENTIONS AND BEHAVIOUR

### 5.5.1 Perceived impact of the Games, by age and sex

Overall, only a small minority of adults in 2014 felt that the Glasgow Commonwealth Games had influenced or changed their attitudes to sport, or their actual sporting behaviour. In total, 6% said the Games had influenced them to be more interested in sport and physical activity in general, 4% were thinking about doing more sport or physical activity, 1% were actually doing more sport or physical activity, 1% were thinking about taking up a new sport and less than half a percent (rounded to 0% in the table) said they had taken up a new sport as a result.

There were no significant differences by sex, with both men and women having similar results, but there were some differences by age in 2014 with younger adults (aged 16-44) generally reporting more of a perceived impact than older adults (65 and over). For example, 8% of those aged 16-44 said the Games had made them more interested in sport and physical activity compared with 3% of those aged 65 and over, and while 3% in the younger group said they had been influenced to think about taking up a new sport, no-one aged 65 and over said this.

On the whole, perceptions of the Games' impact were not significantly different before and after the Games began. The sole exception to this was that those interviewed on or after the start date were more likely to say that the Games had made them think about doing more sport or physical activity (5%) than those interviewed before (2%).

These questions will also be asked in the 2015 survey. The sustainability of these perceptions, at the population level, will therefore be assessed in future reports.

**Table 5.8**

### **5.5.2 Perceived impact of the Games, by area deprivation**

Area deprivation was measured using the Scottish Index of Multiple Deprivation (SIMD), grouped into quintiles. To ensure that the comparisons presented by SIMD are not confounded by the different age profiles of the sub-groups, the figures reported in Table 5.9 (and all other SIMD tables reported below) have been age-standardised (age-standardisation is described in the Glossary).

The perceived impact of the Commonwealth Games on people's sporting intentions or behaviour showed no statistically significant differences by area deprivation in 2014.

**Table 5.9**

### **5.5.3 Perceived impact of the Games, by long-term condition status**

The figures for 2014 in Table 5.10 that show the association between perceptions and long-term conditions have not been age-standardised but are instead presented by age group. The influence of the Commonwealth Games on sporting intentions or behaviour did not tend to differ significantly according to adults' long-term condition status (limiting, non-limiting, or none). The main exceptions were that 2% of adults with no long-term conditions stated that the Games had influenced them to do more sport or physical activity, whereas 1% of those with a limiting condition said this, as did less than 0.5% of people with a non-limiting condition. People with no long-term conditions were also twice as likely as those with a condition to say they had more interest in sport and activity as a result of the Games (8% and 3-4%, respectively). As Table 5.10 shows, this pattern was broadly consistent for all three age groups presented, which suggests that the association between perceptions and health status was not solely a function of the different age profiles of these groups.

**Table 5.10**

## **5.6 MOTIVATIONS FOR, AND BARRIERS TO, DOING SPORT**

The figures in this section report the motivations those who had participated in sports in the last month gave for doing sport, and the barriers non-participants reported to doing sport. To increase the sample size available, the detailed analysis of motivations for, and barriers to, doing sport uses data from the 2012 and 2014 surveys combined.

### **5.6.1 Motivations**

In 2012/2014, the five most common reasons adults who had taken part in any sport in the past month gave for having done so were: enjoyment (69%), keeping fit (64%), health reasons / to improve health (33%), weight loss (31%) and to meet with friends (26%).

A number of significant differences were apparent between men and women's motivations to participate in sport in 2012/2014. Men were more likely than women to be motivated by each of the following reasons: enjoyment (72% of men, 66% of women), improving performance (26% of men, 13% of women), and training / taking part in a competition (17% of men, 7% of women). Women, however, were

more likely to be motivated by losing weight (37% of women, 25% of men) and taking the children (15% of women, 11% of men).

Many of the motivations varied significantly with age in 2012/2014, though with different patterns evident depending on the factor, and sometimes with different patterns for men and women (note that due to small numbers of older people participating in sport, figures for the oldest group are based on all those aged 65 and over). For example, keeping fit was mentioned by 66-69% of those aged 16-54, but was a less common reason for those aged 55 and over (56%). Performance improvement declined with age, from 25-27% of the 16-34 age group, to 11% at age 65 and over, with the pattern among men showing a clear successive decline between the three youngest groups, whereas among women the figures peaked in the 25-34 age group (18%) and were similar for the rest of those aged under 65 (11-15%). Training for, or taking part in, competitions also declined with age. An increase with age, followed by a decline, was seen for weight loss and taking children.

**Table 5.11**

### 5.6.2 Barriers

Table 5.12 presents the barriers to doing sport mentioned by people who had not participated in any sport in the previous month. In 2012/2014, poor health (35%) and difficulty finding time (32%) were the two most common barriers to participating in sport mentioned. The next most common reason was lack of interest (17%). The remaining barriers were mentioned by less than one in ten people, including 8% who said they already did enough<sup>26</sup> and 7% who gave no reason.

The barriers reported by men and women were not, on the whole, significantly different in 2012/2014, and where differences did exist, they were quite small.

Differences in the kinds of barriers to sport mentioned were more notable by age (due to the relatively high numbers of younger people playing sport, the two youngest age groups have been combined for Table 5.12). Mentioning health problems as a barrier increased markedly with age in 2012/2014, from 11% of those aged 16-34, to 40% of those aged 65-74, and 63% of those aged 75 and over. Conversely, difficulty finding time was mentioned by around half of those aged 16-44 (50-54%), but decreased steadily with increasing age to one in twenty (5%) for those aged 75 and over. Concern about costs was also higher among those aged 16-64 (6-10%), compared with 2% of those aged 65-74, while no-one aged 75 and over mentioned this.

Although some gender differences in barriers to sports participation were apparent using 2012/2014 data, for example relating to time and health concerns in the 16-44 age group, the sample sizes for these groups were relatively small and hence the estimates are not very precise.

**Table 5.12**

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- <sup>26</sup> While this question was reported on only for people who had not done any sport in the previous four weeks, they might have been active via other means (other than sport), such as walking or in their work, hence it is plausible for them to think that they already did enough activity.

## Table list

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**Table 5.1 Proportion of children meeting physical activity guideline, (including and excluding school), 1998 to 2014**

<i>Aged 2 - 15</i>		<i>1998 to 2014</i>							
<b>Proportion meeting guideline<sup>a</sup></b>	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%
<b>Boys</b>									
Excluding activity at school	72	74	72	69	68	69	66	70	73
Including activity at school	n/a	n/a	77	75	75	76	73	78	79
<b>Girls</b>									
Excluding activity at school	59	63	56	58	62	62	58	64	67
Including activity at school	n/a	n/a	64	66	70	70	68	72	73
<b>All Children</b>									
Excluding activity at school	65	69	64	64	65	65	62	67	70
Including activity at school	n/a	n/a	71	71	72	73	70	75	76
<i>Bases (weighted):</i>									
<i>Boys</i>	1088	1478	776	1142	784	867	791	825	735
<i>Girls</i>	1032	1424	721	1096	743	830	748	777	711
<i>All children</i>	2120	2903	1497	2237	1527	1697	1539	1602	1446
<i>Bases (unweighted):</i>									
<i>Boys</i>	1972	1428	750	1142	811	841	753	815	723
<i>Girls</i>	1881	1444	737	1085	694	826	774	753	721
<i>All children</i>	3853	2872	1487	2227	1505	1667	1527	1568	1444

a At least 60 minutes of activity on all 7 days in previous week

b Children aged 2-3 were not asked about school activities, children aged 4 were included if they had started school

**Table 5.2 Proportion of children meeting physical activity guideline, (including and excluding school), 2014, by age and sex**

<i>Aged 2 - 15</i>						<i>2014</i>
<b>Proportion meeting guideline<sup>a</sup></b>	<b>Age</b>					<b>Total</b>
	2-4	5-7	8-10	11-12	13-15	
	%	%	%	%	%	%
<b>Boys</b>						
Excluding activity at school	82	79	73	71	59	73
Including activity at school	82	81	81	80	72	79
<b>Girls</b>						
Excluding activity at school	71	75	76	65	43	67
Including activity at school	71	82	83	73	53	73
<b>All Children</b>						
Excluding activity at school	76	77	75	68	52	70
Including activity at school	76	82	82	77	63	76
<i>Bases (weighted):</i>						
<i>Boys</i>	162	151	163	112	148	735
<i>Girls</i>	167	150	159	111	124	711
<i>All children</i>	329	302	321	222	272	1446
<i>Bases (unweighted):</i>						
<i>Boys</i>	163	151	162	104	143	723
<i>Girls</i>	161	169	166	102	123	721
<i>All children</i>	324	320	328	206	266	1444

a At least 60 minutes of activity on all 7 days in previous week

b Children aged 2-3 were not asked about school activities, children aged 4 were included if they had started school

**Table 5.3 Proportion of children participating in sport, 1998 to 2014**

<i>Aged 2 - 15</i>		<i>1998 to 2014</i>							
<b>Participation in any sport during last week</b>	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%
<b>Boys</b>									
Yes	72	74	74	76	73	72	67	71	68
No	28	26	26	24	27	28	33	29	32
<b>Girls</b>									
Yes	65	69	67	70	67	67	65	63	65
No	35	31	33	30	33	33	35	37	35
<b>All Children</b>									
Yes	69	72	71	73	70	69	66	67	67
No	31	28	29	27	30	31	34	33	33
<i>Bases (weighted):</i>									
Boys	1096	1514	790	1155	794	878	802	830	742
Girls	1046	1448	736	1110	763	838	759	788	720
All children	2142	2961	1526	2265	1556	1716	1561	1617	1462
<i>Bases (unweighted):</i>									
Boys	1987	1462	763	1156	823	853	763	819	729
Girls	1905	1467	752	1102	711	835	784	762	730
All children	3892	2929	1515	2258	1534	1688	1547	1581	1459

**Table 5.4 Proportion of children participating in sport, 2014, by age and sex**

<i>Aged 2 - 15</i>						<i>2014</i>
<b>Participation in any sport during last week</b>	<b>Age</b>					<b>Total</b>
	2-4	5-7	8-10	11-12	13-15	
	%	%	%	%	%	%
<b>Boys</b>						
Yes	48	67	79	79	71	68
No	52	33	21	21	29	32
<b>Girls</b>						
Yes	46	71	80	76	56	65
No	54	29	20	24	44	35
<b>All Children</b>						
Yes	47	69	79	77	64	67
No	53	31	21	23	36	33
<i>Bases (weighted):</i>						
<i>Boys</i>	164	153	165	112	149	742
<i>Girls</i>	169	150	159	113	129	720
<i>All children</i>	333	303	324	224	277	1462
<i>Bases (unweighted):</i>						
<i>Boys</i>	165	152	164	104	144	729
<i>Girls</i>	163	169	167	104	127	730
<i>All children</i>	328	321	331	208	271	1459

**Table 5.5 Adult summary activity levels, 2012 to 2014**

<i>Aged 16 and over</i>		<i>2012 to 2014</i>		
<b>Summary activity levels<sup>a</sup></b>	2012	2013	2014	
	%	%	%	
<b>Men</b>				
Meets MVPA guidelines	67	71	68	
Some activity	10	8	10	
Low activity	4	3	4	
Very low activity	19	18	19	
<b>Women</b>				
Meets MVPA guidelines	58	58	59	
Some activity	14	14	12	
Low activity	6	5	5	
Very low activity	23	23	24	
<b>All Adults</b>				
Meets MVPA guidelines	62	64	63	
Some activity	12	11	11	
Low activity	5	4	4	
Very low activity	21	21	22	
<i>Bases (weighted):</i>				
<i>Men</i>	2307	2336	2225	
<i>Women</i>	2505	2542	2411	
<i>All adults</i>	4811	4878	4636	
<i>Bases (unweighted):</i>				
<i>Men</i>	2122	2129	2054	
<i>Women</i>	2685	2747	2581	
<i>All adults</i>	4807	4876	4635	

<sup>a</sup> Meets moderate / vigorous physical activity (MVPA) guidelines: at least 150 minutes of moderately intensive physical activity or 75 minutes vigorous activity per week or an equivalent combination of both. Some activity: 60-149 minutes of moderate activity or 30-74 minutes of vigorous activity or an equivalent combination of these. Low activity: 30-59 minutes of moderate activity or 15-29 minutes of vigorous activity or an equivalent combination of these. Very low activity: Less than 30 minutes of moderate activity or less than 15 minutes of vigorous activity or an equivalent combination of these

**Table 5.6 Adult summary activity levels, 2014, by age and sex**

<i>Aged 16 and over</i>								<i>2014</i>
Summary activity level <sup>a</sup>	Age							Total
	16-24 <sup>b</sup>	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Meets MVPA guidelines	79	82	76	66	60	59	32	68
Some activity	12	6	8	9	14	9	11	10
Low activity	3	3	3	4	5	6	3	4
Very low activity	6	9	13	21	21	26	54	19
<b>Women</b>								
Meets MVPA guidelines	64	76	70	65	58	44	22	59
Some activity	11	10	10	12	11	17	15	12
Low activity	5	2	4	5	5	6	7	5
Very low activity	21	12	17	18	25	33	56	24
<b>All Adults</b>								
Meets MVPA guidelines	71	79	73	66	59	51	26	63
Some activity	11	8	9	10	13	14	13	11
Low activity	4	3	3	4	5	6	5	4
Very low activity	13	10	15	19	23	30	56	22
<i>Bases (weighted):</i>								
<i>Men</i>	320	356	353	416	345	263	173	2225
<i>Women</i>	314	373	379	435	363	294	253	2411
<i>All adults</i>	634	729	732	851	708	557	426	4636
<i>Bases (unweighted):</i>								
<i>Men</i>	202	249	303	358	356	360	226	2054
<i>Women</i>	232	335	421	427	434	419	313	2581
<i>All adults</i>	434	584	724	785	790	779	539	4635

a Meets moderate / vigorous physical activity (MVPA) guidelines: at least 150 minutes of moderately intensive physical activity or 75 minutes vigorous activity per week or an equivalent combination of both. Some activity: 60-149 minutes of moderate activity or 30-74 minutes of vigorous activity or an equivalent combination of these. Low activity: 30-59 minutes of moderate activity or 15-29 minutes of vigorous activity or an equivalent combination of these. Very low activity: Less than 30 minutes of moderate activity or less than 15 minutes of vigorous activity or an equivalent combination of these

b Physical activity guidelines for those aged 16-18 are at least one hour of moderate or vigorous activity each day. As SHes participants of that age were given the adult questionnaire, which does not ask separately about each day, they have been included in this table assessed against the adult criteria



**Table 5.7 Adult sport participation, 2014, by age and sex**

*Aged 16 and over*

2014

Participation in activity during last four weeks	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Workout at a gym / Exercise bike / Weight training	33	31	27	20	11	6	4	21
Exercises	35	31	20	14	10	5	7	19
Swimming	17	17	22	14	9	9	3	14
Running / jogging	38	25	19	15	4	1	0	16
Cycling	25	16	20	17	11	6	2	15
Hillwalking / rambling	8	11	11	12	14	6	3	10
Aerobics / Keep fit / Gymnastics / Dance for fitness	4	7	5	3	2	1	1	3
Football / rugby	40	16	16	7	1	0	-	12
Any other type of dancing	11	3	3	4	1	3	1	4
Golf	5	7	6	13	10	11	6	8
Snooker / billiards / pool	22	12	6	6	6	2	2	8
Badminton / tennis	6	6	3	2	2	-	-	3
Yoga / pilates	1	3	2	1	1	1	-	2
Bowls	1	1	1	2	3	6	5	2
Tenpin bowling	2	3	2	2	1	-	-	2
Squash	2	1	2	1	-	-	-	1
Fishing / angling	5	1	2	1	3	1	1	2
Aqua-robics / aquafit / exercise class in water	-	-	-	-	-	-	-	-
Athletics	3	1	-	2	-	-	-	1
Basketball	10	2	0	-	-	-	-	2
Climbing	2	4	3	2	1	-	-	2
Horse riding	0	-	-	0	-	-	-	0
Ice skating	0	2	1	0	-	-	-	1
Martial arts including Tai Chi	2	3	1	1	1	1	1	1
Skiing / snowboarding	0	3	0	0	1	-	-	1
Table tennis	2	2	2	0	2	1	-	1
Any other sport or exercise <sup>a</sup>	8	5	6	5	4	4	1	5
Any sport or exercise	85	79	68	60	54	40	27	62
No sport or exercise	15	21	32	40	46	60	73	38

*Continued...*

**Table 5.7 - Continued**

*Aged 16 and over*

2014

Participation in activity during last four weeks	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Women</b>								
Workout at a gym / Exercise bike / Weight training	24	23	18	15	7	7	1	14
Exercises	32	25	19	12	6	6	3	15
Swimming	25	19	19	16	11	7	1	15
Running / jogging	21	18	15	8	3	0	-	10
Cycling	5	9	9	6	5	2	1	6
Hillwalking / rambling	11	10	10	11	9	5	1	9
Aerobics / Keep fit / Gymnastics / Dance for fitness	11	17	13	14	7	8	5	11
Football / rugby	3	1	1	0	0	-	-	1
Any other type of dancing	10	7	4	6	5	5	0	5
Golf	1	0	0	2	2	1	2	1
Snooker / billiards / pool	4	2	1	1	-	-	-	1
Badminton / tennis	5	2	2	3	3	0	-	2
Yoga / pilates	6	8	6	6	3	3	1	5
Bowls	2	1	-	1	3	2	4	2
Tenpin bowling	2	3	2	1	0	-	-	1
Squash	0	0	-	0	-	-	-	0
Fishing / angling	1	0	0	1	0	1	-	0
Aqua-robics / aquafit / exercise class in water	1	1	1	3	1	2	0	1
Athletics	2	-	-	-	0	-	-	0
Basketball	1	-	0	-	-	-	-	0
Climbing	-	1	1	1	0	-	-	0
Horse riding	4	2	1	2	0	-	-	1
Ice skating	1	3	1	2	0	-	-	1
Martial arts including Tai Chi	-	1	1	0	-	0	1	1
Skiing / snowboarding	0	1	0	0	0	-	-	0
Table tennis	2	1	1	1	1	0	0	1
Any other sport or exercise <sup>a</sup>	7	7	3	3	2	2	0	4
Any sport or exercise	70	64	55	52	38	31	19	48
No sport or exercise	30	36	45	48	62	69	81	52

*Continued...*

**Table 5.7 - Continued**

*Aged 16 and over*

2014

Participation in activity during last four weeks	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>All adults</b>								
Workout at a gym / Exercise bike / Weight training	28	27	22	18	9	7	2	17
Exercises	33	28	19	13	8	6	5	17
Swimming	21	18	21	15	10	8	2	14
Running / jogging	30	21	17	11	3	1	0	13
Cycling	15	12	14	11	8	4	1	10
Hillwalking / rambling	9	10	11	12	11	6	2	9
Aerobics / Keep fit / Gymnastics / Dance for fitness	8	12	9	8	5	5	3	7
Football / rugby	22	9	8	3	1	0	-	6
Any other type of dancing	10	5	3	5	3	4	1	5
Golf	3	3	3	7	6	6	4	5
Snooker / billiards / pool	13	7	3	4	3	1	1	5
Badminton / tennis	6	4	3	3	2	0	-	3
Yoga / pilates	4	6	4	4	2	2	0	3
Bowls	2	1	0	1	3	4	4	2
Tenpin bowling	2	3	2	2	1	-	-	2
Squash	1	1	1	1	-	-	-	1
Fishing / angling	3	1	1	1	2	1	1	1
Aqua-robics / aquafit / exercise class in water	1	1	1	2	1	1	0	1
Athletics	2	0	-	1	0	-	-	1
Basketball	6	1	0	-	-	-	-	1
Climbing	1	2	2	1	1	-	-	1
Horse riding	2	1	1	1	0	-	-	1
Ice skating	0	2	1	1	0	-	-	1
Martial arts including Tai Chi	1	2	1	1	0	1	1	1
Skiing / snowboarding	0	2	0	0	1	-	-	1
Table tennis	2	1	2	1	1	1	0	1
Any other sport or exercise <sup>a</sup>	7	6	5	4	3	3	1	4
Any sport or exercise	78	71	61	56	46	35	22	55
No sport or exercise	22	29	39	44	54	65	78	45
<i>Bases (weighted):</i>								
Men	320	356	357	417	347	263	173	2233
Women	314	375	379	441	365	294	253	2421
All adults	634	731	736	859	712	557	426	4654
<i>Bases (unweighted):</i>								
Men	202	250	306	362	358	360	227	2065
Women	232	337	421	431	437	419	313	2590
All adults	434	587	727	793	795	779	540	4655

<sup>a</sup> Other sports or exercise include all named sports in the questionnaire, in which less than 0.5% of the adult population took part, i.e. canoeing, cricket, curling, hockey, netball, powerboating, rowing, sailing, shinty, skateboarding, subaqua, surfing, volleyball and waterskiing, plus any sport or form of exercise which was not listed on the questionnaire

**Table 5.8 Influence of Commonwealth games on participation, 2014 by age and sex**

*Aged 16 and over*

2014

Perceived influence of Commonwealth Games	Age			Total
	16-44	45-64	65+	
	%	%	%	%
<b>Men</b>				
<b>Before start of Commonwealth Games (23 July 2014)</b>				
I have taken up a new sport	-	0	-	0
I am thinking about taking up a new sport	2	-	-	1
I am doing more sport or physical activity	2	1	-	1
I am thinking about doing more sport or physical activity	3	2	0	2
I am more interested in sport and physical activity in general	10	6	4	7
<b>On / after start of Commonwealth Games (23 July 2014)</b>				
I have taken up a new sport	-	1	-	0
I am thinking about taking up a new sport	3	1	-	1
I am doing more sport or physical activity	2	-	-	1
I am thinking about doing more sport or physical activity	7	4	1	5
I am more interested in sport and physical activity in general	6	5	1	5
<b>Whole of 2014</b>				
I have taken up a new sport	-	1	-	0
I am thinking about taking up a new sport	2	0	-	1
I am doing more sport or physical activity	2	0	-	1
I am thinking about doing more sport or physical activity	5	3	1	3
I am more interested in sport and physical activity in general	9	6	3	6

*Continued...*

**Table 5.8 - Continued**

*Aged 16 and over*

2014

Perceived influence of Commonwealth Games	Age			Total
	16-44	45-64	65+	
	%	%	%	%
<b>Women</b>				
<b>Before start of Commonwealth Games (23 July 2014)</b>				
I have taken up a new sport	0	-	-	0
I am thinking about taking up a new sport	2	1	-	1
I am doing more sport or physical activity	2	1	-	1
I am thinking about doing more sport or physical activity	5	2	0	3
I am more interested in sport and physical activity in general	7	3	5	5
<b>On / after start of Commonwealth Games (23 July 2014)</b>				
I have taken up a new sport	-	1	-	0
I am thinking about taking up a new sport	4	1	-	2
I am doing more sport or physical activity	5	0	1	2
I am thinking about doing more sport or physical activity	6	5	2	5
I am more interested in sport and physical activity in general	6	6	1	5
<b>Whole of 2014</b>				
I have taken up a new sport	0	1	-	0
I am thinking about taking up a new sport	3	1	-	2
I am doing more sport or physical activity	3	0	0	2
I am thinking about doing more sport or physical activity	5	4	1	4
I am more interested in sport and physical activity in general	7	5	3	5

*Continued...*

**Table 5.8 - Continued**

*Aged 16 and over*

2014

Perceived influence of Commonwealth Games	Age			Total
	16-44	45-64	65+	
	%	%	%	%
<b>All adults</b>				
<b>Before start of Commonwealth Games (23 July 2014)</b>				
I have taken up a new sport	0	0	-	0
I am thinking about taking up a new sport	2	0	-	1
I am doing more sport or physical activity	2	1	-	1
I am thinking about doing more sport or physical activity	4	2	0	2
I am more interested in sport and physical activity in general	9	5	4	6
<b>On / after start of Commonwealth Games (23 July 2014)</b>				
I have taken up a new sport	-	1	-	0
I am thinking about taking up a new sport	3	1	-	2
I am doing more sport or physical activity	4	0	0	2
I am thinking about doing more sport or physical activity	6	5	2	5
I am more interested in sport and physical activity in general	6	6	1	5
<b>Whole of 2014</b>				
I have taken up a new sport	0	1	-	0
I am thinking about taking up a new sport	3	1	-	1
I am doing more sport or physical activity	2	0	0	1
I am thinking about doing more sport or physical activity	5	3	1	4
I am more interested in sport and physical activity in general	8	5	3	6

*Continued...*

**Table 5.8 - Continued**

<i>Aged 16 and over</i>				2014
<b>Perceived influence of Commonwealth Games</b>	<b>Age</b>			<b>Total</b>
	16-44	45-64	65+	
<i>Bases (weighted):</i>				
<i>Men - before start of Games</i>	271	191	118	579
<i>Men - after start of Games</i>	191	151	78	420
<i>Men - whole of 2014</i>	462	342	195	999
<i>Women - before start of Games</i>	266	196	140	602
<i>Women - after start of Games</i>	211	164	104	479
<i>Women - whole of 2014</i>	477	360	244	1081
<i>All adults - before start of Games</i>	537	387	257	1181
<i>All adults - after start of Games</i>	402	315	182	899
<i>All adults - whole of 2014</i>	939	702	439	2080
<i>Bases (unweighted):</i>				
<i>Men - before start of Games</i>	185	202	164	551
<i>Men - after start of Games</i>	124	145	105	374
<i>Men - whole of 2014</i>	309	347	269	925
<i>Women - before start of Games</i>	236	237	193	666
<i>Women - after start of Games</i>	170	179	140	489
<i>Women - whole of 2014</i>	406	416	333	1155
<i>All adults - before start of Games</i>	421	439	357	1217
<i>All adults - after start of Games</i>	294	324	245	863
<i>All adults - whole of 2014</i>	715	763	602	2080

**Table 5.9 Influence of Commonwealth games on participation (age-standardised), 2014, by area deprivation and sex**

*Aged 16 and over*

2014

Perceived influence of Commonwealth Games	Area Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>Men</b>					
I have taken up a new sport	-	0	-	0	-
I am thinking about taking up a new sport	-	1	4	0	3
I am doing more sport or physical activity	-	1	0	2	2
I am thinking about doing more sport or physical activity	4	1	6	3	3
I am more interested in sport and physical activity in general	9	7	7	5	4
<b>Women</b>					
I have taken up a new sport	0	-	-	0	1
I am thinking about taking up a new sport	2	1	1	1	4
I am doing more sport or physical activity	1	1	1	0	4
I am thinking about doing more sport or physical activity	3	3	2	6	4
I am more interested in sport and physical activity in general	6	4	4	5	5
<b>All adults</b>					
I have taken up a new sport	0	0	-	0	0
I am thinking about taking up a new sport	1	1	2	1	3
I am doing more sport or physical activity	1	1	1	1	3
I am thinking about doing more sport or physical activity	3	2	4	4	3
I am more interested in sport and physical activity in general	7	6	5	5	5
<i>Bases (weighted):</i>					
<i>Men</i>	210	209	205	212	164
<i>Women</i>	215	226	237	236	167
<i>All adults</i>	425	435	442	447	331
<i>Bases (unweighted):</i>					
<i>Men</i>	179	210	218	184	134
<i>Women</i>	212	263	262	252	166
<i>All adults</i>	391	473	480	436	300



**Table 5.10 Influence of Commonwealth games on participation, 2014, by age and presence of long-term condition**

<i>Aged 16 and over</i>				<i>2014</i>
<b>Perceived influence of Commonwealth Games</b>	<b>Age</b>			<b>Total</b>
	16-44	45-64	65+	
	%	%	%	%
<b>Limiting long-term condition</b>				
I have taken up a new sport	-	0	-	0
I am thinking about taking up a new sport	4	0	-	1
I am doing more sport or physical activity	3	0	-	1
I am thinking about doing more sport or physical activity	9	2	1	3
I am more interested in sport and physical activity in general	6	3	2	3
<b>Non-limiting long-term condition</b>				
I have taken up a new sport	-	1	-	0
I am thinking about taking up a new sport	1	-	-	1
I am doing more sport or physical activity	0	-	-	0
I am thinking about doing more sport or physical activity	4	5	1	4
I am more interested in sport and physical activity in general	3	4	3	4
<b>No long-term condition</b>				
I have taken up a new sport	0	0	-	0
I am thinking about taking up a new sport	3	1	-	2
I am doing more sport or physical activity	3	1	1	2
I am thinking about doing more sport or physical activity	4	3	1	4
I am more interested in sport and physical activity in general	9	7	5	8
<b>All adults</b>				
I have taken up a new sport	0	1	-	0
I am thinking about taking up a new sport	3	1	-	1
I am doing more sport or physical activity	2	0	0	1
I am thinking about doing more sport or physical activity	5	3	1	4
I am more interested in sport and physical activity in general	8	5	3	6

*Continued...*

**Table 5.10 - Continued**

<i>Aged 16 and over</i>				2014
<b>Perceived influence of Commonwealth Games</b>	<b>Age</b>			<b>Total</b>
	16-44	45-64	65+	
<i>Bases (weighted):</i>				
<i>Limiting long-term condition</i>	166	233	227	626
<i>Non-limiting long-term condition</i>	114	109	83	306
<i>No long-term condition</i>	659	360	129	1148
<i>All adults</i>	939	702	439	2080
<i>Bases (unweighted):</i>				
<i>Limiting longstanding illness</i>	130	257	312	699
<i>Non-limiting longstanding illness</i>	84	119	113	316
<i>No longstanding illness</i>	501	387	176	1064
<i>All adults</i>	715	763	602	2080

**Table 5.11 Reasons for participating in sport, 2012/2014 combined, by age and sex**

*Aged 16 and over who took part in any sport / exercise in the past month*      *2012/2014 combined*

Reason for participating in activity	Age						Total
	16-24	25-34	35-44	45-54	55-64	65+	
	%	%	%	%	%	%	%
<b>Men</b>							
Just enjoy it	71	70	72	69	78	73	72
To keep fit (not just to lose weight)	68	70	65	63	48	54	63
For health reasons / to improve health	16	33	41	37	35	33	32
To lose weight	11	29	40	31	21	14	25
To meet with friends	30	28	24	27	23	31	27
To improve my performance	39	30	24	26	14	15	26
To take children	0	12	26	11	8	3	11
To train / take part in a competition	30	16	17	15	8	8	17
To walk the dog	6	7	13	11	13	9	9
To help with my injury or disability	3	6	5	11	5	5	6
Part of my voluntary work	2	-	4	5	1	0	2
Other	8	6	5	8	7	3	6
<b>Women</b>							
Just enjoy it	68	65	65	63	69	71	66
To keep fit (not just to lose weight)	64	67	67	70	66	59	66
For health reasons / to improve health	20	34	39	37	39	37	34
To lose weight	36	48	39	39	33	20	37
To meet with friends	25	24	24	22	25	35	25
To improve my performance	15	18	12	13	11	6	13
To take children	8	26	22	16	9	4	15
To train / take part in a competition	11	9	8	7	3	2	7
To walk the dog	9	10	15	20	13	8	13
To help with my injury or disability	1	6	7	6	8	10	6
Part of my voluntary work	4	2	1	2	1	-	2
Other	7	4	5	5	6	4	5

*Continued...*

**Table 5.11 - Continued**

*Aged 16 and over who took part in any sport / exercise in the past month*      *2012/2014 combined*

Reason for participating in activity	Age						Total
	16-24	25-34	35-44	45-54	55-64	65+	
	%	%	%	%	%	%	%
<b>All adults</b>							
Just enjoy it	69	68	69	66	74	72	69
To keep fit (not just to lose weight)	66	69	66	66	56	56	64
For health reasons / to improve health	18	34	40	37	37	35	33
To lose weight	24	38	40	34	27	17	31
To meet with friends	27	26	24	25	24	33	26
To improve my performance	27	25	18	20	13	11	20
To take children	4	18	24	14	9	3	13
To train / take part in a competition	21	13	12	11	6	5	12
To walk the dog	8	8	14	15	13	8	11
To help with my injury or disability	2	6	6	9	6	8	6
Part of my voluntary work	3	1	2	4	1	0	2
Other	7	5	5	7	7	3	6
<i>Bases (weighted):</i>							
<i>Men</i>	266	274	237	259	190	157	1384
<i>Women</i>	253	225	235	219	159	154	1244
<i>All adults</i>	519	499	472	478	349	311	2628
<i>Bases (unweighted):</i>							
<i>Men</i>	141	174	209	223	203	219	1169
<i>Women</i>	171	184	267	244	186	198	1250
<i>All adults</i>	312	358	476	467	389	417	2419

**Table 5.12 Barriers to sports participation, 2012/2014 combined, by age and sex**

*Aged 16 and over who did not take part in any sport / exercise in past month*

*2012/2014 combined*

Barriers to being more active	Age						Total
	16-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%
<b>Men</b>							
Health isn't good enough	8	21	35	39	43	63	35
It's too difficult to find time	44	46	40	26	17	6	30
Not really interested	22	26	12	18	17	10	17
Respondent already does enough	6	9	8	10	12	7	9
It costs too much	8	3	10	6	1	-	5
No one to do it with	6	3	4	2	2	-	3
Fear of injury	9	4	6	2	3	4	5
Wouldn't enjoy it	5	1	3	5	3	3	4
Never occurred to me	-	3	3	1	5	2	2
Might feel uncomfortable or out of place	2	-	3	2	2	-	2
Not enough information on what is available	1	1	1	-	0	-	0
Weather <sup>a</sup>	1	2	4	2	1	2	2
Changing facilities are not good enough	-	-	-	-	-	1	0
Other	4	7	4	2	7	14	6
No reason	14	5	8	9	10	6	9
<b>Women</b>							
Health isn't good enough	14	32	29	34	38	63	35
It's too difficult to find time	60	52	41	28	16	3	33
Not really interested	14	11	17	27	22	12	18
Respondent already does enough	0	6	10	9	10	8	7
It costs too much	12	8	11	5	2	-	7
No one to do it with	9	3	4	5	2	1	4
Fear of injury	2	4	7	4	3	3	4
Wouldn't enjoy it	4	3	6	7	2	1	4
Never occurred to me	5	2	3	3	3	4	3
Might feel uncomfortable or out of place	7	4	5	2	3	0	4
Not enough information on what is available	3	0	1	0	-	0	1
Weather <sup>a</sup>	-	1	2	2	0	1	1
Changing facilities are not good enough	-	-	-	-	-	-	-
Other	17	8	6	3	5	9	8
No reason	4	2	4	6	10	6	5

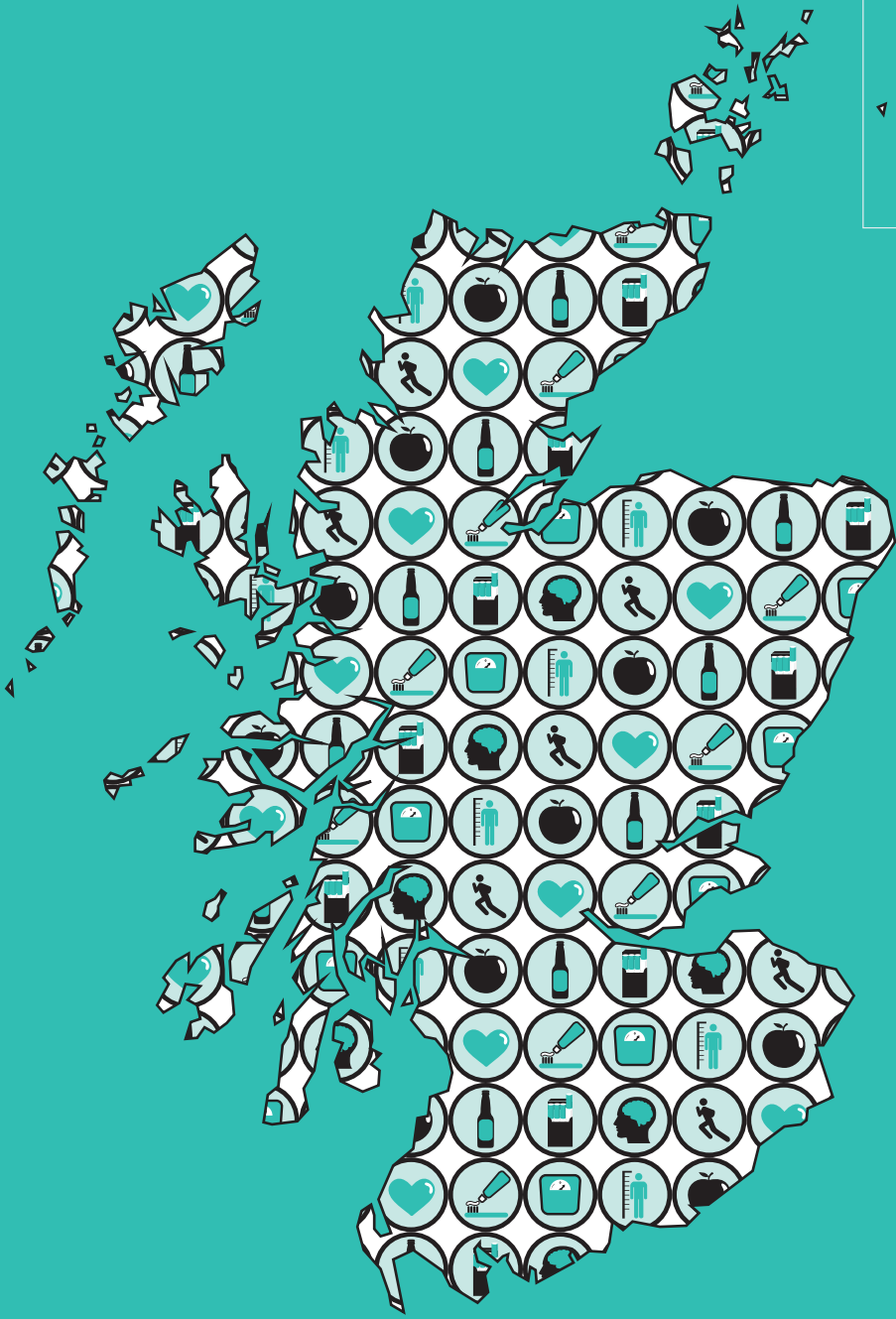
*Continued...*

**Table 5.12 - Continued**Aged 16 and over who did not take part  
in any sport / exercise in past month

2012/2014 combined

Barriers to being more active	Age						Total
	16-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%
<b>All adults</b>							
Health isn't good enough	11	27	32	36	40	63	35
It's too difficult to find time	54	50	41	27	16	5	32
Not really interested	17	17	15	23	20	12	17
Respondent already does enough	3	7	9	9	11	8	8
It costs too much	10	6	10	6	2	-	6
No one to do it with	8	3	4	4	2	1	4
Fear of injury	5	4	7	3	3	3	4
Wouldn't enjoy it	5	2	5	6	3	2	4
Never occurred to me	3	2	3	2	4	3	3
Might feel uncomfortable or out of place	5	2	4	2	3	0	3
Not enough information on what is available	2	0	1	0	0	0	1
Weather <sup>a</sup>	1	1	3	2	1	1	1
Changing facilities are not good enough	-	-	-	-	0	0	0
Other	12	7	5	2	5	11	7
No reason	8	3	6	7	10	6	7
<i>Bases (weighted):</i>							
<i>Men</i>	142	123	161	160	158	124	869
<i>Women</i>	215	147	226	209	201	195	1194
<i>All adults</i>	358	270	387	369	359	319	2062
<i>Bases (unweighted):</i>							
<i>Men</i>	78	108	155	179	224	163	907
<i>Women</i>	181	164	240	248	275	256	1364
<i>All adults</i>	259	272	395	427	499	419	2271

a Weather was not listed on the showcards, but was given as an "other" reason



# Chapter 6

## Obesity

## 6 OBESITY

Nevena Ilic

### SUMMARY

#### Adult obesity

- In 2014, 65% of adults aged 16 and over were overweight, including 28% who were obese.
- The mean body mass index (BMI) for all adults was 27.6 kg/m<sup>2</sup>, with a similar level for men (27.5) as for women (27.6).
- The level of obesity increased between 1995 and 2008 (from 17% to 26% of those aged 16-64) but has not changed significantly since.
- Mean BMI among those aged 16-64 rose from 25.2 kg/m<sup>2</sup> in 1995 to 27.2 kg/m<sup>2</sup> in 2008 and has remained relatively static since (27.4 in 2014).
- A higher proportion of men than women were overweight including obese in 2014 (69% compared with 61%), while women were more likely than men to be obese (29% compared with 26%).
- Overweight and obesity remain significantly associated with age. A majority of the population was overweight (including obese) from the 25-34 age group upwards, with levels rising to 77-78% of those aged 55-74. Around a third of people aged 45-74 (33-36%) were obese.

#### Child healthy weight, underweight, overweight and obesity

- In 2014, 68% of children aged 2-15 were in the healthy weight range. This was not significantly different to the figure in 2013 (70%).
- Just under a third (31%) of children in 2014 were at risk of overweight (including obesity), and 17% were at risk of obesity. Both these figures have been fairly stable in recent years.
- However, the proportion of girls at risk of overweight (including obesity) was at its highest level at 34% (compared with between 27% and 30% in previous years). Further years' data will be needed to determine whether this is the start of a trend.
- Girls were more likely to be at risk of overweight (including obesity) than boys (34% compared with 28%) in 2014, though the reverse has been the case in previous years.
- In 2014, 1% of all children were at risk of being underweight, with similar figures by sex (1% for both boys and girls) and by age (1% for those aged 2-11, 2% for those aged 12-15).

### 6.1 INTRODUCTION

Overweight and obesity have been defined as abnormal or excessive fat accumulation that may impair health.<sup>1,2</sup> Obesity is associated with an increased risk of a number of common causes of disease and, at high levels of obesity (BMI of 35 or above), death.<sup>3</sup> The impact of overweight and obesity upon quality of life and health is felt across the lifecourse. During childhood, those who are overweight or obese have an increased risk of conditions such as hypertension, type 2 diabetes and asthma.<sup>4,5</sup> If their weight continues to be unhealthy into adulthood, children are at an increased risk of numerous conditions associated with adult obesity, such as diabetes, cardiovascular disease, osteoarthritis and



some cancers.<sup>6,7,8</sup> There is also evidence suggesting a link between overweight and obesity in midlife and dementia in old age.<sup>9,10,11</sup>

Scotland has one of the worst obesity records among OECD countries.<sup>12</sup> Various studies have attempted to estimate the costs to the NHS in Scotland of overweight and obesity combined, with suggested figures ranging between £363 and £600 million (the majority of these costs are incurred as a result of associated conditions such as cardiovascular disease and type 2 diabetes, rather than direct costs of treating or managing overweight and obesity).<sup>13</sup> The latest estimates of the total (direct and indirect) cost of overweight and obesity to Scottish society, including labour market related costs such as lost productivity, have been put at between £0.9 billion-£4.6 billion.<sup>13</sup> The health and economic consequences of obesity mean that tackling it remains a key priority for government and public health professionals.

### 6.1.1 Policy Background

A number of government policies and initiatives aimed at addressing the issue of obesity are in place in Scotland. In the **Prevention of Obesity Route Map**, the Scottish Government and COSLA outlined their long-term commitment to tackle overweight and obesity and achieve a healthier Scotland.<sup>12</sup> The long-term goals of the route map are to have the majority of Scotland's adult population in normal weight throughout life and to have fewer overweight or obese children in Scotland.<sup>14</sup> The commitment to the latter of these goals is reinforced by the inclusion of the National Indicator to 'increase the proportion of healthy weight children' in the **National Performance Framework (NPF)**.<sup>15</sup>

The Scottish Health Survey (SHeS) is used to monitor progress towards the NPF indicator on healthy weight children and several of the **Obesity Route Map** indicators.<sup>16</sup> Scotland's children and young people's mental health indicators set also includes an indicator on child obesity prevalence.<sup>17</sup>

**Eat Better Feel Better** is a campaign aimed at promoting healthier eating as a simple, affordable choice for everyone in Scotland. Connecting people with local cooking classes, food co-ops and community groups that can offer support on nutrition and food, the campaign aims to have a long lasting effect on families and communities. It is supported by supermarkets and the convenience sector throughout Scotland and aims to get the healthier eating message to as many shoppers as possible.

Regular physical activity helps people maintain a healthy weight. One of the themes of **Legacy 2014** programmes centres around using the opportunities presented by the Games to help people be more physically active.<sup>18</sup> The **Physical Activity Implementation Plan** is one of the many legacy programmes developed under the 'active' theme to meet this desired outcome.<sup>19</sup> The 10 year plan, launched in 2014, links directly to the Scottish Government's legacy ambitions for the Commonwealth Games.

### **6.1.2 Reporting on obesity in the Scottish Health Survey (SHeS)**

The anthropometric measures presented in this chapter focus on measurements relevant to adult and child obesity. Height, weight and waist measurements have been collected during the survey interview every year since its inception in 1995.<sup>20</sup> SHeS is one of a small number of surveys that collects height, weight and waist measures as opposed to using self-reported measures which are known to be less accurate.<sup>21,22</sup> Height and weight are used to calculate Body Mass Index (BMI), the primary measure of obesity used in the SHeS series. Both adult and child trends in BMI are examined in this chapter. Waist measurements will be reported in the 2015 Annual Report. Supplementary tables are also available on the Scottish Government SHeS website.<sup>23</sup>

### **6.1.3 Comparability with other UK statistics**

Adult obesity is defined consistently in the Scottish Health Survey and the other health surveys within the UK using BMI classifications. Height and weight measurements are self-reported in the Welsh Health Survey and are therefore not directly comparable with equivalent statistics in Scotland, England and Northern Ireland, where direct measurements are taken. Sampling methodologies differ between the surveys.

A Government Statistical Service publication on the comparability of official statistics across the UK advises that adult obesity figures taken from Scottish Health Survey, Health Survey for England, Welsh Health Survey and Health Survey Northern Ireland are not comparable.<sup>24</sup> Of the four UK health surveys, the Scottish Health Survey and Health Survey for England are the most closely aligned.

## **6.2 METHODS AND DEFINITIONS**

### **6.2.1 Methods**

Full details of the protocols used for collecting height, weight and waist circumference measurements are included in Volume 2 of this report and are briefly summarised here.

#### **Height**

Height was measured using a portable stadiometer with a sliding head plate, base plate and three connecting rods marked with a metric measuring scale. Participants were asked to remove shoes. One measurement was taken, with the participant stretching to the maximum height and the head positioned in the Frankfort plane.<sup>25</sup> The reading was recorded to the nearest even millimetre. No measurement was taken from participants who were pregnant, aged under 2, or unsteady on their feet.

## Weight

Weight was measured using Seca and Tanita electronic scales with a digital display. Participants were asked to remove shoes and any bulky clothing. A single measurement was recorded to the nearest 100g. A weight measurement was not collected from participants who were pregnant, aged under 2, or unsteady on their feet. Those who weighed more than 130 kg were asked for an estimate of their weight because the scales are inaccurate above this level. These estimated weights were included in the analysis presented in this chapter.

In the analysis of height and weight, data from those who were considered by the interviewer to have unreliable measurements, for example those who had excessive clothing on, were excluded.

### 6.2.2 Definitions

#### Body Mass Index (BMI)

Body Mass Index (BMI) is a widely accepted measure that allows for differences in weight due to height. It is defined as weight (kg)/square of height ( $m^2$ ). This has been used as a measure of obesity in SHeS since its inception in 1995. BMI was calculated from valid measures collected by the interviewer.

#### Adult BMI classification

Based on their BMI, adult participants were classified into the following groups based on the World Health Organisation (WHO) classification:<sup>26</sup>

BMI (kg/m <sup>2</sup> )	Description
Less than 18.5	Underweight
18.5 to less than 25	Normal
25 to less than 30	Overweight, excluding obese
30 to less than 40	Obese, excluding morbidly obese
40+	Morbidly obese

In this chapter, both mean BMI and prevalence for the five categories outlined in the table above are presented for adults. Although obesity has the greatest ill-health and mortality consequences, overweight is also a major public health concern, not least because overweight people are at high risk of becoming obese. Being underweight can also have negative health consequences.

#### Child BMI classification

BMI is defined for children in the same way as it is for adults: weight (kg)/square of height ( $m^2$ ). The International Obesity Task Force concluded that BMI is a reasonable measure of adiposity in children<sup>27</sup> and it is the key measure of overweight and obesity for children used in the SHeS series. Waist measurements were not collected in the child interview.

Despite the relatively wide acceptance of the use of BMI as an adiposity indicator, the establishment of an agreed specific obesity and overweight classification system for children and young people remains challenging. Constant changes in body composition during growth mean that the relationship between weight-for-height and adiposity during childhood and adolescence is age-dependent, and this relationship is further complicated by both ethnicity and gender.<sup>28</sup>

The classification of children's BMI used in this chapter, set out below, has been derived from BMI percentiles of the UK 1990 reference curves<sup>29,30</sup> (referred to as the national BMI percentiles classification); these have been used in each SHeS to date. The national BMI percentiles classification has been shown to be reasonably sensitive (i.e. not classifying obese children as non-obese) and specific (i.e. not classifying non-obese children as obese).<sup>31,32</sup> SIGN recommends that these reference curves and thresholds should be used for population surveillance in Scotland.<sup>7</sup> The 85th / 95th percentile cut-off points are commonly accepted thresholds used to analyse overweight and obesity in children. These thresholds have previously been used to describe childhood overweight and obesity prevalence trends in the UK.<sup>33,34,35,36</sup>

<b>Percentile cut-off</b>	<b>Description</b>
At or below 2 <sup>nd</sup> percentile	At risk of underweight
Above 2 <sup>nd</sup> percentile and below 85 <sup>th</sup> percentile	Healthy weight
At or above 85 <sup>th</sup> percentile and below 95 <sup>th</sup> percentile	At risk of overweight
At or above 95 <sup>th</sup> percentile	At risk of obesity

SHeS uses a method developed by ISD Scotland to plot the exact ages of the children in the sample against the reference population data.<sup>37</sup> While children's exact age was used to calculate the BMI grouping prevalence rates (based on the interview date and the date of birth), results are presented using grouped ages based on age at last birthday. As noted in the introduction to this chapter, one of the Scottish Government's national indicators relates to healthy weight in children, defined as neither underweight nor overweight or obese.<sup>38</sup> The presented data have been categorised to show the total proportions that are: healthy weight, at risk of overweight, at risk of obesity, and at risk of underweight.

Other changes, made to the presentation of child BMI data in 2012 are discussed in detail in Chapter 7 of the 2012 annual report.<sup>39</sup>

## **6.3 ADULT OVERWEIGHT AND OBESITY PREVALENCE AND MEAN BMI**

### **6.3.1 Trends in overweight including obesity prevalence since 1995**

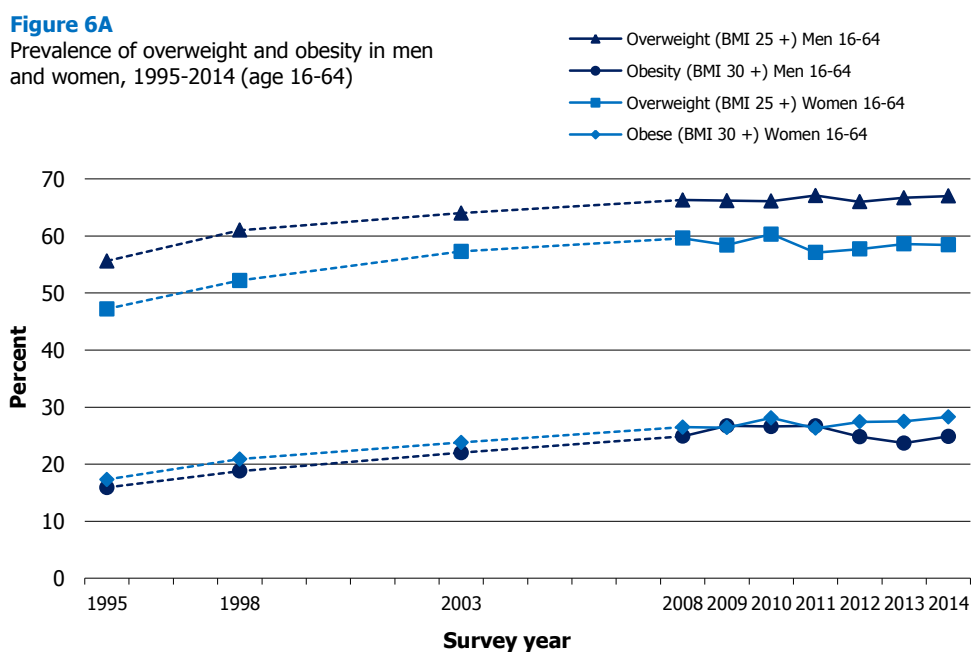
Trends in the prevalence of overweight including obesity (BMI of 25 kg/m<sup>2</sup> or above) are presented in Table 6.1. Trends are presented for adults aged 16-64 from 1995, and for all adults aged 16 and over from

2003. The discussion that follows concentrates on the longer trend, as the larger changes in prevalence occurred between 1995 and 2003. Patterns of change in all adults (aged 16 and over) since 2003 are very similar to patterns for those aged 16-64.

The prevalence of overweight, including obesity and morbid obesity in adults aged 16-64, rose significantly between 1995 (52%) and 2008 (63%) with little change since then (ranging between 62% and 63%); it was 63% in 2014. Figures for all adults (aged 16 and over) from 2003 onwards were around one or two percentage points higher than for adults aged 16-64 in all years for which data were available (65% in 2014).

This pattern of change was very similar for both men and women. The prevalence of overweight including obesity in adults aged 16-64 has been consistently higher in men than in women in all years since 1995. For both men and women, overweight and obesity levels rose significantly between 1995 and 2008 (from 56% to 66% of men aged 16-64 and from 47% to 60% of women), with little change since then (67% of men were overweight in 2014, as were 58% of women).

**Figure 6A, Table 6.1**



### 6.3.2 Trends in obesity and morbid obesity prevalence since 1995

The proportion of adults aged 16-64 who were obese or morbidly obese (BMI of 30kg/m<sup>2</sup> or above) rose significantly between 1995 (17%) and 2008 (26%), and has remained at a similar level since (27% in 2014). Figures for all adults (aged 16 and over) were zero or one percentage point higher than for adults aged 16-64 each year (28% in 2014).

Over time, obesity trends have followed the same patterns for both men and women. Among women, obesity prevalence increased significantly

among those aged 16-64 from 17% in 1995 to 27% in 2008, with little change since (28% in 2014). Among men, it rose from 16% in 1995 to 25% in 2008, and remained at the same level in 2014.

The prevalence of morbid obesity (BMI of 40kg/m<sup>2</sup> or above) among adults aged 16-64 increased from 1% in 1995 to 3% in 2003, and has remained around that level since then (3% in 2014). Morbid obesity prevalence has been consistently higher in women aged 16-64 than men of the same age in each year since 1998. It increased significantly for both sexes since 1995, from 1% of men and 1% of women to 2% of men and 4% of women in 2014. **Figure 6A, Table 6.1**

### 6.3.3 Trends in mean adult BMI since 1995

The mean BMI for adults aged 16-64 increased significantly between 1995 (25.8 kg/m<sup>2</sup>) and 2008 (27.2 kg/ m<sup>2</sup>) and stayed at similar levels through to 2014 (27.4 kg/ m<sup>2</sup>).

A similar pattern was seen for both men and women of a rise from 1995 (26.0kg/m<sup>2</sup> for men and 25.7kg/m<sup>2</sup> for women) to 2008 (27.2 kg/ m<sup>2</sup> and 27.3 kg/ m<sup>2</sup>) and then showing no notable change to 2014 (27.3kg/m<sup>2</sup> for men and 27.4kg/m<sup>2</sup> for women). The mean BMI has not, however, changed significantly since 2008 for either men or women. The mean BMI for all adults aged 16 and over has been 0.1 to 0.2 kg/m<sup>2</sup> higher than that for adults aged 16-64 each year (in 2014, 27.6 kg/m<sup>2</sup> for all adults and 27.4 kg/m<sup>2</sup> for those aged 16-64). **Table 6.1**

### 6.3.4 Adult BMI in 2014, by age and sex

Just under two thirds of adults aged 16 and over (65%) were overweight including obese (BMI of 25 kg/m<sup>2</sup> or above) in 2014, while over one quarter (28%) were obese (BMI of 30 kg/m<sup>2</sup> or above). At 27.6 kg/m<sup>2</sup>, the mean BMI was higher than the recommended healthy range of 18.5 kg/m<sup>2</sup> to less than 25 kg/m<sup>2</sup>.

Men were more likely than women to be overweight including obese (69% compared with 61%), whereas obesity prevalence was higher among women than men (29% versus 26%). In total, 2% of both men and women were underweight, while only 29% of men and 37% of women were of a healthy weight.

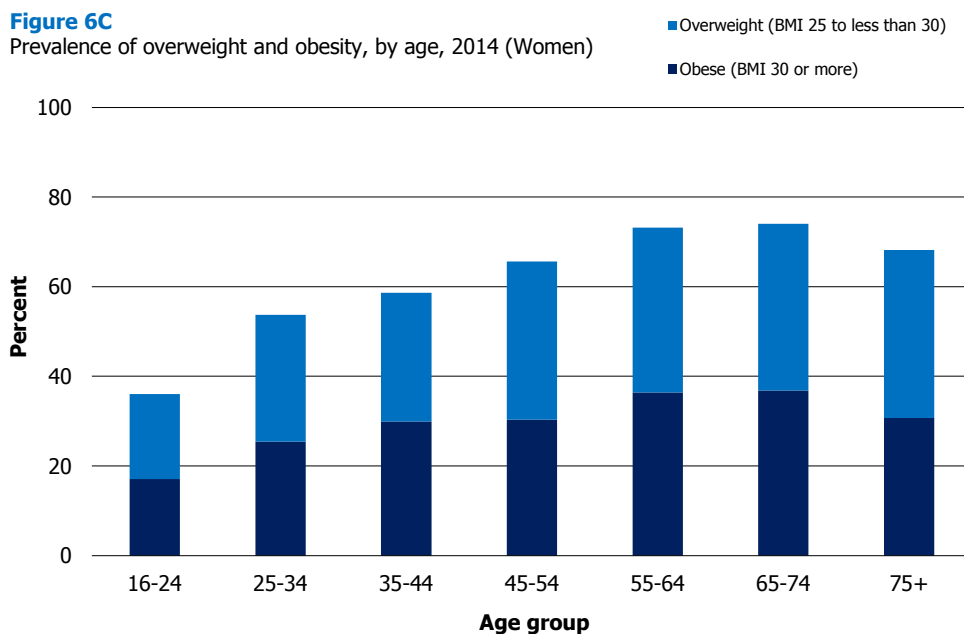
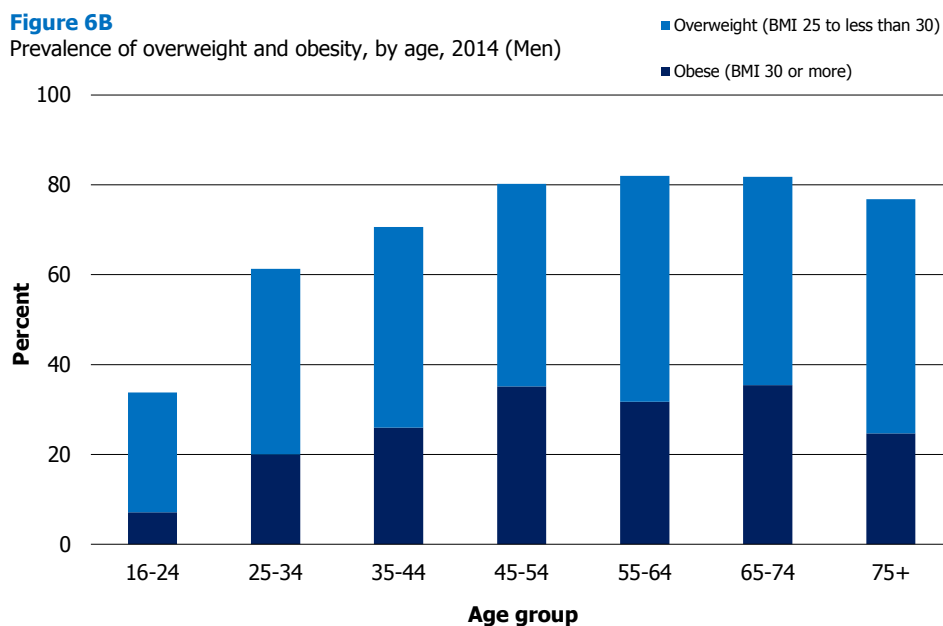
Mean BMI was similar for men and women in 2014 (27.5 kg/m<sup>2</sup> for men and 27.6 kg/m<sup>2</sup> for women).

Overweight (including obesity) prevalence was lowest among young people aged 16-24 (35%). A significantly higher proportion of those aged 25-34 were overweight (57%), with further increases with age up to age 65-74. Over three quarters of those aged 55-74 were overweight including obese (77-78%), as were 72% of those in the oldest age group (75+).

Obesity rates increased from one in eight (12%) of those in the youngest age group (aged 16-24) to around one in three (33-36%) of those aged 45-74. Again, prevalence for those aged 75 and over (28%) was slightly lower than those in middle-age groups.

Mean BMI followed a similar pattern, increasing with age from 24.4 kg/m<sup>2</sup> for those aged 16-24, to 28.9 kg/m<sup>2</sup> for those aged 65-74.

**Figures 6B, Figure 6C, Table 6.2**



## 6.4 CHILD HEALTHY WEIGHT, OVERWEIGHT AND OBESITY

### 6.4.1 Trends in child healthy weight, overweight and obesity prevalence since 1998

A child is described as being of a healthy weight if their BMI falls above the 2<sup>nd</sup> percentile and below the 85<sup>th</sup> percentile of the UK 1990 reference curves. In 2014, 68% of children had a BMI within the healthy weight range. This figure has fluctuated around this level since 1998, and is not significantly different to the 70% seen in 2013.

Patterns of healthy weight prevalence have been more volatile for boys and girls than for all children combined. In 2014, 70% of boys were of a healthy weight, the same proportion as in 1998 and not significantly different to 2013 (67%). However, the figures for boys have seen some fluctuations, for example the figures of 61% in 2008 and 63% in 2011. Among girls, there has been slightly less variation in healthy weight prevalence over time. The 2014 level of 65% was significantly lower than that observed in 2013 (72%) and is the lowest figure recorded in any survey year. Further years' data will be needed to determine whether this is the start of a trend, rather than just random sample fluctuations.

The proportion of children at risk of overweight, including obesity (BMI at or above the 85<sup>th</sup> percentile), has also fluctuated over the years, following an inverse pattern to that seen for healthy weight. Since 1998, the proportion of children aged 2-15 at risk of overweight, including obesity, has fluctuated between 29% and 33%, and was 31% in 2014.

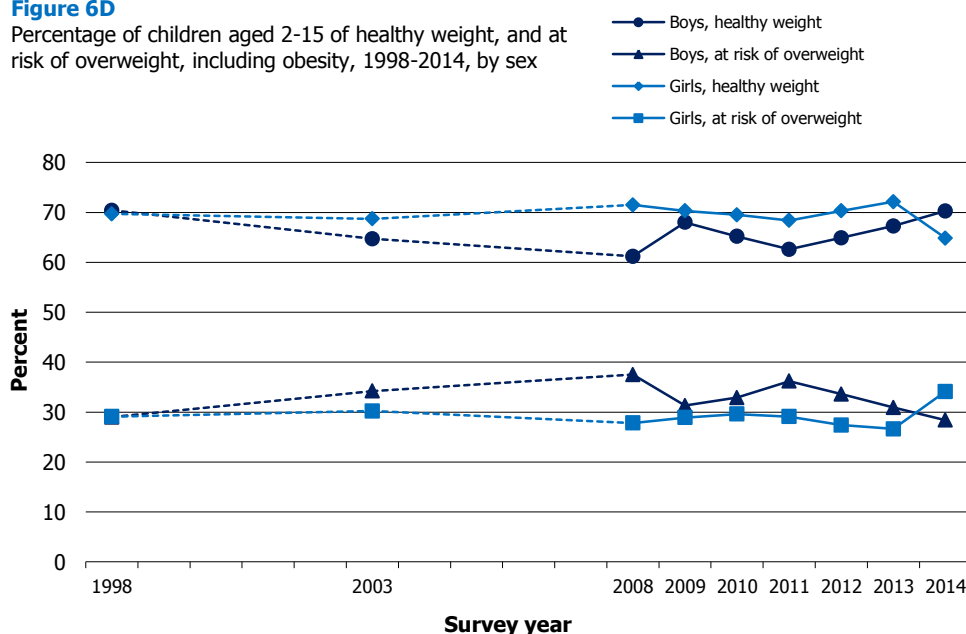
Trends in the proportion of children at risk of overweight, including obesity, for boys and girls also follow the inverse of the patterns discussed above for healthy weight. The proportion of boys at risk of overweight in 2014 was 28%, similar to the level in 1998 (29%), but significantly below that in 2008 (38%) and 2011 (36%). For girls, the proportion of children at risk of overweight including obesity was 34% in 2014, significantly higher than in 2013 (27%). As for the figures on healthy weight, further years' data will be needed to determine whether this is the start of a trend.

**Figure 6D, Table 6.3**



**Figure 6D**

Percentage of children aged 2-15 of healthy weight, and at risk of overweight, including obesity, 1998-2014, by sex



The percentage of children at risk of obesity (BMI at or above the 95<sup>th</sup> percentile) increased from 14% to 17% in the decade 1998 to 2008, and has remained around that level since 2014 (17%). In some of the previous years (e.g. 2011 and 2012), a significantly higher proportion of boys than girls were at risk of obesity. This was not true in 2014 (the figures were not significantly different). The apparent rise in both the proportion of girls at risk of obesity between 2012 and 2014, and fall in the proportion of boys at risk of obesity over the same period, was not significant and may therefore be due to sampling fluctuation. **Table 6.3**

#### 6.4.2 Child BMI categories in 2014, by age and sex

In 2014, two-thirds (68%) of children aged 2-15 had a BMI within the healthy weight range, while almost one-third (31%) were at risk of being overweight or obese, and 1% were at risk of being underweight.

In 2014, 70% of boys and 65% of girls were of a healthy weight. The prevalence of healthy weight in children decreased with age, from 72% of those aged 2-6, 68% of those aged 7-11 and 61% of those aged 12-15.

This difference by age was not statistically significant for boys (between 66% and 72% for all age groups). However, the rate of decrease with age for girls was much more evident, with 73% of those aged 2-6 in the healthy weight category falling to 63% of those aged 7-11 and 56% of those aged 12-15.

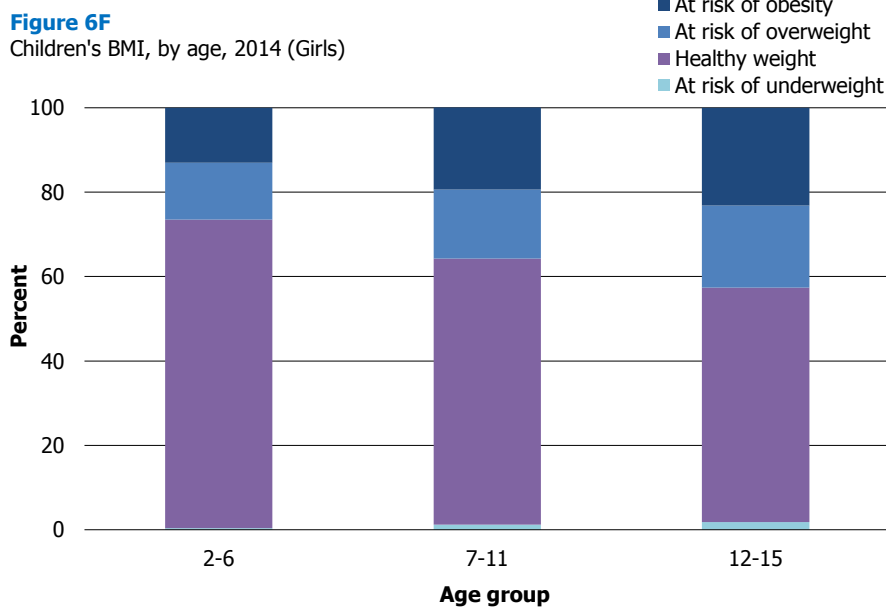
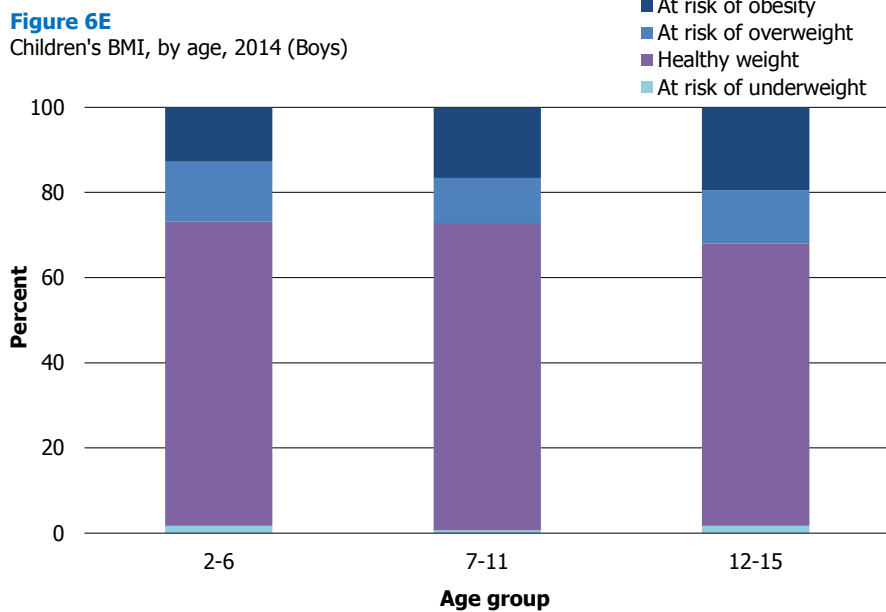
The proportion of children at risk of overweight (including obesity) varied significantly by both sex and age in 2014, with 28% of boys and 34% of girls being overweight (including obese). In all other years since 1998, the proportion has been higher for boys than for girls, therefore this difference may be due to sampling fluctuation.

There were no differences by sex for those at risk of being underweight (1% for both boys and girls) or by age (1% for those aged 2-11, 2% for those aged 12-15).

At age 2-6, the proportion of boys at risk of overweight, including obesity, matched that for girls (both 27%). However, increases in this proportion with age were not significant for boys, but they were for girls. By age 12-15, 32% of boys and 43% of girls were at risk of overweight, including obesity.

The percentage of boys and girls at risk of obesity did not vary significantly from each other (16% and 18%, respectively), while risk of obesity increased with age among all children (from 13% at age 2-6 to 18% at age 7-11 and 21% at age 12-15), with similar patterns for boys and girls.

**Figure 6E, Figure 6F, Table 6.4**



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- 18 See: [www.legacy2014.co.uk/what-is-legacy/legacy-programmes](http://www.legacy2014.co.uk/what-is-legacy/legacy-programmes)
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- 20 Waist measurements are collected from a random sub-sample of adults and are not reported in this chapter. The most recent published results on waist size can be found in the obesity chapter of the 2013 report. [www.gov.scot/Publications/2014/12/9982/0](http://www.gov.scot/Publications/2014/12/9982/0)
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- 23 See: [www.gov.scot/scottishhealthsurvey](http://www.gov.scot/scottishhealthsurvey)
- 24 See: [gss.civilservice.gov.uk/wp-content/uploads/2014/02/Comparability-Report-Final.pdf](http://gss.civilservice.gov.uk/wp-content/uploads/2014/02/Comparability-Report-Final.pdf)
- 25 The Frankfort Plane is an imaginary line passing through the external ear canal and across the top of the lower bone of the eye socket, immediately under the eye. Participants' heads are positioned with the Frankfort Plane in a horizontal position when height is measured using a stadiometer as a means of ensuring that, as far as possible, the measurements taken are standardised.
- 26 These cut-offs differ to those used in the previous surveys. In 1995 and 1998 the normal weight range was defined as 20-25 kg/m<sup>2</sup>, in 2003 it was changed to 18.5-25 kg/m<sup>2</sup>. From 2008 onwards the ranges are defined as set out below. This brings the definition in line with WHO recommendations. The impact of the change of definition is very marginal as very few people have a BMI measurement that is exactly 18.5, 25, 30 or 40 kg/m<sup>2</sup>.
- |                | <b>2003</b>    | <b>2008 onwards</b>  |
|----------------|----------------|----------------------|
| Underweight    | 18.5 or under  | Less than 18.5       |
| Normal weight  | Over 18.5 – 25 | 18.5 to less than 25 |
| Overweight     | Over 25 – 30   | 25 to less than 30   |
| Obese          | Over 30 – 40   | 30 to less than 40   |
| Morbidly obese | Over 40        | 40+                  |
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- <sup>38</sup> See: [www.gov.scot/About/Performance/scotPerforms/indicator/healthyweight](http://www.gov.scot/About/Performance/scotPerforms/indicator/healthyweight)
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**Table 6.1 Mean adult BMI, prevalence of overweight and obesity, 1995 to 2014**

*Aged 16 and over with valid height and weight measurements*

*1995 to 2014*

<b>BMI (kg/m<sup>2</sup>)</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%	%
<b>Men</b>										
<b>25 and over<sup>a</sup></b>										
16-64	56	61	64	66	66	66	67	66	67	67
16+	n/a	n/a	65	69	68	68	69	68	68	69
<b>30 and over<sup>b</sup></b>										
16-64	16	19	22	25	27	27	27	25	24	25
16+	n/a	n/a	22	26	27	27	28	27	25	26
<b>40 and over<sup>c</sup></b>										
16-64	1	1	2	1	1	2	2	2	1	2
16+	n/a	n/a	2	1	1	2	2	2	1	2
<b>Mean</b>										
16-64	26.0	26.4	26.9	27.2	27.4	27.3	27.4	27.1	27.1	27.3
16+	n/a	n/a	27.0	27.4	27.5	27.5	27.6	27.3	27.3	27.5
<b>SE of the mean</b>										
16-64	0.07	0.07	0.12	0.13	0.13	0.15	0.14	0.16	0.14	0.20
16+	n/a	n/a	0.12	0.12	0.12	0.13	0.12	0.14	0.13	0.17
<b>Women</b>										
<b>25 and over<sup>a</sup></b>										
16-64	47	52	57	60	58	60	57	58	59	58
16+	n/a	n/a	60	62	61	62	60	60	61	61
<b>30 and over<sup>b</sup></b>										
16-64	17	21	24	27	26	28	26	27	27	28
16+	n/a	n/a	26	28	28	29	28	28	29	29
<b>40 and over<sup>c</sup></b>										
16-64	1	2	4	4	4	4	4	4	4	4
16+	n/a	n/a	3	3	4	3	4	3	4	4
<b>Mean</b>										
16-64	25.7	26.3	26.9	27.3	27.2	27.4	27.3	27.2	27.3	27.4
16+	n/a	n/a	27.2	27.4	27.4	27.6	27.5	27.3	27.5	27.6
<b>SE of the mean</b>										
16-64	0.08	0.09	0.14	0.15	0.14	0.14	0.14	0.16	0.19	0.18
16+	n/a	n/a	0.14	0.13	0.12	0.12	0.12	0.14	0.16	0.16

*Continued...*

**Table 6.1 - Continued**

*Aged 16 and over with valid height and weight measurements*

*1995 to 2014*

<b>BMI (kg/m<sup>2</sup>)</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%	%
<b>All adults</b>										
<b>25 and over<sup>a</sup></b>										
16-64	52	57	61	63	62	63	62	62	63	63
16+	n/a	n/a	62	65	64	65	64	64	65	65
<b>30 and over<sup>b</sup></b>										
16-64	17	20	23	26	27	27	27	26	26	27
16+	n/a	n/a	24	27	27	28	28	27	27	28
<b>40 and over<sup>c</sup></b>										
16-64	1	1	3	3	2	3	3	3	3	3
16+	n/a	n/a	3	2	2	2	3	3	2	3
<b>Mean</b>										
16-64	25.8	26.4	26.9	27.2	27.3	27.4	27.3	27.1	27.2	27.4
16+	n/a	n/a	27.1	27.4	27.4	27.5	27.5	27.3	27.4	27.6
<b>SE of the mean</b>										
16-64	0.05	0.06	0.10	0.11	0.10	0.11	0.11	0.12	0.13	0.15
16+	n/a	n/a	0.09	0.10	0.09	0.10	0.10	0.11	0.12	0.12
<i>Bases (weighted):</i>										
<i>Men 16-64</i>	3672	3673	2702	2238	2598	2487	2513	1706	1650	1574
<i>Men 16+</i>	n/a	n/a	3217	2689	3129	2992	3003	2048	2005	1919
<i>Women 16-64</i>	3632	3572	2776	2257	2553	2435	2478	1640	1685	1616
<i>Women 16+</i>	n/a	n/a	3458	2828	3208	3046	3100	2063	2095	2028
<i>All adults 16-64</i>	7757	7245	5478	4495	5151	4922	4991	3346	3336	3190
<i>All adults 16+</i>	n/a	n/a	6675	5517	6336	6038	6103	4110	4099	3948
<i>Bases (unweighted):</i>										
<i>Men 16-64</i>	3303	3110	2368	1822	2107	2020	2092	1381	1399	1305
<i>Men 16+</i>	n/a	n/a	3016	2454	2817	2674	2745	1876	1827	1771
<i>Women 16-64</i>	4005	3783	2908	2293	2678	2553	2596	1676	1783	1632
<i>Women 16+</i>	n/a	n/a	3684	3019	3449	3327	3389	2221	2280	2198
<i>All adults 16-64</i>	7776	6893	5276	4115	4785	4573	4688	3057	3182	2937
<i>All adults 16+</i>	n/a	n/a	6700	5473	6266	6001	6134	4097	4107	3969

a 25 and over = overweight / obese / morbidly obese

b 30 and over = obese / morbidly obese

c 40 and over = morbidly obese



**Table 6.2 Adult BMI, 2014, by age and sex**

*Aged 16 and over with valid height and weight measurements*

2014

BMI (kg/m <sup>2</sup> )	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Less than 18.5	9	2	0	0	0	1	-	2
18.5 to less than 25	57	37	29	20	18	18	23	29
25 to less than 30	27	41	45	45	50	46	52	43
30 to less than 40	5	19	22	33	30	34	22	24
40+	2	1	4	2	2	1	3	2
<i>All 25 and over<sup>a</sup></i>	34	61	71	80	82	82	77	69
<i>All 30 and over<sup>b</sup></i>	7	20	26	35	32	35	25	26
Mean	23.9	26.4	28.1	28.7	28.6	28.8	28.0	27.5
Standard error of the mean	0.46	0.35	0.52	0.28	0.28	0.30	0.38	0.17
<b>Women</b>								
Less than 18.5	7	2	2	-	1	2	3	2
18.5 to less than 25	57	45	40	34	26	24	28	37
25 to less than 30	19	28	29	35	37	37	38	32
30 to less than 40	16	21	27	25	32	33	29	26
40+	1	4	3	5	5	3	2	4
<i>All 25 and over<sup>a</sup></i>	36	54	59	66	73	74	68	61
<i>All 30 and over<sup>b</sup></i>	17	25	30	30	36	37	31	29
Mean	24.8	27.2	27.6	28.4	28.6	28.9	27.5	27.6
Standard error of the mean	0.49	0.39	0.37	0.41	0.31	0.34	0.38	0.16
<b>All adults</b>								
<i>All 25 and over<sup>a</sup></i>	35	57	65	73	77	78	72	65
<i>All 30 and over<sup>b</sup></i>	12	23	28	33	34	36	28	28
Mean	24.4	26.8	27.8	28.5	28.6	28.9	27.7	27.6
Standard error of the mean	0.33	0.28	0.33	0.26	0.22	0.23	0.27	0.12
<i>Bases (weighted):</i>								
<i>Men</i>	264	312	328	372	297	215	130	1919
<i>Women</i>	262	321	337	384	313	232	180	2028
<i>All adults</i>	526	634	665	756	611	448	309	3948
<i>Bases (unweighted):</i>								
<i>Men</i>	176	220	277	322	310	296	170	1771
<i>Women</i>	197	294	380	381	380	342	224	2198
<i>All adults</i>	373	514	657	703	690	638	394	3969

a 25 and over = overweight (including obese)

b 30 and over = obese

**Table 6.3 Proportion of children with BMI within the healthy range, at risk of overweight and at risk of obesity, 1998 to 2014**

<i>Aged 2-15 with valid height and weight measurements<sup>a</sup></i>								<i>1998 to 2014</i>	
<b>BMI status (National BMI percentiles)</b>	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%
<b>Boys</b>									
Within healthy range <sup>b</sup>	70	65	61	68	65	63	65	67	70
Outwith healthy range <sup>c</sup>	30	35	39	32	35	37	35	33	30
At risk of overweight (including obesity) <sup>d</sup>	29	34	38	31	33	36	34	31	28
At risk of obesity <sup>e</sup>	15	18	19	17	18	20	20	17	16
<b>Girls</b>									
Within healthy range <sup>b</sup>	70	69	72	70	70	68	70	72	65
Outwith healthy range <sup>c</sup>	30	31	29	30	31	32	30	28	35
At risk of overweight (including obesity) <sup>d</sup>	29	30	28	29	30	29	27	27	34
At risk of obesity <sup>e</sup>	14	14	14	16	14	15	14	15	18
<b>All children</b>									
Within healthy range <sup>b</sup>	70	67	66	69	67	65	68	70	68
Outwith healthy range <sup>c</sup>	30	33	34	31	33	35	33	30	32
At risk of overweight (including obesity) <sup>d</sup>	29	32	33	30	31	33	31	29	31
At risk of obesity <sup>e</sup>	14	16	17	16	16	17	17	16	17
<i>Bases (weighted):</i>									
<i>Boys</i>	985	1243	669	958	641	655	663	687	620
<i>Girls</i>	931	1182	621	924	612	621	620	660	590
<i>All children</i>	1916	2425	1290	1882	1253	1276	1283	1347	1210
<i>Bases (unweighted):</i>									
<i>Boys</i>	1780	1208	652	967	662	643	630	678	608
<i>Girls</i>	1704	1215	640	914	569	626	644	630	602
<i>All children</i>	3484	2423	1292	1881	1231	1269	1274	1308	1210

a Children whose BMI was more than 7 standard deviations above or below the norm for their age were excluded from the table. The 1998 to 2011 figures have been revised as prior to 2012 cases which were more than 3 standard deviations above or below the mean for all children were excluded

b BMI above 2nd percentile, below 85th percentile. The 1998 to 2011 figures have been revised as prior to 2012 the range was above 5th percentile and below 85th percentile

c BMI at or below 2nd percentile, at or above 85th percentile

d BMI at or above 85th percentile

e BMI at or above 95th percentile

**Table 6.4 Children's BMI, 2014, by age and sex**

*Aged 2-15 with valid height and weight measurements<sup>a</sup>*

2014

BMI status (National BMI percentiles)	Age			Total
	2-6	7-11	12-15	
	%	%	%	%
<b>Boys</b>				
At risk of underweight <sup>b</sup>	2	1	2	1
Healthy weight <sup>c</sup>	71	72	66	70
At risk of overweight <sup>d</sup>	14	11	12	12
At risk of obesity <sup>e</sup>	13	17	20	16
<i>Outwith healthy range<sup>f</sup></i>	29	28	34	30
<i>Overweight (including obese)<sup>g</sup></i>	27	27	32	28
<b>Girls</b>				
At risk of underweight <sup>b</sup>	0	1	2	1
Healthy weight <sup>c</sup>	73	63	56	65
At risk of overweight <sup>d</sup>	13	16	19	16
At risk of obesity <sup>e</sup>	13	19	23	18
<i>Outwith healthy range<sup>f</sup></i>	27	37	44	35
<i>Overweight (including obese)<sup>g</sup></i>	27	36	43	34
<b>All children</b>				
At risk of underweight <sup>b</sup>	1	1	2	1
Healthy weight <sup>c</sup>	72	68	61	68
At risk of overweight <sup>d</sup>	14	13	16	14
At risk of obesity <sup>e</sup>	13	18	21	17
<i>Outwith healthy range<sup>f</sup></i>	28	32	39	32
<i>Overweight (including obese)<sup>g</sup></i>	27	32	37	31
<i>Bases (weighted):</i>				
<i>Boys</i>	219	231	170	620
<i>Girls</i>	212	235	143	590
<i>All children</i>	431	466	312	1210
<i>Bases (unweighted):</i>				
<i>Boys</i>	221	227	160	608
<i>Girls</i>	217	246	139	602
<i>All children</i>	438	473	299	1210

a Children whose BMI was more than 7 standard deviations above or below the norm for their age were excluded from the table

b BMI at or below 2nd percentile

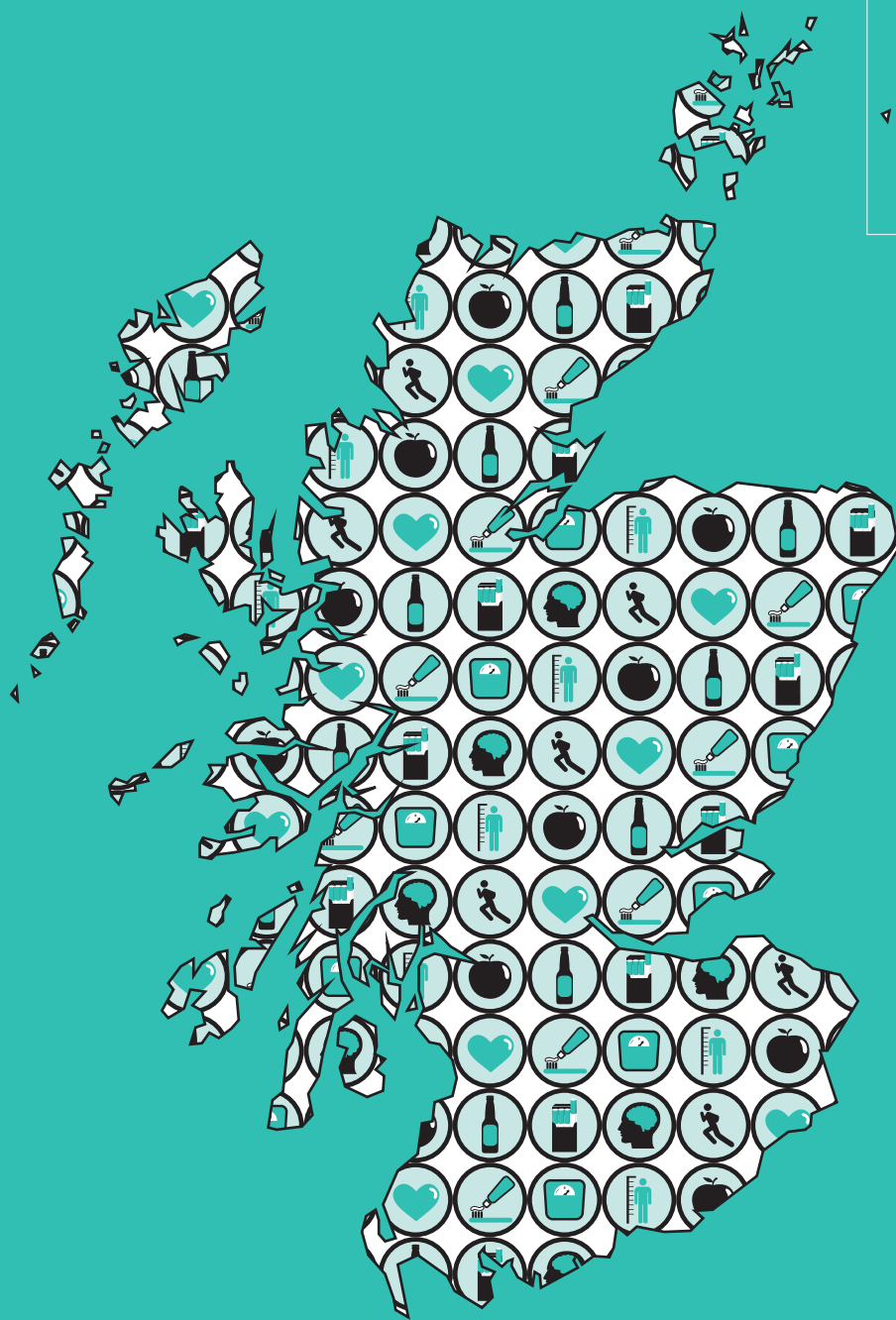
c BMI above 2nd percentile, below 85th percentile

d BMI at or above 85th percentile, below 95th percentile

e BMI at or above 95th percentile

f BMI at or below 2nd percentile, at or above 85th percentile

g BMI at or above 85th percentile



# Chapter 7

## Respiratory health

## 7 RESPIRATORY HEALTH

Hayley Lepps

### SUMMARY

#### **Asthma diagnoses and wheezing symptoms**

- In 2014, the reported lifetime prevalence of doctor-diagnosed asthma was 17% for adults aged 16 and over, an increase from 13% in 2003. Prevalence for children aged 0-15 was 11%, a decrease from 16% in 2003.
- Wheezing in the past 12 months was reported by 18% of adults and 12% of children in 2014, with higher prevalence of wheezing at any point in the past (30% of adults and 22% of children).
- Wheezing symptoms in adults were significantly associated with the Scottish Index of Multiple Deprivation (SIMD), with prevalence increasing as area deprivation increased. In the least deprived areas, 12% of adults had wheezed in the last 12 months, and 26% had ever wheezed. In the most deprived areas these figures were 26% and 36% respectively.
- Asthma diagnoses were not associated with deprivation (between 16 and 20% in each deprivation quintile).
- Smoking status was associated with asthma among women and with wheezing symptoms for both sexes. Asthma prevalence was 33% among women who smoked 20 or more cigarettes a day, compared with 16-17% of never or ex-smokers.
- Wheezing in the past twelve months was almost four times higher, and ever wheezing was twice as high, in smokers of 20 or more cigarettes a day compared with never or ex-occasional smokers.

#### **Chronic Obstructive Pulmonary Disease (COPD)**

- In 2014, 4% of adults aged 16 and over had doctor-diagnosed COPD. This figure has not changed significantly since 2008.
- COPD increased markedly with age, from 0-1% in the 16-44 age group, to 10% of those aged 75 and over. COPD prevalence was higher among women than men, particularly so in the 65-74 age group.
- COPD prevalence was 2% in the two least deprived SIMD quintiles compared with 8% in the most deprived.
- Just 1% of never or ex-occasional smokers reported COPD. This rose to 8% in men, and 17% in women, who smoked 20 or more cigarettes a day.
- In 2012/2013/2014, 69% of adults with COPD said they had received treatment or advice for their condition (67% of men, 71% of women).
- The most commonly reported treatments / advice were: medication (66%), check-ups (59%), immunisations (34%) and stop-smoking advice (21%).

#### **Phlegm and breathlessness**

- In 2012/2014, 10% of adults aged 16 and over reported phlegm production on most days (for at least three months a year), and 23% reported breathlessness either when hurrying or going uphill, or when walking on level ground (a more severe form of symptoms). These figures have not changed significantly since 2003.
- As previously reported, phlegm production was more common in men than

women while the reverse was true for breathlessness. Both sets of symptoms increased with age.

- Men's phlegm production has declined since 2003, but with no recent significant changes, while the trend for women has been stable since 2003.
- Phlegm production increased with deprivation, from 6% in the least deprived areas to 16% in the most. The equivalent figures for breathlessness were 14% and 35%, respectively.
- Phlegm production and breathlessness were more common among smokers than non-smokers. Among smokers, higher levels of both symptoms were reported by smokers of 20 or more cigarettes a day than by smokers of fewer than 20 a day.

## 7.1 INTRODUCTION

Long-term respiratory conditions such as asthma and Chronic Obstructive Pulmonary Disease (COPD) represent a significant challenge for the individuals that live with them, and for health services. Both these conditions are, at present, incurable, and both are thought to be widely underdiagnosed.<sup>1,2</sup>

The UK has one of the world's highest rates of asthma,<sup>3</sup> an illness characterised by variable and recurring symptoms of breathlessness, wheezing, coughing and chest tightness. It is estimated that 368,000 people in Scotland are currently receiving treatment for asthma, 72,000 of whom are children.<sup>4</sup>

The reasons for the high prevalence of asthma in the UK are not clear, with the existence of the condition being associated with genetic factors, as well as environmental pollutants, including maternal smoking during pregnancy.<sup>5</sup> Factors associated with the onset of asthma attacks are wide ranging and include exposure to house dust mites, pollen, animals, specific foods, viral infections, moulds, fungi, environmental tobacco smoke,<sup>6</sup> and air pollution.<sup>7</sup> Occupational exposures account for a substantial proportion of adult asthma incidence.<sup>8</sup> In many cases, asthma does not significantly affect quality of life when it is properly controlled.<sup>9</sup> The economic burden on the NHS in Scotland is estimated to be around £100 million a year, most of which is accounted for by prescription costs.<sup>10</sup>

COPD is a much rarer chronic and irreversible lung condition caused by restricted airways resulting in breathing difficulties, persistent coughing and abnormal sputum production.<sup>11</sup> The breathing restrictions associated with COPD are a major cause of repeated hospital admissions in Scotland.<sup>12</sup> Estimates suggest that treating COPD also costs the NHS in Scotland around £100 million a year.<sup>12</sup>

Like asthma, the risk of COPD is increased by exposure to environmental pollutants and smoking. However, the role played by smoking is far greater in the case of COPD than asthma. While asthma often appears in childhood or adolescence, COPD onset occurs in middle to late adulthood (though early life experiences, including childhood asthma, can increase its risk).<sup>13,14</sup>

### 7.1.1 Policy background

One of the Scottish Government's **National Performance Framework National Outcomes** is for people in Scotland to 'live longer, healthier lives'.<sup>15</sup> There is also a National Performance Indicator to 'reduce premature mortality' (deaths from all causes in those aged under 75).<sup>16</sup> COPD is a major cause of death in Scotland, hence COPD prevention and better symptom management contributes to reducing premature mortality.<sup>12</sup> In addition, a number of the National Indicators<sup>17</sup> and many of the major public health initiatives that have been introduced in recent years are linked to key respiratory disease risk factors, most notably smoking,<sup>18</sup> but also physical activity<sup>19</sup> and obesity.<sup>20</sup>

Both asthma and COPD are included in the Quality and Outcomes Framework used to measure general practice performance, though only COPD has an associated outcome measure (newly introduced in 2013/14 relating to the measurement of oxygen saturation values).<sup>21</sup>

### 7.1.2 Reporting on respiratory conditions and symptoms in the Scottish Health Survey (SHeS)

The Scottish Health Survey (SHeS) is an important source of information on the self-reported prevalence of asthma and COPD in Scotland. In addition, it collects information about respiratory symptoms such as phlegm production, wheezing and breathlessness, many of which are experienced by people without a diagnosed respiratory condition. It also provides valuable information on the patterning of these conditions and symptoms across different groups in society. In this chapter trends in adults' self-reported doctor-diagnosed asthma and COPD prevalence, and respiratory symptoms (wheezing, phlegm and breathlessness) are provided. Children's asthma diagnoses and wheezing symptoms are also reported (no other results for children are presented beyond trends). Supplementary tables are also available on the Scottish Government SHeS website.<sup>22</sup>

## 7.2 METHODS

### 7.2.1 Asthma and COPD diagnoses

Participants (including parents of children aged 0-12, and children themselves aged 13-15) were asked if a doctor had ever told them they had asthma. This question was asked in the 1998, 2003, 2008 and 2010 surveys, and has been included every year since 2012. Annually since 2008, adult participants have also been asked if they had ever had COPD, chronic bronchitis or emphysema, and if so, whether a doctor had told them they had one of these conditions. Those who reported doctor-diagnosed COPD were also asked what treatment or advice they had received. No objective measures were used to confirm these self-reported diagnoses.

## 7.2.2 Respiratory symptoms

Questions on respiratory symptoms were included in the 1995-2003 surveys, and in all even years since 2008. The symptoms covered were: phlegm production, breathlessness and wheezing or whistling in the chest. Breathlessness was classified as grade 2 if it occurred when hurrying on level ground or walking up a slight hill, or grade 3 (the more severe form), if it occurred when walking with other people of the same age on level ground. The impact of such symptoms on sleep and people's daily activities was also measured. The MRC Respiratory Symptom Questionnaire was used to collect some of this information.<sup>23</sup>

In this chapter, wheezing symptoms (for adults and children) are reported alongside the data on asthma diagnoses. The results for adult phlegm and breathlessness symptoms are presented in a separate section, and use the combined 2012/2014 data to increase the number of cases available for analysis.

## 7.3 DOCTOR-DIAGNOSED ASTHMA AND SELF-REPORTED WHEEZING

This section looks at the reported lifetime prevalence of doctor-diagnosed asthma, wheezing or whistling in the chest in the last 12 months (referred to in the text as wheezing in the last 12 months), and lifetime wheezing. Trend data are presented for all adults aged 16 and above from 2003, and for adults aged 16-74 from 1998. Data are also presented for all children, aged 0-15, from 2003, and for children aged 2-15 from 1998. As these questions were only asked of sub-samples in 2008 and 2010, data for those years have been combined.

### 7.3.1 Trends in asthma and wheezing prevalence since 1998

#### *Adults*

Lifetime asthma prevalence in adults aged 16 and above increased from 13% in 2003 to 17% in 2014, with no significant change since 2012. Figures for those aged 16-74 show that the upward trend started earlier (11% in 1998, 13% in 2003, and 18% in 2014).

The prevalence of wheezing in the last 12 months among all adults has been stable at 18% since 2012, slightly higher than in the years 2008/2010 combined (15%) and not significantly different from the 16% in 2003. Figures for adults aged 16-74 show the same pattern as for all adults, with no change in the earlier survey years.

The prevalence of ever having wheezed followed a similar pattern; it remained at 25-26% from 2003 to 2008/2010 combined, and has been a little higher, at 30-31%, since 2012 (30% in 2014). Again, the trend for adults aged 16-74 was very similar to that for all adults.

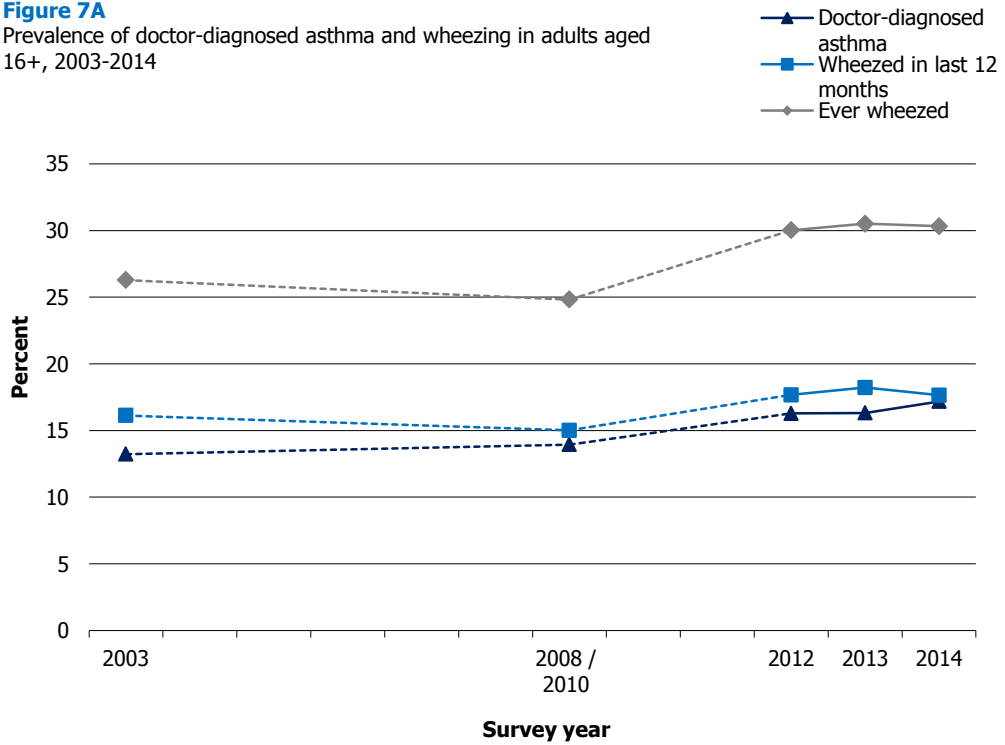
The separate figures for men and women followed the same patterns as those for all adults, for all three conditions reported.

**Figure 7A, Table 7.1**



**Figure 7A**

Prevalence of doctor-diagnosed asthma and wheezing in adults aged 16+, 2003-2014



### **Children**

Table 7.1 also shows trends in the prevalence of lifetime asthma diagnoses and wheezing symptoms in children. In 2014, 11% of children aged 0-15 had a diagnosis of asthma, while 12% of children aged 0-15 had wheezed in the past twelve months and 22% had ever wheezed. The small differences between boys and girls were not statistically significant.

The 2014 figure for asthma in all children (11%) is in line with those since 2008/2010, and confirms the pattern of a decline between since 2003, when 16% of children had a diagnosis of asthma. The prevalence of wheezing symptoms in children has been largely stable since 2003.

**Table 7.1**

### **7.3.2 Asthma and wheezing prevalence in adults in 2014, by age and sex**

The lifetime prevalence of doctor-diagnosed asthma in adults aged 16 and over in 2014 was 17% (16% for men, 18% for women). Wheezing in the last 12 months was reported by 18% of men and women, while ever wheezing prevalence was higher at 30% (31% for men, 30% for women).

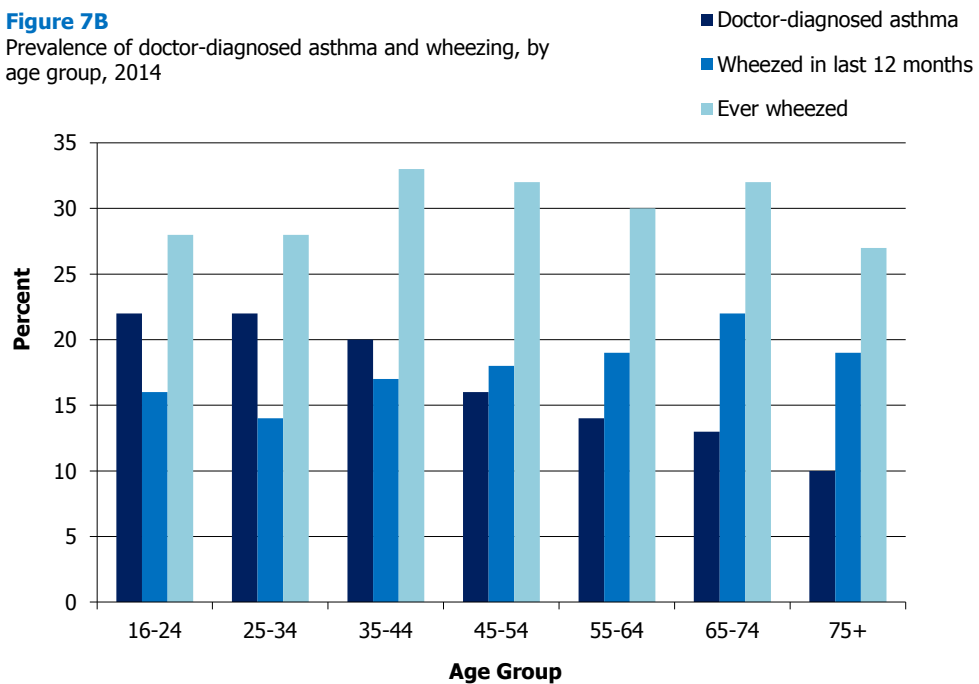
Asthma was more prevalent in the younger age groups; 20-22% for those aged 16-44 compared with 13-16% for those aged 45-74, and 10% for those aged 75 and over. In contrast, differences in wheezing in the last 12 months were much smaller overall, and a little more prevalent in the older age groups (14-17% of those aged 16-44 reported recent wheezing compared with 18-22% for those aged 45 and over). Prevalence of ever wheezing was reasonably stable across all age

groups (27-33%) with no clear patterns. The separate overall figures for men and women were generally similar for all three conditions reported.

**Figure 7B, Table 7.2**

**Figure 7B**

Prevalence of doctor-diagnosed asthma and wheezing, by age group, 2014



### 7.3.3 Asthma and wheezing prevalence in 2014, by area deprivation

Area deprivation was measured using the Scottish Index of Multiple Deprivation (SIMD), grouped into quintiles. To ensure that the comparisons presented by SIMD are not confounded by the different age profiles of the sub-groups, the figures reported in Table 7.3 (and all other SIMD tables reported below) have been age-standardised (age-standardisation is described in the Glossary).

Although lifetime doctor-diagnosed asthma prevalence varied somewhat by SIMD quintile (more so for women than men), it was not statistically significant. In contrast, wheezing in the last 12 months was significantly associated with area deprivation with prevalence increasing from 12% in the least deprived quintile to 26% in the most deprived. The pattern was the same for men and women. Prevalence of ever wheezing was associated with deprivation in the same way, with prevalence lowest in the least deprived quintile (26%) and highest in the most deprived (36%). Again, the pattern was the same for men and women.

**Table 7.3**

### 7.3.4 Asthma and wheezing prevalence in 2014, by smoking status

To ensure that the comparisons presented by smoking status are not confounded by the different age profiles of the sub-groups, the figures reported in Table 7.4 (and all other smoking status tables reported below) have been age-standardised (as noted, age-standardisation is described in the Glossary).

Smoking status was significantly associated with asthma diagnoses and wheezing symptoms, but with different patterns evident for these conditions. The age-standardised lifetime prevalence of doctor-diagnosed asthma was 16% for never or only occasional ex-smokers, 19% for ex-regular smokers, and 18% for current smokers of fewer than 20 cigarettes a day, compared with 26% for smokers of 20 or more a day. However, this difference was largely due to big differences among women, for whom asthma prevalence was as high as 33% in smokers of 20 or more cigarettes a day, but ranged from 16-21% for all other smoking status groups. In contrast, asthma prevalence was 15-22% for men across the smoking status groups.

Both measures of wheezing (ever or in the last 12 months) showed an increase in prevalence across the four smoking status groups, for both men and women. For example, the age-standardised prevalence of wheezing in the last 12 months was 11% in those who have never smoked, 20% in ex-regular smokers, 28% in smokers of fewer than 20 cigarettes a day, and 41% in smokers of 20 or more cigarettes a day. Prevalence of ever wheezing was twice as high in those who smoked 20 or more a day (49%), compared with those who have never smoked (24%). While these patterns were broadly similar for both sexes, wheezing symptoms were higher among women who smoke 20 or more a day than for their male counterparts.

**Table 7.4**

## **7.4 DOCTOR-DIAGNOSED COPD**

This section looks at the reported prevalence of doctor-diagnosed Chronic Obstructive Pulmonary Disease (COPD), in adults aged 16 and over.

### **7.4.1 Trends in COPD prevalence in adults since 2008**

The prevalence of doctor-diagnosed COPD in adults aged 16 and over has been stable since 2008, ranging from 3-5% between 2008 and 2010, and remaining at 4% since 2011. In every year except 2012, women have consistently reported prevalence one percentage point higher than men.

**Table 7.5**

### **7.4.2 COPD prevalence in 2014, by age and sex**

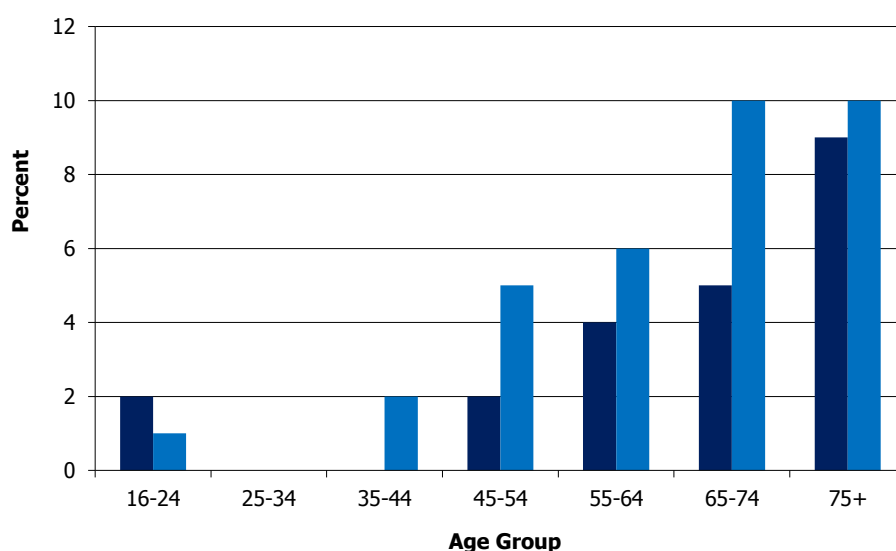
There was a strong gradient by age, with very low rates of COPD among adults aged 16-44 (0-1%), rising to 10% in adults aged 75 and over. Although this overall pattern held for both sexes, as Figure 7C illustrates, women reported higher prevalence of COPD, most notably for the 65-74 age group.

**Figure 7C, Table 7.6**

**Figure 7C**

Prevalence of doctor-diagnosed COPD, by age and sex, 2014

■ Men ■ Women



#### 7.4.3 COPD prevalence in 2014, by area deprivation

Doctor-diagnosed COPD was associated with area deprivation, with the lowest age-standardised prevalence (2%) found among adults in the two least deprived SIMD quintiles, and the highest prevalence (8%) in the most deprived. The pattern was broadly similar for men and women.

**Table 7.7**

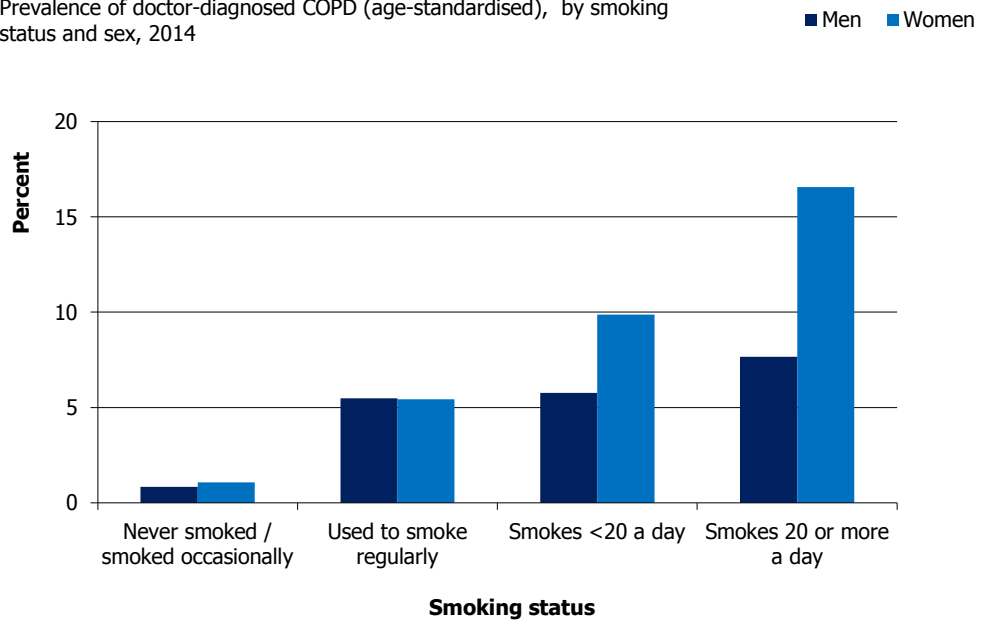
#### 7.4.4 COPD prevalence in 2014, by smoking status

For both men and women the age-standardised prevalence of COPD was strongly associated with smoking status, though the pattern was more pronounced for women. Doctor-diagnosed COPD was reported by 1% of adults who had never smoked (at all or regularly). Prevalence increased to 5% for ex-regular smokers and 8% for current smokers of fewer than 20 cigarettes a day. COPD prevalence then increased to 12% among smokers of more than 20 cigarettes a day. As Figure 7D illustrates, the figures for women who smoked fewer than 20 cigarettes a day were almost twice as high as the figures for men who smoked an equivalent amount (10% compared with 6%). The same pattern applies to those who smoked 20 or more a day (17% for women, compared with 8% for men).

**Figure 7D, Table 7.8**

**Figure 7D**

Prevalence of doctor-diagnosed COPD (age-standardised), by smoking status and sex, 2014



#### 7.4.5 COPD treatment and advice in 2012/2013/2014

To increase the sample size available, the detailed analysis of COPD treatment and advice uses data from the 2012, 2013 and 2014 surveys combined. Table 7.9 presents the overall levels of treatment and advice reported by adults with COPD, as well as the specific types they mentioned, for those aged 16-64, and 65 and over. Seven out of ten (69%) adults with COPD said they had received treatment / advice for their condition (67% of men and 71% of women). Treatment / advice varied by age, with 63% of those aged 16-64 saying they had received this, compared with 76% of those aged 65 and over. This difference was largely driven by men's experiences, as women with COPD reported similar treatment / advice levels in both age-groups (70% of those aged 16-64; 73% of those aged 65 and over). In contrast, among men with COPD, 53% of those aged 16-64 reported receiving treatment / advice compared with 82% of those aged 65 and over.

The most frequently reported forms of treatment / advice for doctor-diagnosed COPD were: medication (tablets / inhalers) at 66%; regular check-ups with GP / hospital / clinic at 59%; immunisations against flu / pneumococcus at 34%, and advice or treatment to stop smoking at 21%. With the exception of smoking advice, the most common treatments tended to be mentioned more often by those aged 65 and over compared with those aged 16-64. The largest gaps in terms of percentage points between the older and younger age groups were for regular check-ups (69% and 51%, respectively) and medication (73% and 58%, respectively). Reflecting the overall patterns for men and women described above, much larger differences in treatment / advice by age were evident for men than for women.

**Table 7.9**

## **7.5 PHLEGM PRODUCTION AND BREATHLESSNESS**

This section looks at the reported prevalence of the MRC Respiratory Symptom Questionnaire symptoms of phlegm production and breathlessness. Trends from 1995 onwards are reported for adults aged 16-64, while trends from 2003 are based on adults aged 16 and over. Data from the 2008 and 2010 surveys have been combined, as have data from 2012 and 2014, with earlier data representing single years only.

### **7.5.1 Trends in phlegm production and breathlessness in adults since 1995**

Between 2003 and 2012/2014 there was a small decline in the proportion of men who reported producing phlegm from their chest on most days for at least three months of the year (14% in 2003 and 11% in 2012/2014). Prevalence for women and for all adults did not change significantly over the same time period (9% of women and 10% of all adults reported this type of phlegm production in 2012/2014). These patterns for both men and women were also shown in the longer trend going back to 1995 for adults aged 16-64.

The prevalence among all adults of any reported breathlessness (grades 2 and 3 combined) did not change significantly between 2003 and 2012/2014 (24% in 2003 and 23% in 2012/2014), although there was a small decrease in the prevalence of milder forms of breathlessness (grade 2) (13% in 2003 and 11% in 2012/2014). These patterns were also apparent for men, but there were no significant changes for women, who had higher prevalence of breathlessness. The longer trend for adults aged 16-64 showed a fall in levels of grade 2 breathlessness, for both men and women, from 17% of all adults aged 16-64 in 1995 to 9% in 2012/2014, while levels of grade 3 breathlessness remained fairly constant (8-9%).

**Table 7.10**

### **7.5.2 Phlegm production and breathlessness in 2012/2014, by age and sex**

Using combined 2012/2014 data, 10% of adults aged 16 and over reported phlegm production on most days (for at least three months a year), and 23% reported any breathlessness (grades 2 and 3 combined). Men were more likely than women to report producing phlegm from their chest (11% compared with 9%), whereas women were more likely than men to report breathlessness (26% compared with 19%). Prevalence increased with age for both phlegm production (from 5% for those aged 16-24, to 15% for those aged 75 and over) and breathlessness (8% and 45%, respectively).

**Table 7.11**

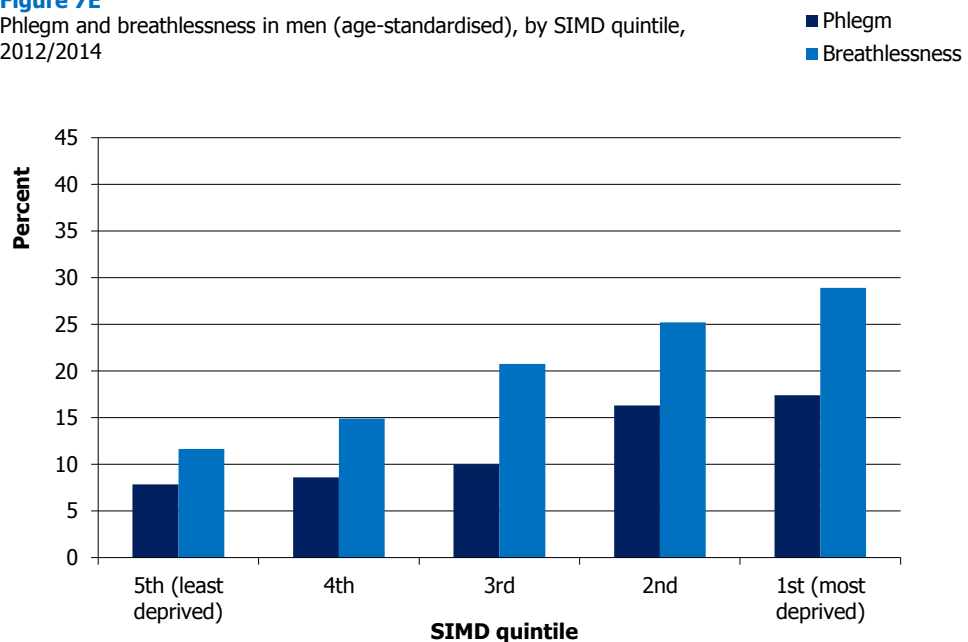
### **7.5.3 Phlegm production and breathlessness in 2012/2014, by area deprivation**

Phlegm production and breathlessness also increased by level of deprivation (using age-standardised and 2012/2014 combined figures). Reported phlegm increased from 6% in the least deprived SIMD quintile to 16% in the most deprived, while the equivalent figures for reported

breathlessness showed an even bigger absolute increase, from 14% to 35%, respectively. These patterns were the same for men and women, although as Figures 7E and 7F illustrate, the absolute difference was greater for women reporting breathlessness, with 40% of women in the most deprived quintile reporting this symptom compared with 29% of men in similarly deprived areas. **Figure 7E, Figure 7F, Table 7.12**

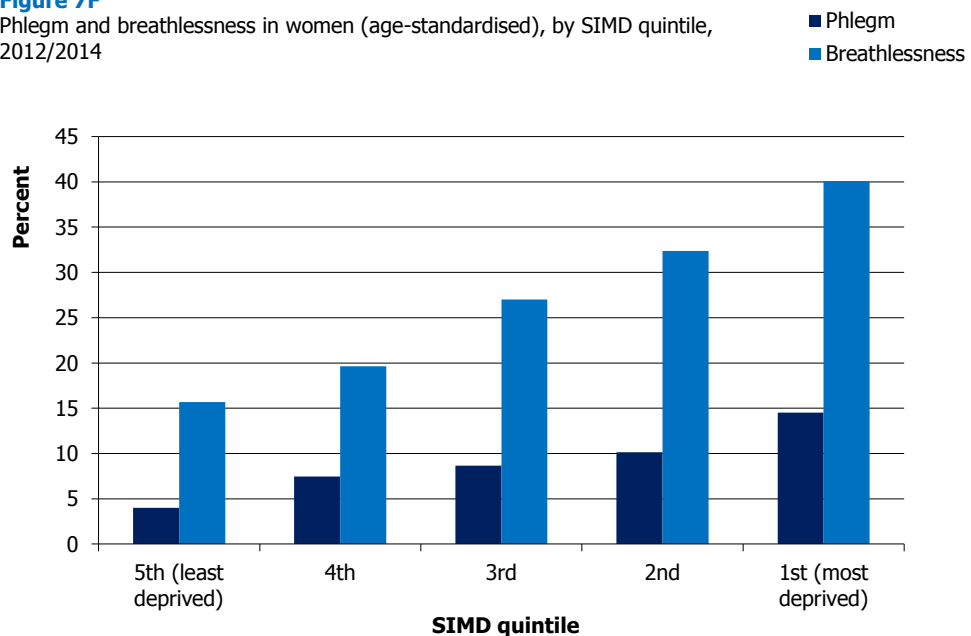
**Figure 7E**

Phlegm and breathlessness in men (age-standardised), by SIMD quintile, 2012/2014



**Figure 7F**

Phlegm and breathlessness in women (age-standardised), by SIMD quintile, 2012/2014



#### 7.5.4 Phlegm production and breathlessness in 2012/2014, by smoking status

Both phlegm production and breathlessness were associated with smoking status (these figures have been age-standardised and use combined 2012/2014 data). The prevalence of phlegm increased from

5-8% for non or ex-smokers, to 34% for those who smoked 20 or more cigarettes a day, while reported breathlessness increased steadily across each group, from 17% for those who have never smoked (regularly or at all) to 41% for those who smoke 20 or more cigarettes a day.

Reported phlegm figures were very similar for men and women across all smoking groups, with the exception of smokers of fewer than 20 cigarettes a day (23% for men, 16% for women). In contrast, prevalence of breathlessness was higher for women than men in each group, with the widest gap found among smokers of 20 or more a day (age-standardised prevalence of 36% for men compared with 48% for women).

**Table 7.13**



## References and notes

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- 15 See: [www.scotland.gov.uk/About/Performance/scotPerforms/outcome](http://www.scotland.gov.uk/About/Performance/scotPerforms/outcome)
- 16 See: [www.scotland.gov.uk/About/Performance/scotPerforms/indicator/mortality](http://www.scotland.gov.uk/About/Performance/scotPerforms/indicator/mortality)
- 17 See: [www.gov.scot/About/Performance/scotPerforms](http://www.gov.scot/About/Performance/scotPerforms)
- 18 See: [www.scotland.gov.uk/About/Performance/scotPerforms/indicator/smoking](http://www.scotland.gov.uk/About/Performance/scotPerforms/indicator/smoking)
- 19 See: [www.scotland.gov.uk/About/scotPerforms/indicator/physicalactivity](http://www.scotland.gov.uk/About/scotPerforms/indicator/physicalactivity)
- 20 See: [www.scotland.gov.uk/About/scotPerforms/indicator/healthyweight](http://www.scotland.gov.uk/About/scotPerforms/indicator/healthyweight)
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<sup>22</sup> See: [www.scotland.gov.uk/scottishhealthsurvey](http://www.scotland.gov.uk/scottishhealthsurvey)

<sup>23</sup> Prior to 2012 a fuller version of the MRC Respiratory Symptoms Questionnaire was included in the 1995-2003 and 2008 and 2010 surveys, alongside questions about wheezing and whistling in the chest that were added to the survey in 1998 as part of the asthma module. To reduce duplication and participant burden, from 2012 onwards the MRC Questionnaire items on wheezing were cut (the questions on phlegm and breathlessness were retained).

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**Table 7.1 Doctor-diagnosed asthma, wheezed in last 12 months, and ever wheezed, 1998 to 2014, by age and sex**

<i>All persons</i>		<i>1998 to 2014</i>				
<b>Respiratory symptoms and asthma</b>	1998	2003	2008/ 2010 combined	2012	2013	2014
	%	%	%	%	%	%
<b>Males</b>						
<b>Doctor-diagnosed asthma</b>						
0-15	n/a	20	14	15	15	12
2-15	19	21	15	17	16	13
16-74	11	13	13	16	16	17
16+	n/a	13	13	16	16	16
<b>Wheezed in last 12 months<sup>a</sup></b>						
0-15	n/a	16	14	15	17	13
2-15	16	16	14	15	16	12
16-74	16	16	14	17	16	17
16+	n/a	16	14	17	17	18
<b>Ever wheezed</b>						
0-15	n/a	29	24	27	28	24
2-15	27	30	25	29	29	25
16-74	25	27	24	30	29	30
16+	n/a	27	24	30	29	31
<b>Females</b>						
<b>Doctor-diagnosed asthma</b>						
0-15	n/a	12	12	9	12	10
2-15	16	14	14	10	13	12
16-74	12	14	16	17	18	19
16+	n/a	14	15	17	17	18
<b>Wheezed in last 12 months<sup>a</sup></b>						
0-15	n/a	12	11	11	12	12
2-15	14	11	10	11	11	12
16-74	15	16	16	18	20	18
16+	n/a	16	16	18	19	18
<b>Ever wheezed</b>						
0-15	n/a	20	19	19	22	20
2-15	23	21	20	19	21	22
16-74	24	26	25	30	32	31
16+	n/a	26	25	30	32	30

*Continued...*

**Table 7.1 - Continued**

<i>All persons</i>		<i>1998 to 2014</i>				
<b>Respiratory symptoms and asthma</b>	1998	2003	2008/ 2010 combined	2012	2013	2014
	%	%	%	%	%	%
<b>All</b>						
<b>Doctor-diagnosed asthma</b>						
0-15	n/a	16	13	12	13	11
2-15	18	18	14	13	15	13
16-74	11	13	14	17	17	18
16+	n/a	13	14	16	16	17
<b>Wheezed in last 12 months<sup>a</sup></b>						
0-15	n/a	14	12	13	14	12
2-15	16	13	12	13	13	12
16-74	16	16	15	18	18	17
16+	n/a	16	15	18	18	18
<b>Ever wheezed</b>						
0-15	n/a	25	22	23	25	22
2-15	25	25	23	24	25	23
16-74	25	26	25	30	31	31
16+	n/a	26	25	30	31	30
<i>Bases (weighted):</i>						
<i>Males 0-15</i>	<i>n/a</i>	<i>1700</i>	<i>960</i>	<i>914</i>	<i>939</i>	<i>852</i>
<i>Males 2-15</i>	<i>1096</i>	<i>1515</i>	<i>841</i>	<i>803</i>	<i>830</i>	<i>743</i>
<i>Males 16-74</i>	<i>4420</i>	<i>3588</i>	<i>2068</i>	<i>2136</i>	<i>2164</i>	<i>2064</i>
<i>Males 16+</i>	<i>n/a</i>	<i>3847</i>	<i>2228</i>	<i>2309</i>	<i>2343</i>	<i>2237</i>
<i>Females 0-15</i>	<i>n/a</i>	<i>1622</i>	<i>917</i>	<i>873</i>	<i>899</i>	<i>815</i>
<i>Females 2-15</i>	<i>1046</i>	<i>1447</i>	<i>786</i>	<i>760</i>	<i>788</i>	<i>720</i>
<i>Females 16-74</i>	<i>4576</i>	<i>3821</i>	<i>2178</i>	<i>2243</i>	<i>2282</i>	<i>2168</i>
<i>Females 16+</i>	<i>n/a</i>	<i>4290</i>	<i>2432</i>	<i>2506</i>	<i>2546</i>	<i>2421</i>
<i>All children 0-15</i>	<i>n/a</i>	<i>3322</i>	<i>1877</i>	<i>1786</i>	<i>1838</i>	<i>1667</i>
<i>All children 2-15</i>	<i>2142</i>	<i>2963</i>	<i>1627</i>	<i>1563</i>	<i>1618</i>	<i>1462</i>
<i>All adults 16-74</i>	<i>8996</i>	<i>7409</i>	<i>4247</i>	<i>4380</i>	<i>4446</i>	<i>4232</i>
<i>All adults 16+</i>	<i>n/a</i>	<i>8137</i>	<i>4660</i>	<i>4815</i>	<i>4889</i>	<i>4658</i>
<i>Bases (weighted):</i>						
<i>Males 0-15</i>	<i>n/a</i>	<i>1655</i>	<i>994</i>	<i>879</i>	<i>947</i>	<i>842</i>
<i>Males 2-15</i>	<i>1987</i>	<i>1464</i>	<i>867</i>	<i>764</i>	<i>819</i>	<i>730</i>
<i>Males 16-74</i>	<i>3938</i>	<i>3277</i>	<i>1801</i>	<i>1902</i>	<i>1920</i>	<i>1841</i>
<i>Males 16+</i>	<i>n/a</i>	<i>3603</i>	<i>1999</i>	<i>2127</i>	<i>2137</i>	<i>2068</i>
<i>Females 0-15</i>	<i>n/a</i>	<i>1667</i>	<i>883</i>	<i>907</i>	<i>891</i>	<i>825</i>
<i>Females 2-15</i>	<i>1905</i>	<i>1467</i>	<i>746</i>	<i>785</i>	<i>763</i>	<i>730</i>
<i>Females 16-74</i>	<i>5104</i>	<i>4043</i>	<i>2360</i>	<i>2362</i>	<i>2446</i>	<i>2277</i>
<i>Females 16+</i>	<i>n/a</i>	<i>4536</i>	<i>2659</i>	<i>2688</i>	<i>2752</i>	<i>2589</i>
<i>All children 0-15</i>	<i>n/a</i>	<i>3322</i>	<i>1877</i>	<i>1786</i>	<i>1838</i>	<i>1667</i>
<i>All children 2-15</i>	<i>3892</i>	<i>2931</i>	<i>1613</i>	<i>1549</i>	<i>1582</i>	<i>1460</i>
<i>All adults 16-74</i>	<i>9042</i>	<i>7320</i>	<i>4161</i>	<i>4264</i>	<i>4366</i>	<i>4118</i>
<i>All adults 16+</i>	<i>n/a</i>	<i>8139</i>	<i>4658</i>	<i>4815</i>	<i>4889</i>	<i>4657</i>

a Wheezing or whistling in the chest

**Table 7.2 Doctor-diagnosed asthma, wheezed in last 12 months, and ever wheezed, 2014, by age and sex**

<i>Aged 16 and over</i>								<i>2014</i>
<b>Respiratory symptoms and asthma</b>	<b>Age</b>							<b>Total</b>
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Males</b>								
Doctor-diagnosed asthma	23	26	18	13	9	9	12	16
Wheezed in last 12 months <sup>a</sup>	15	18	16	17	19	18	23	18
Ever wheezed	29	34	31	31	28	28	32	31
<b>Females</b>								
Doctor-diagnosed asthma	20	19	22	18	18	17	10	18
Wheezed in last 12 months <sup>a</sup>	16	10	19	19	20	25	17	18
Ever wheezed	27	23	34	33	32	37	24	30
<b>All</b>								
Doctor-diagnosed asthma	22	22	20	16	14	13	10	17
Wheezed in last 12 months <sup>a</sup>	16	14	17	18	19	22	19	18
Ever wheezed	28	28	33	32	30	32	27	30
<i>Bases (weighted):</i>								
<i>Males</i>	<i>320</i>	<i>358</i>	<i>357</i>	<i>417</i>	<i>348</i>	<i>264</i>	<i>173</i>	<i>2237</i>
<i>Females</i>	<i>314</i>	<i>375</i>	<i>379</i>	<i>441</i>	<i>365</i>	<i>294</i>	<i>253</i>	<i>2421</i>
<i>All</i>	<i>634</i>	<i>733</i>	<i>736</i>	<i>859</i>	<i>713</i>	<i>558</i>	<i>426</i>	<i>4658</i>
<i>Bases (unweighted):</i>								
<i>Males</i>	<i>202</i>	<i>251</i>	<i>306</i>	<i>362</i>	<i>359</i>	<i>361</i>	<i>227</i>	<i>2068</i>
<i>Females</i>	<i>232</i>	<i>337</i>	<i>421</i>	<i>431</i>	<i>437</i>	<i>419</i>	<i>312</i>	<i>2589</i>
<i>All</i>	<i>434</i>	<i>588</i>	<i>727</i>	<i>793</i>	<i>796</i>	<i>780</i>	<i>539</i>	<i>4657</i>

<sup>a</sup> Wheezing or whistling in the chest

**Table 7.3 Doctor-diagnosed asthma, wheezed in last 12 months, and ever wheezed (age-standardised), 2014, by area deprivation and sex**

*Aged 16 and over*

2014

Asthma and wheezing	Area deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>Men</b>					
Doctor-diagnosed asthma	18	16	14	14	19
Wheezed in last 12 months <sup>a</sup>	12	16	18	17	27
Ever wheezed	28	31	29	31	35
<b>Women</b>					
Doctor-diagnosed asthma	15	17	17	20	21
Wheezed in last 12 months <sup>a</sup>	11	16	15	23	25
Ever wheezed	24	27	27	37	37
<b>All adults</b>					
Doctor-diagnosed asthma	17	16	16	17	20
Wheezed in last 12 months <sup>a</sup>	12	16	17	21	26
Ever wheezed	26	29	28	34	36
<i>Bases (weighted):</i>					
<i>Men</i>	495	476	424	431	411
<i>Women</i>	490	534	463	494	439
<i>All adults</i>	985	1011	888	925	850
<i>Bases (unweighted):</i>					
<i>Men</i>	405	449	481	397	336
<i>Women</i>	481	572	556	537	443
<i>All adults</i>	886	1021	1037	934	779

a Wheezing or whistling in the chest

**Table 7.4 Doctor-diagnosed asthma, wheezed in last 12 months, and ever wheezed (age-standardised), 2014, by smoking status and sex**

*Aged 16 and over*

2014

Asthma and wheezing	Smoking status <sup>a</sup>			
	Never smoked / smoked occasionally	Ex-regular smoker	Smokes fewer than 20 a day	Smokes 20 or more a day
	%	%	%	%
<b>Men</b>				
Doctor-diagnosed asthma	15	22	15	19
Wheezed in last 12 months <sup>b</sup>	12	20	29	36
Ever wheezed	26	34	38	43
<b>Women</b>				
Doctor-diagnosed asthma	16	17	21	33
Wheezed in last 12 months <sup>b</sup>	11	20	28	46
Ever wheezed	22	36	42	55
<b>All adults</b>				
Doctor-diagnosed asthma	16	19	18	26
Wheezed in last 12 months <sup>b</sup>	11	20	28	41
Ever wheezed	24	35	40	49
<i>Bases (weighted):</i>				
<i>Men</i>	1189	517	344	137
<i>Women</i>	1353	554	375	130
<i>All adults</i>	2541	1071	719	267
<i>Bases (unweighted):</i>				
<i>Men</i>	1042	561	306	127
<i>Women</i>	1433	628	388	130
<i>All adults</i>	2475	1189	694	257

a Excludes cases where respondent did not know how many they smoked a day

b Wheezing or whistling in the chest



**Table 7.5 Doctor-diagnosed COPD, 2008 to 2014**

<i>Aged 16 and over</i>		<i>2008 to 2014</i>					
<b>Doctor-diagnosed COPD</b>	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%
<b>Men</b>							
Yes	3	3	4	3	4	3	3
No	97	97	96	97	96	97	97
<b>Women</b>							
Yes	4	4	5	4	4	4	4
No	96	96	95	96	96	96	96
<b>All adults</b>							
Yes	4	3	5	4	4	4	4
No	96	97	95	96	96	96	96
<i>Bases (weighted):</i>							
<i>Men</i>	3088	3601	3468	3609	2309	2347	2238
<i>Women</i>	3377	3929	3777	3931	2506	2547	2421
<i>All adults</i>	6465	7530	7245	7540	4815	4894	4659
<i>Bases (weighted):</i>							
<i>Men</i>	2842	3288	3115	3279	2127	2140	2069
<i>Women</i>	3623	4242	4130	4261	2688	2754	2590
<i>All adults</i>	6465	7530	7245	7540	4815	4894	4659

**Table 7.6 Doctor-diagnosed COPD, 2014, by age and sex**

*Aged 16 and over*

2014

Doctor-diagnosed COPD	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Yes	2	0	0	2	4	5	9	3
No	98	100	100	98	96	95	91	97
<b>Women</b>								
Yes	1	-	2	5	6	10	10	4
No	99	100	98	95	94	90	90	96
<b>All adults</b>								
Yes	1	0	1	4	5	7	10	4
No	99	100	99	96	95	93	90	96
<i>Bases (weighted):</i>								
<i>Men</i>	320	358	358	417	348	264	173	2238
<i>Women</i>	314	375	379	441	365	294	253	2421
<i>All adults</i>	634	733	737	859	713	558	426	4659
<i>Bases (unweighted):</i>								
<i>Men</i>	202	251	307	362	359	361	227	2069
<i>Women</i>	232	337	421	431	437	419	313	2590
<i>All adults</i>	434	588	728	793	796	780	540	4659

**Table 7.7 Doctor-diagnosed COPD (age-standardised), 2014, by area deprivation and sex**

*Aged 16 and over*

2014

Doctor-diagnosed COPD	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>Men</b>					
Yes	2	1	2	4	7
No	98	99	98	96	93
<b>Women</b>					
Yes	1	3	4	6	9
No	99	97	96	94	91
<b>All adults</b>					
Yes	2	2	3	5	8
No	98	98	97	95	92
<i>Bases (weighted):</i>					
<i>Men</i>	495	476	425	431	411
<i>Women</i>	490	534	464	494	439
<i>All adults</i>	985	1011	889	925	850
<i>Bases (unweighted):</i>					
<i>Men</i>	405	449	482	397	336
<i>Women</i>	481	572	557	537	443
<i>All adults</i>	886	1021	1039	934	779

**Table 7.8 Doctor-diagnosed COPD (age-standardised), 2014, by smoking status and sex**

*Aged 16 and over*

2014

Doctor-diagnosed COPD	Smoking status <sup>a</sup>			
	Never smoked / smoked occasionally	Ex-regular smoker	Smokes fewer than 20 a day	Smokes 20 or more a day
	%	%	%	%
<b>Men</b>				
Yes	1	5	6	8
No	99	95	94	92
<b>Women</b>				
Yes	1	5	10	17
No	99	95	90	83
<b>All adults</b>				
Yes	1	5	8	12
No	99	95	92	88
<i>Bases (weighted):</i>				
<i>Men</i>	1189	517	344	137
<i>Women</i>	1353	554	375	130
<i>All adults</i>	2541	1071	719	268
<i>Bases (unweighted):</i>				
<i>Men</i>	1042	561	306	127
<i>Women</i>	1433	628	388	131
<i>All adults</i>	2475	1189	694	258

<sup>a</sup> Excludes cases where respondent did not know how many they smoked a day

**Table 7.9 COPD treatment and type of treatment, 2012/2013/2014 combined, by age and sex**

<i>Aged 16 and over with COPD</i>		<i>2012/2013/2014 combined</i>	
<b>Type of treatment received</b>	<b>Age</b>		<b>Total</b>
	16-64	65+	
	%	%	%
<b>Men</b>			
<b>COPD treatment received</b>			
Regular check-up with GP / hospital / clinic	43	76	59
Taking medication (tablets / inhalers)	50	78	64
Advice or treatment to stop smoking	29	14	22
Using oxygen	2	7	5
Immunisations against flu / pneumococcus	23	48	35
Exercise or physical activity	7	19	12
Advice or treatment to lose weight	7	6	6
Other	1	-	1
Any COPD treatment received	53	82	67
No COPD treatment received	47	18	33
<b>Women</b>			
<b>COPD treatment received</b>			
Regular check-up with GP / hospital / clinic	56	63	60
Taking medication (tablets / inhalers)	64	70	67
Advice or treatment to stop smoking	21	19	20
Using oxygen	4	5	4
Immunisations against flu / pneumococcus	36	29	33
Exercise or physical activity	7	6	7
Advice or treatment to lose weight	4	6	5
Other	1	1	1
Any COPD treatment received	70	73	71
No COPD treatment received	30	27	29

*Continued...*

**Table 7.9 - Continued***Aged 16 and over with COPD**2012/2013/2014 combined*

Type of treatment received	Age		Total
	16-64	65+	
	%	%	%
<b>All adults</b>			
<b>COPD treatment received</b>			
Regular check-up with GP / hospital / clinic	51	69	59
Taking medication (tablets / inhalers)	58	73	66
Advice or treatment to stop smoking	24	17	21
Using oxygen	3	6	4
Immunisations against flu / pneumococcus	31	37	34
Exercise or physical activity	7	11	9
Advice or treatment to lose weight	5	6	6
Other	1	0	1
Any COPD treatment received	63	76	69
No COPD treatment received	37	24	31
<i>Bases (weighted):</i>			
<i>Men</i>	116	109	224
<i>Women</i>	165	155	320
<i>All adults</i>	280	264	545
<i>Bases (unweighted):</i>			
<i>Men</i>	115	137	252
<i>Women</i>	187	182	369
<i>All adults</i>	302	319	621

**Table 7.10 Phlegm and breathlessness 1995, 1998, 2003, 2008/2010 combined, 2012/2014 combined, by age and sex**

Phlegm and breathlessness <sup>a</sup>	1995, 1998, 2003, 2008/2010 combined, 2012/2014 combined				
	1995	1998	2003	2008/2010 combined	2012/2014 combined
<i>Aged 16 and over</i>					
	%	%	%	%	%
<b>Men</b>					
<b>16-64</b>					
Phlegm <sup>a</sup>	13	13	12	10	10
Grade 2 breathlessness <sup>b</sup>	13	10	9	7	7
Grade 3 breathlessness	7	6	7	7	7
Any breathlessness	20	16	16	13	14
<b>16+</b>					
Phlegm <sup>b</sup>	n/a	n/a	14	12	11
Grade 2 breathlessness <sup>c</sup>	n/a	n/a	11	9	9
Grade 3 breathlessness	n/a	n/a	9	9	10
Any breathlessness	n/a	n/a	20	17	19
<b>Women</b>					
<b>16-64</b>					
Phlegm <sup>a</sup>	9	9	8	7	8
Grade 2 breathlessness <sup>b</sup>	20	16	12	10	11
Grade 3 breathlessness	10	9	10	10	10
Any breathlessness	30	25	22	20	21
<b>16+</b>					
Phlegm <sup>b</sup>	n/a	n/a	9	8	9
Grade 2 breathlessness <sup>c</sup>	n/a	n/a	14	12	13
Grade 3 breathlessness	n/a	n/a	13	13	13
Any breathlessness	n/a	n/a	27	25	26
<b>All adults</b>					
<b>16-64</b>					
Phlegm <sup>a</sup>	11	11	10	9	9
Grade 2 breathlessness <sup>b</sup>	17	13	11	8	9
Grade 3 breathlessness	8	8	8	8	9
Any breathlessness	25	21	19	17	18
<b>16+</b>					
Phlegm <sup>b</sup>	n/a	n/a	11	10	10
Grade 2 breathlessness <sup>c</sup>	n/a	n/a	13	11	11
Grade 3 breathlessness	n/a	n/a	11	11	12
Any breathlessness	n/a	n/a	24	21	23

*Continued...*

**Table 7.10 - Continued**

<i>Aged 16 and over</i>		<i>1995, 1998, 2003, 2008/2010 combined, 2012/2014 combined</i>			
<b>Phlegm and breathlessness<sup>a</sup></b>	1995	1998	2003	2008/2010 combined	2012/2014 combined
<i>Bases (weighted):</i>					
<i>Men 16-64</i>	3899	3951	3176	1831	1811
<i>Men 16+</i>	<i>n/a</i>	<i>n/a</i>	3840	2230	2251
<i>Women 16-64</i>	3997	3990	3329	1901	1888
<i>Women 16+</i>	<i>n/a</i>	<i>n/a</i>	4287	2432	2438
<i>All adults 16-64</i>	7896	7941	6505	3732	3698
<i>All adults 16+</i>	<i>n/a</i>	<i>n/a</i>	8127	4661	4689
<i>Bases (weighted):</i>					
<i>Men 16-64</i>	3522	3365	2764	1489	1469
<i>Men 16+</i>	<i>n/a</i>	<i>n/a</i>	3597	2001	2076
<i>Women 16-64</i>	4406	4212	3462	1993	1885
<i>Women 16+</i>	<i>n/a</i>	<i>n/a</i>	4534	2660	2614
<i>All adults 16-64</i>	7928	7577	6226	3482	3354
<i>All adults 16+</i>	<i>n/a</i>	<i>n/a</i>	8131	4661	4690

a These items are from the MRC Respiratory Questionnaire

b Produced phlegm from the chest on most days for at least three months of the year

c In previous years these were mis-labelled as grade 1 and 2



**Table 7.11 Phlegm and breathlessness, 2012/2014 combined, by age and sex**

*Aged 16 and over*

*2012/2014 combined*

Phlegm and breathlessness <sup>a</sup>	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Phlegm <sup>a</sup>	5	11	11	9	12	17	20	11
Any breathlessness	5	10	12	19	25	38	43	19
<b>Women</b>								
Phlegm <sup>a</sup>	6	5	8	9	12	10	13	9
Any breathlessness	12	15	21	22	32	45	46	26
<b>All adults</b>								
Phlegm <sup>a</sup>	5	8	9	9	12	14	15	10
Any breathlessness	8	13	17	21	29	42	45	23
<i>Bases (weighted):</i>								
<i>Men</i>	322	358	360	420	350	266	175	2251
<i>Women</i>	316	377	382	444	368	296	255	2438
<i>All adults</i>	638	736	742	865	718	561	429	4689
<i>Bases (unweighted):</i>								
<i>Men</i>	168	224	317	378	382	377	230	2076
<i>Women</i>	224	312	431	484	434	399	330	2614
<i>All adults</i>	392	536	748	862	816	776	560	4690

a These items are from the MRC Respiratory Questionnaire

b Produced phlegm from the chest on most days for at least three months of the year

**Table 7.12 Phlegm and breathlessness (age-standardised), 2012/2014 combined, by area deprivation and sex**

*Aged 16 and over*

*2012/2014 combined*

Phlegm and breathlessness <sup>a</sup>	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>Men</b>					
Phlegm <sup>b</sup>	8	9	10	16	17
Any breathlessness	12	15	21	25	29
<b>Women</b>					
Phlegm <sup>b</sup>	4	7	9	10	15
Any breathlessness	16	20	27	32	40
<b>All adults</b>					
Phlegm <sup>b</sup>	6	8	9	13	16
Any breathlessness	14	17	24	29	35
<i>Bases (weighted):</i>					
<i>Men</i>	475	461	481	486	349
<i>Women</i>	503	471	550	509	405
<i>All adults</i>	978	932	1031	994	754
<i>Bases (unweighted):</i>					
<i>Men</i>	411	475	482	418	290
<i>Women</i>	503	569	597	542	403
<i>All adults</i>	914	1044	1079	960	693

a These items are from the MRC Respiratory Questionnaire

b Produced phlegm from the chest on most days for at least three months of the year

**Table 7.13 Phlegm and breathlessness (age-standardised), 2012/2014 combined, by smoking status and sex**

*Aged 16 and over*

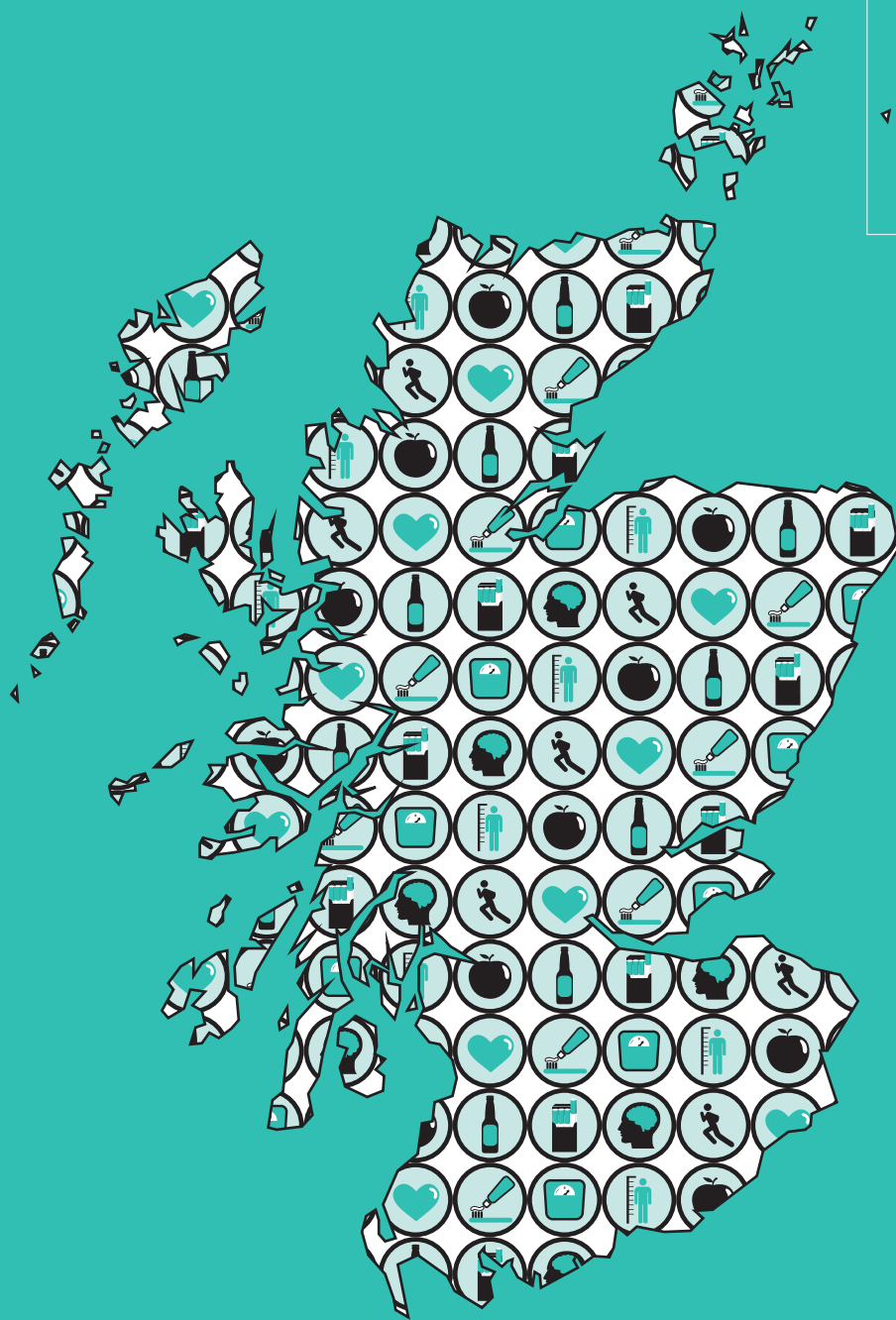
*2012/2014 combined*

Phlegm and breathlessness <sup>a</sup>	Smoking status <sup>a</sup>			
	Never smoked / smoked occasionally	Ex-regular smoker	Smokes fewer than 20 a day	Smokes 20 or more a day
	%	%	%	%
<b>Men</b>				
Phlegm <sup>b</sup>	5	8	23	35
Any breathlessness	13	19	26	36
<b>Women</b>				
Phlegm <sup>b</sup>	4	8	16	34
Any breathlessness	20	27	35	48
<b>All adults</b>				
Phlegm <sup>b</sup>	5	8	20	34
Any breathlessness	17	23	30	41
<i>Bases (weighted):</i>				
<i>Men</i>	1178	507	369	160
<i>Women</i>	1365	535	388	131
<i>All adults</i>	2543	1042	757	292
<i>Bases (unweighted):</i>				
<i>Men</i>	1011	575	307	154
<i>Women</i>	1428	625	402	142
<i>All adults</i>	2439	1200	709	296

a These items are from the MRC Respiratory Questionnaire

b Excludes cases where respondent did not know how many they smoked a day

c Produced phlegm from the chest on most days for at least three months of the year



# Chapter 8

Cardiovascular conditions  
and diabetes

## 8 CARDIOVASCULAR CONDITIONS AND DIABETES

Shanna Christie

### SUMMARY

#### Cardiovascular (CVD) conditions and diabetes

- In 2014, 16% of all adults aged 16 and over stated that they had ever been diagnosed with any CVD condition by a doctor, with prevalence higher for men than women. Prevalence for men increased from 15% in the 2003-2009 period to 18% in 2014, with much of this increase occurring between 2013 and 2014. In contrast, the figures for women have ranged from 14% to 16% across the years with no pattern (14% in 2014).
- Doctor-diagnosed diabetes prevalence was 6% for adults (8% for men and 5% for women) in 2014. Prevalence in men is significantly higher now (8%) than in 2003 (4%), with the biggest single increase occurring between 2013 (6%) and 2014 (8%).
- A fifth (20%) of adults in 2014 had any CVD condition or diabetes (23% of men, 17% of women).
- In 2014, 8% of all adults reported that they had ever been diagnosed with ischaemic heart disease (IHD) or stroke (10% of men, 7% of women).

#### Conditions and area deprivation

- Prevalence of any CVD was significantly higher in the most deprived areas (22%) than the least deprived areas (14%), using age-standardised data.
- Diabetes was twice as high in the most deprived (9%) than the least deprived (4%) quintile.
- IHD or stroke prevalence was also significantly higher among those in the most (14%) than the least deprived quintile (6%).

#### Family Risks

- A higher prevalence of diabetes was seen among those with a family history of type 1 or 2 diabetes (13%) than those with no family history of the condition (5%). This difference was particularly noticeable for men: 17% of men with a family history of the condition had been diagnosed with diabetes, compared with 6% of those with no family history.
- Prevalence of CVD among those with a family history of heart disease or stroke before the age of 60 was around twice as high as for those with no family history (25%, compared with 13%).
- Prevalence of IHD among this group was around three times as high as for those with no family history (12%, compared with 4%), while prevalence of stroke was around two times as high (5%, compared with 2%).

### 8.1 INTRODUCTION

Cardiovascular disease (CVD) is a general term describing diseases of the heart and blood vessels whereby blood flow to the heart, brain or body is restricted. It is one of the leading contributors to the global disease burden.<sup>1</sup> Its main components are ischaemic heart disease (IHD) (or coronary heart disease) and stroke, both of which have been identified as clinical priorities for the NHS in Scotland.<sup>2</sup> IHD is the second most common cause of death in

Scotland after cancer, accounting for 13% of deaths in 2014, with a further 8% caused by stroke.<sup>3</sup> Early mortality from heart disease and stroke have also both improved in recent years, but concern remains about continuing inequalities in relation to morbidity and mortality linked to these conditions.<sup>2,4</sup>

The increasing prevalence of diabetes, the most common metabolic disorder, is a major health issue for Scotland. Scotland has one of the highest levels of type 1 diabetes in Europe, but it is the increasing prevalence of type 2 diabetes – linked to obesity, physical inactivity and ageing – which is driving the increased prevalence and causing concern.<sup>5</sup> Diabetes is a risk factor in premature mortality, although more effective treatments of diabetes and hypertension have offset some of the excess risk in recent years.<sup>5</sup>

### 8.1.1 Policy background

One of the Scottish Government's **National Performance Framework National Outcomes** is for people in Scotland to 'live longer, healthier lives.'<sup>6</sup> There is also a National Performance indicator to 'reduce premature mortality' (deaths from all causes in those aged under 75).<sup>7</sup> CVD is described as one of the key 'big killer' diseases around which action must be taken if this target is to be met. In addition, a number of the National Indicators<sup>8</sup> are linked to key CVD risk factors, most notably smoking,<sup>9</sup> but also physical activity<sup>10</sup> and obesity<sup>11</sup> (the latter two are also major risk factors for diabetes).

In recognition of the challenges posed by long-term conditions such as CVD, diabetes and the respiratory conditions covered in Chapter 7 – both for the individual and their families, as well as for health and care services – the Scottish Government's over-arching strategy for long-term conditions was published in 2009. Delivering on a commitment made in the earlier **Better Health, Better Care: Action Plan**,<sup>12</sup> the **Action Plan** recognised the need for system-wide action in response to the challenge presented by the increasing prevalence of long-term conditions within the context of an ageing population, the links to health inequalities, and the particular challenges of multi-morbidity – the presence of two or more long-term conditions. The **Keep Well Programme**<sup>13</sup> focussed on delivering health improvements in deprived communities by offering health checks to individuals aged 40-64, including screening for CVD and its main risk factors.

The Heart Disease and Stroke Action Plan<sup>2</sup> which was published in 2009, and the Diabetes Action Plan<sup>5</sup>, which was published in 2010, both set out a comprehensive programme for further reducing deaths and improving the lives of people living with heart disease, stroke and diabetes. This has been refreshed and separate Heart Disease<sup>14</sup>, Stroke<sup>15</sup> and Diabetes<sup>16</sup> Improvement Plans were published in August 2014 and November 2014. These set out key priorities for the delivery of improvements of treatment and care in heart disease, stroke and diabetes.

### **8.1.2 Reporting on CVD conditions and diabetes in the Scottish Health Survey (SHeS)**

SHeS is an important source of information on the prevalence of CVD conditions and diabetes in Scotland. It also offers valuable information on the patterning of these conditions across different groups in society. In this chapter trends in self-reported CVD conditions and diabetes prevalence for adults are updated for 2014. Prevalence trends are also presented by area deprivation in Chapter 9.

New questions designed to measure the prevalence of diabetes among family members (to help estimate potential future disease risk) are also reported here for the first time since their introduction to the survey in 2012, alongside long-standing questions about heart disease and stroke in family members before the age of 60.

Supplementary tables providing additional data on these conditions are also available on the Scottish Government SHeS website.<sup>17</sup>

## **8.2 METHODS AND DEFINITIONS**

### **8.2.1 Methods**

Participants were asked whether they had ever suffered from any of the following conditions: diabetes, angina, heart attack, stroke, heart murmur, irregular heart rhythm, or 'other heart trouble'. If they responded affirmatively to any of these conditions, participants were asked whether they had ever been told they had the condition by a doctor. For the purposes of the analysis presented in this chapter, participants were only classified as having a particular condition if they reported that the diagnosis had been confirmed by a doctor.

It is important to note that no attempt was made to verify these self-reported diagnoses objectively. It is therefore possible that some misclassification may have occurred because some participants may not have remembered (or not remembered correctly, or not known about) diagnoses made by their doctor.

### **8.2.2 Definitions**

#### **Any CVD condition**

Participants were classified as having 'any CVD' if they reported ever having any of the following conditions confirmed by a doctor: angina, heart attack, stroke, heart murmur, abnormal heart rhythm, or 'other heart trouble'.<sup>18</sup>

#### **Diabetes**

Participants were classified as having diabetes if they reported a confirmed doctor diagnosis. Women whose diabetes occurred only during pregnancy were excluded from the classification. No distinction was made between type 1 and type 2 diabetes in the interview.

### **Any CVD condition or diabetes**

A summary measure of the above conditions is presented in the tables as 'any CVD condition or diabetes'.

### **Ischaemic heart disease (IHD)**

Participants were classified as having IHD if they reported ever having angina or a heart attack confirmed by a doctor. All tables refer to **ever** having the condition.

### **Stroke**

Participants were classified as having a stroke if they reported **ever** having had a stroke confirmed by a doctor.

### **IHD or stroke**

A summary measure of the above conditions is presented in the tables as 'IHD or stroke'.

### **Diabetes, heart disease and stroke among family members**

Participants were asked if any of their parents, children or siblings (living or dead) had ever had type 1 or 2 diabetes. Non-blood relatives were excluded from the definition (e.g. step-parents), though adopted people were asked to answer about their adoptive family if they didn't know their birth parents' diabetes status.

Family history of heart disease or stroke onset before the age of 60 was also measured. Participants were asked about their parents, siblings, aunts, uncles and cousins. The data on parents and siblings are presented in this chapter.

## **8.3 CARDIOVASCULAR CONDITIONS AND DIABETES**

### **8.3.1 Trends in any CVD, diabetes, any CVD or diabetes, IHD, stroke, and IHD or stroke prevalence since 1995**

#### **Any CVD**

In 2014, 16% of adults aged 16 and over reported that they had ever been diagnosed by a doctor with any CVD condition. While the latest figure does not differ significantly from 2013 (15%), and the longer trend from 2003 onward has seen only minor fluctuations, the patterns for men and women are different. Prevalence among men of any CVD increased from 15% in the 2003-2009 period, to 18% in 2014. In contrast, the figures for women have ranged from 14% to 16% across the years with no pattern, with the 2014 figure at the lower end of this (14%). Much of the increase in men occurred between 2013 and 2014, so this will need to be monitored in future years. Similar patterns can be observed for adults aged 16-64, although figures for men in 1995 and 1998 suggest the upward trend started earlier than 2003, albeit with a similar increase from 2013 to 2014 as seen for all adult men. **Table 8.1**



### **Doctor-diagnosed diabetes prevalence**

About one in fifteen (6%) adults aged 16 and over in 2014 reported they had ever been diagnosed with diabetes by a doctor. This is the same level as seen from 2011, but higher than the previously reported level of 4% in 2003. Prevalence has increased more among men than women. As with any CVD, prevalence of diabetes in men is significantly higher now (8%) than in 2003 (4%), with the biggest single increase occurring between 2013 (6%) and 2014 (8%). In contrast, while the latest figure for women (5%) is higher than in 2003 (4%), it has changed very little in the interim years.

**Figure 8A, Table 8.1**

### **Any CVD or diabetes**

The combined prevalence of any CVD or diabetes in adults aged 16 and over has increased over time, from 17% in 2003 to 20% in 2014, though the figures for the past three years have been very similar. As seen with the individual components of this measure, this increase over time was largely confined to men, among whom prevalence has risen from 17% in 2003 to 23% in 2014. The figures for adults aged 16-64 show similar patterns of increasing prevalence over time for men since the series began.

**Figure 8A, Table 8.1**

### **IHD**

In 2014, 6% of adults aged 16 and over had IHD, a similar level to that seen in most years since 2008. However, while the figures for men have seen little change over time, the most recent figures for women (5% in 2014) represent a downward trend, from 7% in 2003. Figures for women aged 16-64 demonstrate a generally downward trend in prevalence of IHD since 1995.

**Figure 8A, Table 8.1**

### **Stroke**

Prevalence of ever having had a stroke, among adults aged 16 and over in 2014, was 3% compared with 2% in 2003. This is the first time there has been a statistically significant difference in prevalence since it was first estimated in 2003. Prevalence has increased for both men (2% in 2003, 3% in 2014) and women (2% in 2003, 3% in 2014), although only the change for women is significant.

**Figure 8A, Table 8.1**

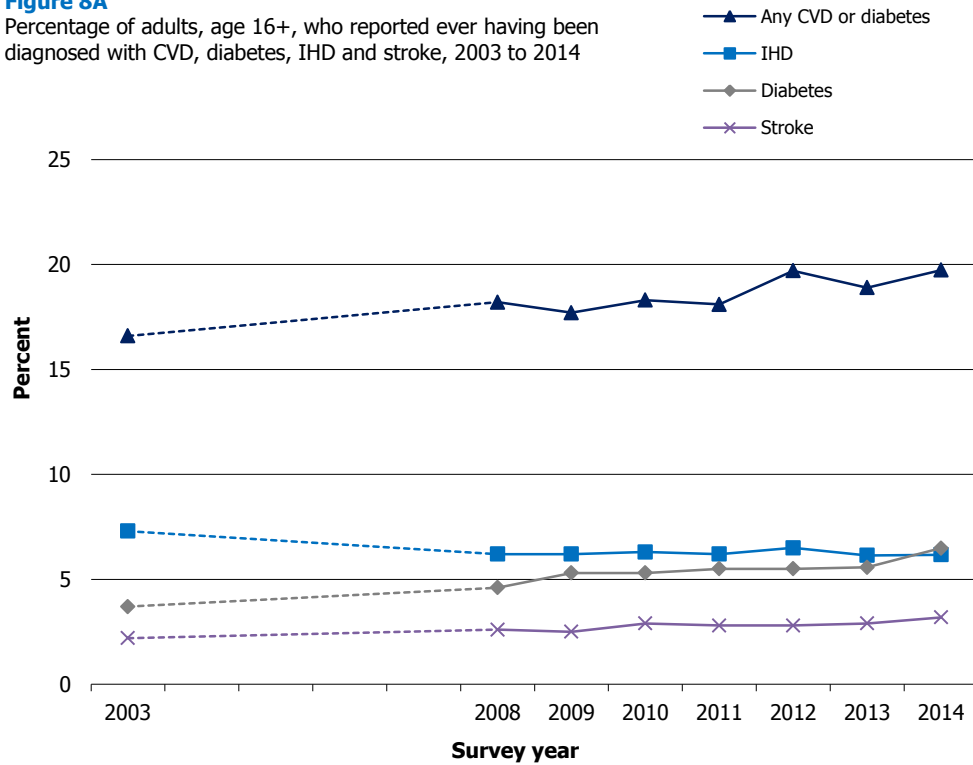
### **IHD or stroke**

The combined prevalence of IHD or stroke in adults aged 16 and over was 8% in 2014 and has been almost identical in all years since 2003. The figures for those aged 16-64 since 1995 were similarly static (around 4%).

**Table 8.1**

**Figure 8A**

Percentage of adults, age 16+, who reported ever having been diagnosed with CVD, diabetes, IHD and stroke, 2003 to 2014



### 8.3.2 Any CVD, diabetes, any CVD or diabetes, IHD, stroke, and IHD or stroke prevalence in 2014, by age and sex

#### Any CVD

In 2014, 16% of adults aged 16 and over reported any CVD condition. Prevalence increased with age, from 5% among those aged 16-24 to 42% for those aged 75 and over. A significantly higher prevalence was reported by men (18%) than by women (14%). This differs from previous years, and is due to the recent increase in prevalence among men (reported in Section 8.3.1).

Prevalence increased by age in both men and women, from 5% of those aged 16-24 to 49% of those aged 75 and over among men, and from 5% to 37% among women. Prevalence was higher among men than women in all age groups.

**Table 8.2**

#### Doctor-diagnosed diabetes

In 2014, overall prevalence of doctor-diagnosed diabetes was around one in fifteen (6%) for adults aged 16 and over, with marked variation by age group from 1% for those aged 16-24 to 15% for those aged 65 and over. Men had a higher prevalence than women for each age group, with the exception of those aged 16-24 (men 1%, women 2%). Prevalence increased steadily with age among men, whereas the pattern was fairly flat for women aged 16-44 (1-2%) before increasing to 12% for those aged 65 and over.

**Figure 8B, Table 8.2**

### **Any CVD or diabetes**

A fifth (20%) of adults in 2014 had a CVD condition or diabetes (23% of men and 17% of women). Prevalence was lower among younger adults (6-16%), but reached 27% in the 55-64 age group and increased to 48% for those aged 75 and over.

**Figure 8B, Table 8.2**

### **IHD**

IHD was reported by 6% of adults aged 16 and over in 2014. Prevalence was very low among the 16-44 age group (1% or less), rising to 4% for those aged 45-54, with higher levels seen in the oldest age group (21% for those aged 75 and over). From the age of 35 onwards, men had higher prevalence than women for all age groups.

**Figure 8B, Table 8.2**

### **Stroke**

Prevalence of stroke was low, overall, at 3% in 2014. As with IHD, stroke was rare in those aged under 45 (less than 1%). Prevalence increased gradually with age from 2% of those aged 45-54 to 11% for those aged 75 and over. Men and women tended to have similar levels of prevalence throughout the age ranges, with those aged 75 and over being the only group where more than one in ten reported having had a stroke (13% of men, 10% of women).

**Figure 8B, Table 8.2**

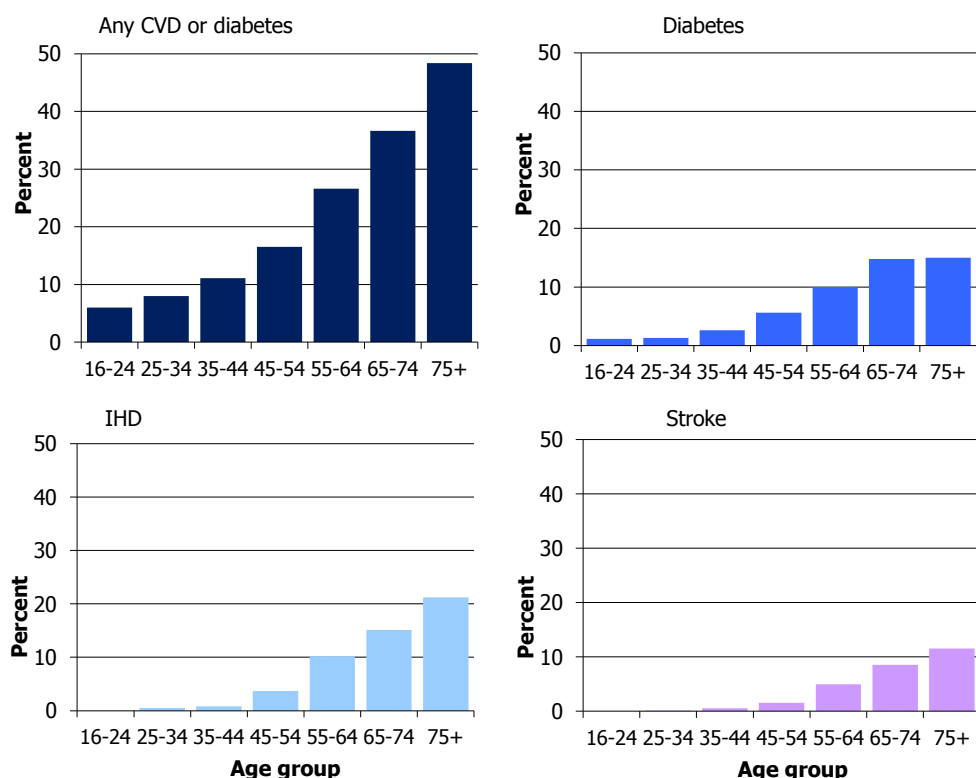
### **IHD or stroke**

The combined prevalence of IHD or stroke was 8% in 2014 (10% in men, 7% in women). Similar to the patterns for the individual conditions, prevalence increased progressively with age from 5% in the 45-54 age group to 30% in those aged 75 and over. The difference between the rates for men and women were particularly pronounced in those aged 55-64 (19% men, 8% women) and 75 and over (35% men, 26% women).

**Table 8.2**

**Figure 8B**

Percentage of adults who reported ever being diagnosed with any CVD or diabetes, Diabetes, IHD and stroke, by age, 2014



### 8.3.3 Any CVD, diabetes, any CVD or diabetes, IHD, stroke and IHD or stroke in 2014, by area deprivation and sex

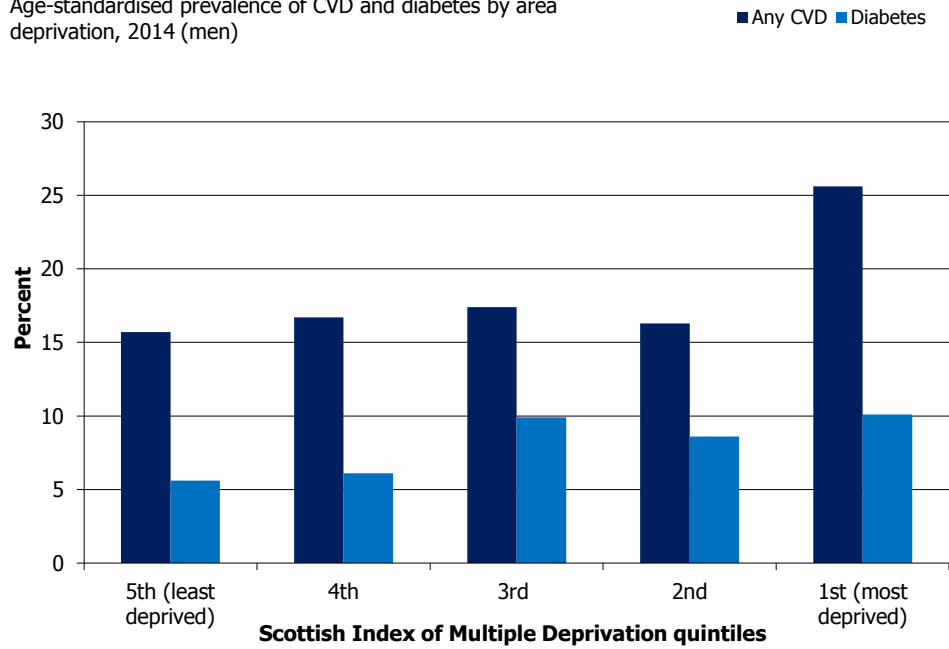
The age-standardised prevalence of all the CVD conditions presented in Table 8.3 was significantly higher in 2014 for adults living in more deprived areas in Scotland than in less deprived areas. Prevalence of IHD was almost three times higher among people living in the most deprived quintile (11%) than in the least deprived quintile (4%). Doctor-diagnosed diabetes prevalence more than doubled between the least and most deprived quintiles (from 4% to 9%), while any CVD prevalence increased from 14% to 22%. There was less of a clear pattern for stroke prevalence, but levels were lowest in the two least deprived quintiles (2%) and highest in the two most deprived quintiles (4%). Following these patterns, the combined measure of any CVD or diabetes showed higher levels in the most deprived areas (27%) compared with the least (17%), and the same was true for IHD or stroke (14% in the most, 6% in the least deprived areas).

The overall patterns described above were generally the same for men and women separately. The main points of divergence were that men's prevalence of IHD increased more sharply with deprivation than women's did (in both relative and absolute terms), while the relative increase in women's diabetes prevalence between the least and most deprived areas was higher than it was for men's (though the absolute difference was similar).

**Figure 8C, Figure 8D, Table 8.3**

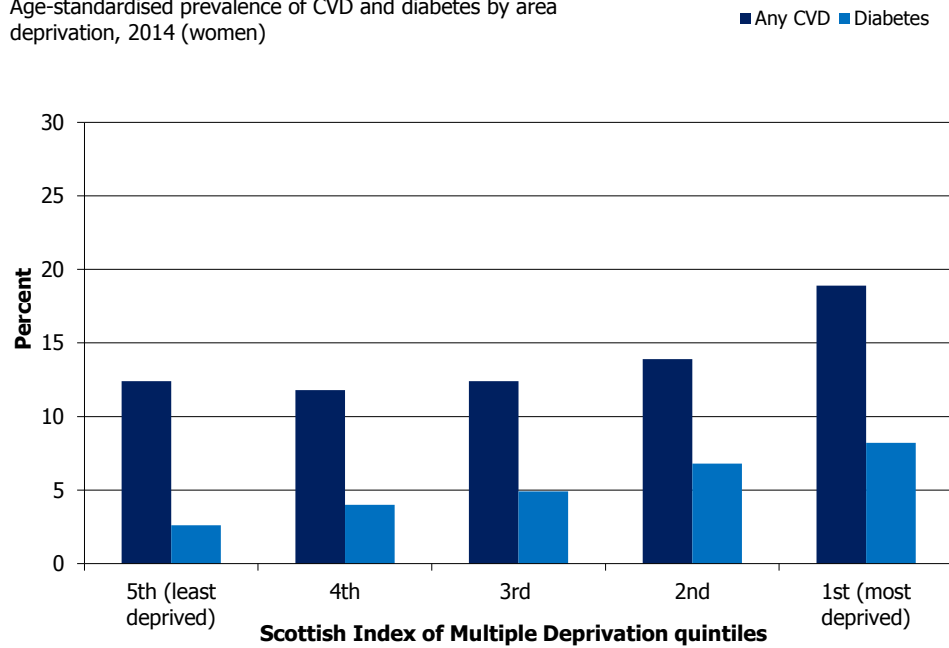
**Figure 8C**

Age-standardised prevalence of CVD and diabetes by area deprivation, 2014 (men)



**Figure 8D**

Age-standardised prevalence of CVD and diabetes by area deprivation, 2014 (women)



#### 8.4 FAMILY-BASED RISK FACTORS FOR HEART DISEASE, STROKE AND DIABETES

Table 8.4 compares the prevalence of doctor-diagnosed diabetes in adults in 2014, among those with a family history of type 1 or 2 diabetes and those with no reported family history. Prevalence of doctor-diagnosed diabetes was 13% for those with a family history of the disease and 5% for those without. This higher prevalence of diabetes among people with a family history was seen among men (17% with a family history, 6% without) and women (9% and 4% respectively), though the relative and absolute difference was somewhat greater among men.

**Figure 8E, Table 8.4**

**Figure 8E**

Prevalence of doctor-diagnosed diabetes by family history of diabetes and sex, 2014

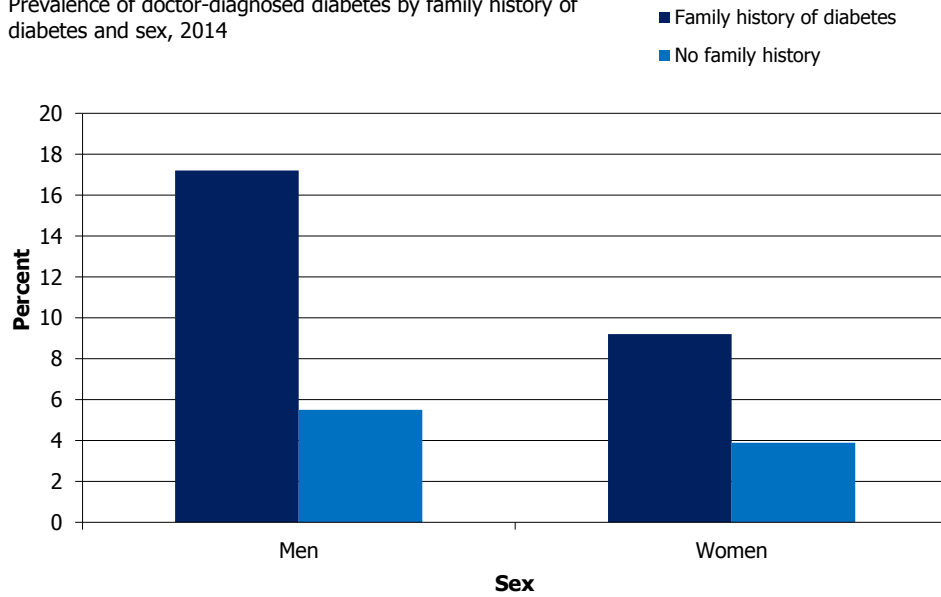
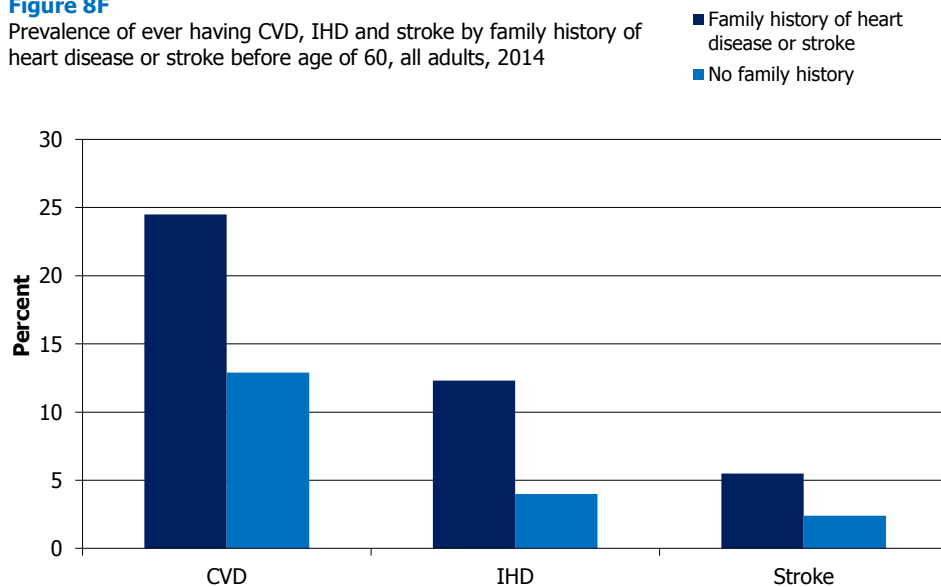


Table 8.5 presents a similar analysis, but looks at prevalence of any CVD, IHD or stroke in adults in 2014 among those with and without a family history of heart disease or stroke before the age of 60. There was a higher prevalence among those with a family history of disease than those without for any CVD (with family history 25%, without 13%), IHD (with 12%, without 4%) and stroke (with 5%, without 2%). These patterns were found among both men and women.

**Figure 8F, Table 8.5**

**Figure 8F**

Prevalence of ever having CVD, IHD and stroke by family history of heart disease or stroke before age of 60, all adults, 2014



## References and notes

- <sup>1</sup> Lozano R. et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet* 2012. Vol 380. Issue 9859: 2095-128.
- <sup>2</sup> *Better Heart Disease and Stroke Care Action Plan*. Edinburgh, Scottish Government. 2009. [www.gov.scot/Resource/Doc/277650/0083350.pdf](http://www.gov.scot/Resource/Doc/277650/0083350.pdf)
- <sup>3</sup> Available from: [www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/general-publications/vital-events-reference-tables/2014/section-6-deaths-causes](http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/general-publications/vital-events-reference-tables/2014/section-6-deaths-causes)
- <sup>4</sup> *Long Term Monitoring of Health Inequalities: Headline Indicators – October 2014*. Edinburgh, Scottish Government. 2014. [www.gov.scot/Publications/2014/10/7902/0](http://www.gov.scot/Publications/2014/10/7902/0)
- <sup>5</sup> *Diabetes Action Plan 2010: Quality Care for Diabetes in Scotland*. Edinburgh, Scottish Government. 2010.
- <sup>6</sup> See: [www.gov.scot/About/Performance/scotPerforms/outcome](http://www.gov.scot/About/Performance/scotPerforms/outcome)
- <sup>7</sup> See: [www.gov.scot/About/Performance/scotPerforms/indicator/mortality](http://www.gov.scot/About/Performance/scotPerforms/indicator/mortality)
- <sup>8</sup> See: [www.gov.scot/About/Performance/scotPerforms](http://www.gov.scot/About/Performance/scotPerforms)
- <sup>9</sup> See: [www.gov.scot/About/Performance/scotPerforms/indicator/smoking](http://www.gov.scot/About/Performance/scotPerforms/indicator/smoking)
- <sup>10</sup> See: [www.gov.scot/About/Performance/scotPerforms/indicator/physicalactivity](http://www.gov.scot/About/Performance/scotPerforms/indicator/physicalactivity)
- <sup>11</sup> See: [www.gov.scot/About/Performance/scotPerforms/indicator/healthyweight](http://www.gov.scot/About/Performance/scotPerforms/indicator/healthyweight)
- <sup>12</sup> *Better Health, Better Care Action Plan*. Edinburgh: Scottish Government. 2007. [www.gov.scot/Publications/2007/12/11103453/0](http://www.gov.scot/Publications/2007/12/11103453/0)
- <sup>13</sup> See: [www.healthscotland.com/keep-well.aspx](http://www.healthscotland.com/keep-well.aspx)
- <sup>14</sup> *Heart Disease Improvement Plan*. Edinburgh, Scottish Government. 2014. [www.gov.scot/Publications/2014/08/5434](http://www.gov.scot/Publications/2014/08/5434)
- <sup>15</sup> *Stroke Improvement Plan*. Edinburgh, Scottish Government. 2014. [www.gov.scot/Publications/2014/08/9114](http://www.gov.scot/Publications/2014/08/9114)
- <sup>16</sup> *Diabetes Improvement Plan*. Edinburgh, Scottish Government. 2014. [www.gov.scot/Publications/2014/11/6742](http://www.gov.scot/Publications/2014/11/6742)
- <sup>17</sup> See: [www.scotland.gov.uk/scottishhealthsurvey](http://www.scotland.gov.uk/scottishhealthsurvey)
- <sup>18</sup> Diabetes and high blood pressure are not included in the definition of ‘any CVD condition’ as they are risk factors for CVD.

## Table list

Table 8.1	Any CVD, doctor-diagnosed diabetes, any CVD or diabetes, IHD, stroke, IHD or stroke, 1995 to 2014
Table 8.2	Any CVD, doctor-diagnosed diabetes, any CVD or diabetes, IHD, stroke, IHD or stroke, 2014, by age and sex
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Table 8.4	Doctor-diagnosed diabetes, 2014, by sex and family history of diabetes
Table 8.5	Whether had CVD, IHD, stroke, 2014, by sex and family history of heart disease or stroke



**Table 8.1 Any CVD, doctor-diagnosed diabetes, any CVD or diabetes, IHD, stroke, IHD or stroke, 1995 to 2014**

<i>Aged 16 and over</i>		<i>1995 to 2014</i>									
<b>Any CVD<sup>a</sup> / doctor-diagnosed diabetes<sup>b</sup> / any CVD or diabetes<sup>b</sup> / IHD<sup>c</sup> / stroke / IHD or stroke</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014	
	%	%	%	%	%	%	%	%	%	%	
<b>Men</b>											
<b>Any CVD</b>											
16-64	8	8	10	10	10	11	10	10	9	13	
16+	n/a	n/a	15	15	15	16	16	17	16	18	
<b>Doctor-diagnosed diabetes</b>											
16-64	2	2	2	3	5	5	4	4	3	5	
16+	n/a	n/a	4	5	6	6	6	6	6	8	
<b>Any CVD or diabetes</b>											
16-64	9	10	11	12	13	14	13	13	12	17	
16+	n/a	n/a	17	18	19	20	19	20	19	23	
<b>IHD</b>											
16-64	4	4	4	3	4	3	3	3	3	4	
16+	n/a	n/a	8	7	7	8	8	7	7	8	
<b>Stroke</b>											
16-64	1	1	1	1	1	2	1	1	2	2	
16+	n/a	n/a	2	3	3	3	3	3	3	3	
<b>IHD or stroke</b>											
16-64	5	4	5	4	4	5	4	4	4	6	
16+	n/a	n/a	10	9	9	10	9	9	10	10	
<b>Women</b>											
<b>Any CVD</b>											
16-64	9	9	9	11	9	9	8	11	11	9	
16+	n/a	n/a	15	16	14	14	14	16	15	14	
<b>Doctor-diagnosed diabetes</b>											
16-64	2	2	2	3	3	3	3	3	3	3	
16+	n/a	n/a	4	4	5	4	5	5	5	5	

*Continued...*

**Table 8.1 - Continued**

*Aged 16 and over*

*1995 to 2014*

<b>Any CVD<sup>a</sup> / doctor-diagnosed diabetes<sup>b</sup> / any CVD or diabetes<sup>b</sup> / IHD<sup>c</sup> / stroke / IHD or stroke</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%	%
<b>Any CVD or diabetes</b>										
16-64	10	10	10	13	11	11	11	14	13	11
16+	n/a	n/a	16	18	17	17	17	19	19	17
<b>IHD</b>										
16-64	3	3	3	2	2	2	2	2	2	2
16+	n/a	n/a	7	6	5	5	5	6	5	5
<b>Stroke</b>										
16-64	1	1	1	1	1	1	1	2	2	1
16+	n/a	n/a	2	3	2	3	3	3	3	3
<b>IHD or stroke</b>										
16-64	3	3	3	3	2	3	3	4	3	3
16+	n/a	n/a	8	8	7	7	7	8	7	7
<b>All adults</b>										
<b>Any CVD</b>										
16-64	9	8	9	10	9	10	9	11	10	11
16+	n/a	n/a	15	15	14	15	15	16	15	16
<b>Doctor-diagnosed diabetes</b>										
16-64	2	2	2	3	4	4	4	4	3	4
16+	n/a	n/a	4	5	5	5	6	6	6	6
<b>Any CVD or diabetes</b>										
16-64	10	10	11	13	12	12	12	14	12	14
16+	n/a	n/a	17	18	18	18	18	20	19	20
<b>IHD</b>										
16-64	4	3	3	3	3	3	3	3	2	3
16+	n/a	n/a	7	6	6	6	6	7	6	6
<b>Stroke</b>										
16-64	1	1	1	1	1	2	1	1	2	1
16+	n/a	n/a	2	3	3	3	3	3	3	3

*Continued...*

**Table 8.1 - Continued**

*Aged 16 and over*

1995 to 2014

<b>Any CVD<sup>a</sup> / doctor-diagnosed diabetes<sup>b</sup> / any CVD or diabetes<sup>b</sup> / IHD<sup>c</sup> / stroke / IHD or stroke</b>	1995	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%	%
<b>IHD or stroke</b>										
16-64	4	4	4	4	3	4	4	4	4	4
16+	n/a	n/a	9	8	8	8	8	8	8	8
<i>Bases (weighted):</i>										
Men 16-64	3898	3953	3188	2542	2955	2837	2953	1885	1900	1799
Men 16+	n/a	n/a	3857	3086	3601	3465	3608	2308	2347	2236
Women 16-64	3988	3989	3327	2640	3068	2947	3069	1956	1978	1874
Women 16+	n/a	n/a	4291	3372	3926	3774	3931	2506	2545	2421
All adults 16-64	7886	7946	6517	5182	6023	5784	6023	3841	3878	3673
All adults 16+	n/a	n/a	8142	6459	7526	7240	7539	4814	4892	4657
<i>Bases (unweighted):</i>										
Men 16-64	3520	3367	2771	2084	2408	2293	2423	1517	1605	1479
Men 16+	n/a	n/a	3610	2840	3287	3112	3277	2125	2140	2066
Women 16-64	4397	4212	3461	2694	3211	3083	3178	1974	2073	1858
Women 16+	n/a	n/a	4538	3618	4239	4127	4261	2688	2752	2588
All adults 16-64	7917	7583	6233	4778	5619	5376	5601	3491	3678	3337
All adults 16+	n/a	n/a	8142	6458	7526	7239	7538	4813	4892	4654

a Any cardiovascular condition, including IHD (heart attack or angina), stroke, heart murmur, abnormal heart rhythm or 'other heart trouble' - excludes diabetes and high blood pressure

b Excludes diabetes diagnosed during pregnancy

c Heart attack or angina

**Table 8.2 Any CVD, doctor-diagnosed diabetes, any CVD or diabetes, IHD, stroke, IHD or stroke, 2014, by age and sex**

<i>Aged 16 and over</i>								<i>2014</i>
<b>Any CVD<sup>a</sup> / doctor-diagnosed diabetes<sup>b</sup> / any CVD or diabetes<sup>b</sup> / IHD<sup>c</sup> / stroke / IHD or stroke</b>	<b>Age</b>							<b>Total</b>
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
Any CVD	5	8	11	14	26	33	49	18
Doctor-diagnosed diabetes	1	1	4	8	13	17	19	8
Any CVD or diabetes	6	9	14	20	34	40	56	23
IHD	-	-	1	5	15	18	26	8
Stroke	-	-	0	1	7	8	13	3
IHD or Stroke	-	-	2	6	19	23	35	10
<b>Women</b>								
Any CVD	5	6	7	10	15	26	37	14
Doctor-diagnosed diabetes	2	1	2	4	7	12	12	5
Any CVD or diabetes	6	7	8	13	19	33	43	17
IHD	-	1	0	2	6	12	18	5
Stroke	-	0	1	2	3	9	10	3
IHD or Stroke	-	1	1	4	8	19	26	7
<b>All adults</b>								
Any CVD	5	7	9	12	20	29	42	16
Doctor-diagnosed diabetes	1	1	3	6	10	15	15	6
Any CVD or diabetes	6	8	11	16	27	37	48	20
IHD	-	0	1	4	10	15	21	6
Stroke	-	0	0	2	5	9	11	3
IHD or Stroke	-	1	1	5	14	21	30	8
<i>Bases (weighted):</i>								
<i>Men</i>	<i>320</i>	<i>358</i>	<i>357</i>	<i>417</i>	<i>348</i>	<i>264</i>	<i>173</i>	<i>2236</i>
<i>Women</i>	<i>314</i>	<i>375</i>	<i>379</i>	<i>441</i>	<i>365</i>	<i>294</i>	<i>253</i>	<i>2421</i>
<i>All adults</i>	<i>634</i>	<i>733</i>	<i>736</i>	<i>858</i>	<i>713</i>	<i>558</i>	<i>426</i>	<i>4657</i>
<i>Bases (unweighted):</i>								
<i>Men</i>	<i>202</i>	<i>251</i>	<i>306</i>	<i>361</i>	<i>359</i>	<i>361</i>	<i>226</i>	<i>2066</i>
<i>Women</i>	<i>232</i>	<i>337</i>	<i>421</i>	<i>431</i>	<i>437</i>	<i>419</i>	<i>311</i>	<i>2588</i>
<i>All adults</i>	<i>434</i>	<i>588</i>	<i>727</i>	<i>792</i>	<i>796</i>	<i>780</i>	<i>537</i>	<i>4654</i>

a Any cardiovascular condition, including IHD (heart attack or angina), stroke, heart murmur, abnormal heart rhythm or 'other heart trouble' - excludes diabetes and high blood pressure

b Excludes diabetes diagnosed during pregnancy

c Heart attack or angina

**Table 8.3 Any CVD, doctor-diagnosed diabetes, any CVD or diabetes, IHD, stroke, IHD or stroke (age-standardised), 2014, by area deprivation and sex**

*Aged 16 and over*

2014

Any CVD <sup>a</sup> / doctor-diagnosed diabetes <sup>b</sup> / any CVD or diabetes <sup>b</sup> / IHD <sup>c</sup> / stroke / IHD or stroke	Scottish Index of Multiple Deprivation				
	5th (least deprived)	4th	3rd	2nd	1st (most deprived)
	%	%	%	%	%
<b>Men</b>					
Any CVD	16	17	17	16	26
Doctor-diagnosed diabetes	6	6	10	9	10
Any CVD or diabetes	19	21	24	21	30
IHD	5	7	6	8	14
Stroke	3	2	5	4	3
IHD or Stroke	7	8	9	11	16
<b>Women</b>					
Any CVD	12	12	12	14	19
Doctor-diagnosed diabetes	3	4	5	7	8
Any CVD or diabetes	14	14	15	19	23
IHD	3	3	5	4	8
Stroke	2	3	2	4	4
IHD or Stroke	6	5	6	8	11
<b>All adults</b>					
Any CVD	14	14	15	15	22
Doctor-diagnosed diabetes	4	5	7	8	9
Any CVD or diabetes	17	17	19	20	27
IHD	4	5	5	6	11
Stroke	2	2	3	4	4
IHD or Stroke	6	7	8	9	14
<i>Bases (weighted):</i>					
<i>Men</i>	495	475	424	431	411
<i>Women</i>	490	534	463	494	439
<i>All adults</i>	985	1009	888	925	850
<i>Bases (unweighted):</i>					
<i>Men</i>	405	447	481	397	336
<i>Women</i>	481	571	556	537	443
<i>All adults</i>	886	1018	1037	934	779

a Any cardiovascular condition, including IHD (heart attack or angina), stroke, heart murmur, abnormal heart rhythm or 'other heart trouble' - excludes diabetes and high blood pressure

b Excludes diabetes diagnosed during pregnancy

c Heart attack or angina

**Table 8.4 Doctor-diagnosed diabetes, 2014, by sex and family history of diabetes**

*Aged 16 and over*

2014

Doctor-diagnosed diabetes <sup>a</sup>	Whether parents / children / siblings have type 1 or 2 diabetes		Total
	Yes	No	
	%	%	%
<b>Men</b>			
Doctor-diagnosed diabetes	17	6	8
<b>Women</b>			
Doctor-diagnosed diabetes	9	4	5
<b>All adults</b>			
Doctor-diagnosed diabetes	13	5	6
<i>Bases (weighted):</i>			
<i>Men</i>	453	1754	2237
<i>Women</i>	549	1853	2421
<i>All adults</i>	1001	3608	4658
<i>Bases (unweighted):</i>			
<i>Men</i>	415	1622	2068
<i>Women</i>	595	1974	2590
<i>All adults</i>	1010	3596	4658

<sup>a</sup> Excludes diabetes diagnosed during pregnancy

**Table 8.5 Whether had CVD, IHD, stroke, 2014, by sex and family history of heart disease or stroke**

<i>Aged 16 and over</i>		<i>2014</i>	
<b>Any CVD<sup>a</sup> / IHD<sup>b</sup> / stroke</b>	<b>Whether parents / children / siblings had heart disease or stroke before age 60</b>		<b>Total</b>
	Yes	No	
	%	%	%
<b>Men</b>			
Any CVD	29	15	18
IHD	16	5	8
Stroke	6	2	3
<b>Women</b>			
Any CVD	21	11	14
IHD	9	3	5
Stroke	5	2	3
<b>All adults</b>			
Any CVD	25	13	16
IHD	12	4	6
Stroke	5	2	3
<i>Bases</i>			
<i>(weighted):</i>			
<i>Men</i>	<i>530</i>	<i>1680</i>	<i>2236</i>
<i>Women</i>	<i>665</i>	<i>1735</i>	<i>2421</i>
<i>All adults</i>	<i>1195</i>	<i>3416</i>	<i>4657</i>
<i>Bases</i>			
<i>(unweighted):</i>			
<i>Men</i>	<i>524</i>	<i>1516</i>	<i>2066</i>
<i>Women</i>	<i>756</i>	<i>1809</i>	<i>2588</i>
<i>All adults</i>	<i>1280</i>	<i>3325</i>	<i>4654</i>

a Any cardiovascular condition, excluding diabetes or high blood pressure

b Heart attack or angina





## 9 INEQUALITIES IN HEALTH RISKS

*Linsay Gray & Alastair H Leyland*

### **SUMMARY**

#### **Alcohol consumption**

- Men and women's weekly alcohol consumption has declined over time for all deprivation groups, with no apparent change in the social patterning.
- In each year from 2008 onwards women in the least deprived areas have been between seven and nine percentage points more likely to drink at hazardous / harmful levels than those in the most deprived areas. Those in the least deprived areas have also consumed more units per week in each year of the survey, than women in the most deprived areas.
- The pattern for men in terms of drinking at hazardous / harmful levels and area deprivation was not clear.

#### **Smoking**

- Although overall smoking rates have declined since 2003, prevalence remains around 3 to 4 times higher among men and women in the most deprived areas, compared with those in the least.
- Smokers living in the most deprived areas smoked more cigarettes per day than smokers in the least deprived areas (roughly 3-5 cigarettes per day more in each year of the survey); and, while the total volume of cigarettes consumed has declined, this gap remains for male and female smokers.
- For current smokers, both the desire to quit and number of quit attempts made were not associated with area deprivation.

#### **Adult eating habits**

- Fruit and vegetable consumption was lower among adults living in the most deprived areas, and steadily increased as deprivation declined.
- The difference between the proportion eating five or more portions a day in the most and least deprived areas has not changed over time for women, but it has decreased among men.
- Adults' consumption of sweets, chocolates or biscuits once a day or more did not vary by area deprivation.
- Adults in the least deprived areas were more likely than those in the most to eat white fish (58% in least, 49% in most) and oily fish (33% least, 18% most) at least once a week, high fibre / low sugar cereal most days of the week (38% least, 24% most), and drink low-fat milk (81% least, 66% most).
- Adults in the most deprived areas were more likely than those in the least to eat processed meat products (17% least, 37% most) and chips (22% least, 40% most) twice a week or more, and to drink non-diet soft drinks at least once a day (19% least, 37% most).

#### **Child eating habits**

- Fruit and vegetable consumption was lower among children living in the most deprived areas, and steadily increased as deprivation declined.
- The difference between the proportion eating five or more portions a day in the most and least deprived areas has not changed over time for children.

- In 2012/2013/2014, children in the least deprived areas were more likely than those in the most to eat white fish (57% in least, 49% in most) and oily fish (23% least, 11% most) at least once a week, high fibre / low sugar cereal most days of the week (35% least, 23% most), 5-6 slices of high fibre bread per day (39% least, 24% most), potatoes, pasta and rice most days of the week (62% least, 45% most), and drink low-fat milk (65% least, 48% most). Boys in the least deprived areas were more likely than those in the most to eat cakes at least twice weekly (44% least, 26% most).
- Children in the most deprived areas were more likely than those in the least to eat meat products (50% most, 29% least) and chips (49% most, 28% least) twice a week or more, and to consume sweets / chocolates (58% most, 42% least) or non-diet soft drinks (45% most, 30% least) at least daily.

#### **Child physical activity**

- There was no overall association between area deprivation and the proportion of children aged 2-15 meeting the recommendation to be active for at least an hour every day.
- In contrast, the proportion of children in the most deprived areas that had participated in sport in the past week was at least 10 percentage points lower in most years than the proportion in the least deprived areas.
- This inequality in sports participation has increased significantly over time due to declining levels among those in the most deprived areas.

#### **Adult physical activity**

- Adherence to the physical activity guideline for adults declined steadily as deprivation increased, from 70% among adults in the least deprived quintile to 54% among those in the most deprived quintile.

#### **Adult BMI, overweight and obesity**

- In most years, the prevalence of obesity was at least 10 percentage points higher for adults in the most deprived quintile than in the least.
- The prevalence of overweight including obesity was higher among women in the most deprived quintile than the least deprived quintile, but the reverse tended to be true among men.
- While levels of BMI and obesity increased between 2003 and 2008 and then plateaued, its social patterning did not change significantly in the 2003-2014 period.

#### **Child obesity**

- In every year since 1998, children living in the least deprived areas had the lowest levels of obesity risk (BMI at or above the 95<sup>th</sup> centile) and, from 2009 onwards, those in the most or 2<sup>nd</sup> most deprived areas had the highest risk (difference of 9-14 percentage points).
- Children's risk of being overweight (but not obese) was unrelated to area deprivation, and has not changed over time.

## **9.1 INTRODUCTION**

Health inequalities are the systematic differences in life expectancy and physical and mental health among groups of people occupying unequal

positions in society.<sup>1</sup> These differences are essentially seen for health and its associated risks and behaviours in all societies.<sup>2</sup> Groups can be defined according to characteristics such as gender, ethnicity and, most fundamentally,<sup>3</sup> socio-economic position – whereby those who have the least access to resources such as income and education experience the highest levels of preventable illness.<sup>4</sup> There are typically gradients in health and associated risk factors by socio-economic status, such that successively more advantaged groups have incrementally better health and longer life expectancy relative to the less advantaged.<sup>2</sup> The focus of this chapter is socio-economic inequalities in health risks, by area deprivation specifically.

### 9.1.1 Policy background

Since inequalities in health are seen to be key and have been increasing over time,<sup>5</sup> reducing them is a major cause for concern and of considerable importance in Scotland.<sup>1</sup>

While health in Scotland has steadily improved for most people over the last 50 years,<sup>6,7</sup> it has not been progressing quickly enough among the most vulnerable groups in society<sup>2</sup> and entrenched inequalities remain.<sup>7,8</sup> The Scottish Government has committed to identifying the means to reducing health inequalities and their causes.<sup>9</sup> In its Report on Health Inequalities published at the beginning of 2015, the Scottish Parliament Health and Sport Committee pledged to widen the debate on health inequalities, facilitate policy development and review government action to reduce them.<sup>10</sup> This builds on previous recognition by a Ministerial Task Force on Health Inequalities of the need to monitor<sup>11</sup> and facilitate<sup>12</sup> progress in tackling health inequalities in the longer as well as short and medium term. The Task Force's first report, **Equally Well**,<sup>13</sup> established the Scottish Government's approach to monitoring and tackling inequalities in health. Its most recent report<sup>14</sup> incorporated NHS Health Scotland's policy review<sup>15</sup> of interventions to address inequalities, which emphasised the importance of actions to address the broader social and economic determinants of inequality, rather than solely focusing on NHS-based solutions. More recently, a Health Inequalities Action Group has been established to oversee delivery of actions to reduce health inequalities. These actions are based on those developed earlier by the Task Force, namely: the development of social capital; increasing the capacity of community planning partnerships to take the lead in addressing health inequality; a specific focus on the 15-44 age group; and the development of a Place Standard to improve people's living environments.<sup>14</sup>

Scotland's current national priorities are set out in the **National Performance Framework of Scotland Performs**. A healthier Scotland<sup>16</sup> brought about by improving opportunity and reducing inequalities is one of five strategic objectives underpinning its core purpose to 'create a more successful country'.<sup>17</sup> The Glasgow Centre for Population Health has called for rigorous approaches to the planning, monitoring and evaluation of action on health inequalities.<sup>18</sup>

### 9.1.2 Reporting of area-based inequalities in health risks in the Scottish Health Survey (SHeS)

This chapter considers key risks to health and their patterning by area deprivation, separately for each sex, for the current and previous survey years among adults and, importantly, children in Scotland<sup>19</sup> building on work conducted elsewhere.<sup>20</sup> For adults, the health risks covered here include alcohol consumption; cigarette smoking (including quit attempts); fruit and vegetable consumption, high-sugar processed foods and other eating habits; physical activity; and BMI. Trends in children's area-based health risks are presented for fruit and vegetable consumption; physical activity; and BMI. A summary of children's eating habits by area deprivation is also presented using combined data from the 2012, 2013 and 2014 surveys.

## 9.2 METHODS AND DEFINITIONS

### 9.2.1 Measuring health risks

#### *Weekly alcohol consumption*

Participants (aged 16 and over)<sup>21</sup> who reported that they drank alcohol were asked how often during the past 12 months they had drunk each of a range of different types of alcoholic drink, and how much of it they had drunk on each occasion. These data were used to estimate the average number of units consumed per week. The alcohol time series goes back to 2003. See Chapter 2 on alcohol consumption for further details.

#### *Current smoking status and quit attempts*

Questions on adult smoking behaviour have been included in the survey since 1995. Information is collected about cigarette smoking,<sup>22</sup> including the number smoked per day (for adults aged 16 and over), as well as about quit attempts and smokers' desire to quit (aged 18 and over).<sup>23</sup> See Chapter 3 on Smoking for more details on the smoking status classification presented in this chapter.

#### *Measures of eating habits*

Two different sets of questions were used to assess eating habits in the survey. The first assessed fruit and vegetable consumption, and was designed to monitor the 5-a-day policy. This set has been asked of all adults and children aged 5 and over since 2003 (and children aged 2 and over annually since 2008). The second set, gathering information on a wider range of eating habits, including high sugar foods, has been asked of children every year since 2008, and a sub-sample of adults biennially (2008, 2010, 2012 and 2014).<sup>24</sup> See Chapter 4 on Diet for further details on classifications.

### ***Physical activity***

The questions on child physical activity, included in SHeS since 1998, cover: sports and exercise; active play; walking; and housework or gardening (children aged 8 and over only). The adult physical activity questionnaire covers the same topics as the child questionnaire (apart from active play), however, changes made in 2003 and 2012 make comparable trend analysis more difficult to conduct. This chapter therefore presents trend data for children (1998-2014) and adult data just for 2014. Both sets of data are used to estimate adherence to government recommendations on physical activity. See Chapter 5 on physical activity for further details on classifications.

### ***Body Mass Index (BMI)***

The Body Mass Index (BMI), defined as weight (kg)/height squared ( $m^2$ ), is a widely used measure that allows for differences in weight due to height. BMI was calculated for all participants aged 2 and over for whom a valid height and weight measurement was recorded. See Chapter 6 on obesity for further details on classifications.

## **9.2.2 Scottish Index of Multiple Deprivation (SIMD)**

The Scottish Index of Multiple Deprivation (SIMD) is used within this report as the primary area-based deprivation measure. The Scottish Index of Multiple Deprivation identifies small area concentrations of multiple deprivation across all of Scotland in a consistent way and comprises of a single index based on 38 separate indicators across seven different domains: employment; income; health; education, skills and training; geographic access to services; crime; and housing. Each one of 6,505 small areas – known as data zones – comprising the whole of Scotland are then ranked according to their respective levels of deprivation from the most deprived (rank of 1) to the least deprived (rank of 6,505).

## **9.2.3 Analysis approach**

Analysis using SIMD needs careful consideration.<sup>25</sup> As data zones are ranked, the SIMD therefore provides a relative rather than an absolute measure of deprivation. In addition, it is not possible to analyse the absolute changes in SIMD over time<sup>26</sup> (with the exception of the Employment domain and a small number of individual indicators within some domains) due to changes in calculations over time although the relative change for data zones can be examined for all domains and indicators.

This report uses deprivation quintiles which are obtained by splitting the ranking of the Scotland level data zones into five quintiles with approximately 20% of the all-ages population in each. The SIMD releases in 2004, 2009v2 and 2012 were used for data from the surveys conducted in 1995, 1998 and 2003; 2008 and 2009; and 2010, 2011, 2012, 2013, 2014, respectively as per recommendations.

Age standardisation (see glossary) of results for adults has been done using 2013 population estimates for all survey years, to allow comparisons between years that are not affected by changes in the age profile of deprivation quintiles. Figures for previous years may therefore differ from those previously published. Results for children were not age-standardised.

Analysis was conducted on a pooled sample of data from all relevant survey years. Three key analyses were conducted for each of the tables produced. Firstly, the significance of the association between SIMD and the outcome of interest was assessed overall for the whole period in question. Secondly, the statistical significance of any trend over time was ascertained, for all adults or children, and for men / women separately. Finally, the extent to which any trends identified differed across the deprivation quintiles was assessed by examining the statistical significance of the association between the year and deprivation interaction and the outcome in question. This helped shape conclusions about the nature of inequalities in health risks over time.

### **9.3 ALCOHOL CONSUMPTION**

#### **9.3.1 Hazardous / harmful drinking**

The proportions of men drinking hazardous / harmful weekly amounts of alcohol significantly differed by SIMD during 2003 to 2014. However, differences were generally small, and a consistent pattern was not obvious. Although drinking at hazardous / harmful levels significantly declined over time overall among all men in the population, the rate of decline did not vary significantly by deprivation quintile.

The patterns among women were much clearer. In every year, a significantly higher proportion of women in the least deprived areas drank at hazardous / harmful levels compared with the most deprived areas. At its peak, in 2003, the difference in hazardous / harmful drinking prevalence between women in the least and most deprived quintiles was as much as 14 percentage points, though this narrowed somewhat and ranged between 7 and 9 percentage points in all other years. The differences by area deprivation did not vary significantly over time although the overall proportions did significantly decrease over time.

#### **9.3.2 Mean unit consumption**

From 2008 to 2012 men living in the most deprived quintile tended to consume higher total units of alcohol per week compared with those living in the two least deprived quintiles, although this was not the case in the earlier or most recent years. In contrast, and in line with women's patterns for hazardous / harmful drinking, women living in less deprived areas consumed higher total units of alcohol per week than those living in more deprived areas. The amounts declined over time for both sexes and this was generally true regardless of area deprivation. **Table 9.1**

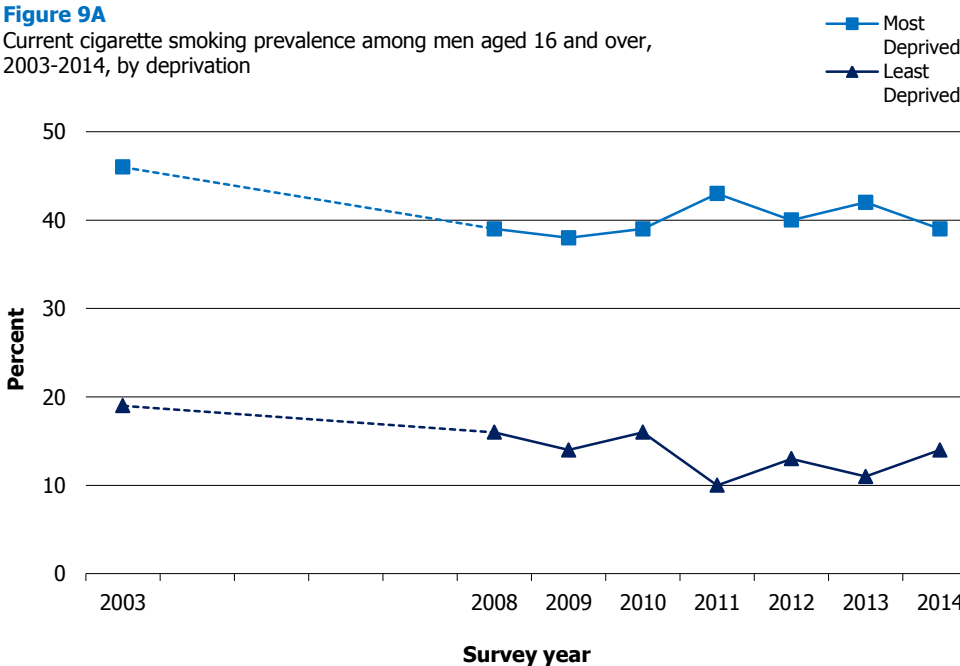
## 9.4 SMOKING

### 9.4.1 Cigarette smoking

The social inequalities in smoking prevalence have been stark in the 2003 to 2014 period, for both men and women. Current smoking was heavily socially patterned, with prevalence among men living in the most deprived areas being around 2.5 to 4 times higher than in the least deprived areas. The picture is the same for women, with those in the most deprived areas being around 3 to 4 times as likely to smoke as those in the least deprived areas, throughout this time period. As Figures 9A and 9B illustrate, smoking has significantly declined over time but with no sign that the gap between the most and least deprived has changed significantly over time.

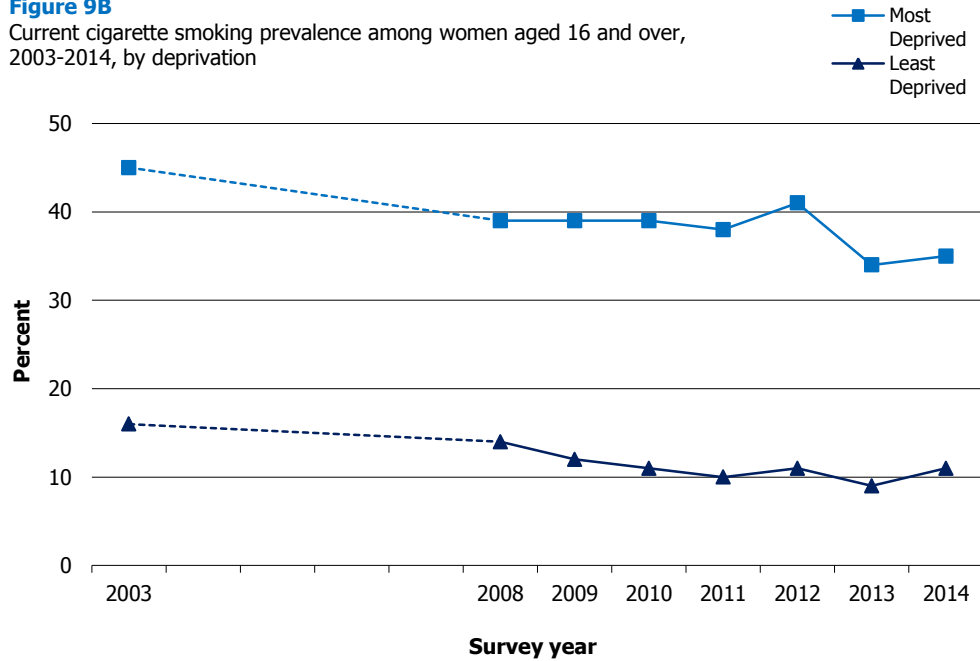
Further to smoking being much more prevalent among adults living in deprived areas, smokers living in the most deprived areas smoke significantly more cigarettes than smokers living in the least deprived areas (a difference of between roughly 3 and 5 cigarettes per day in each year of the survey). The number of cigarettes smoked has decreased significantly over the period 2003 to 2014 but this social patterning has persisted. This was true for male and female smokers alike.

Figure 9A, Figure 9B, Table 9.2



**Figure 9B**

Current cigarette smoking prevalence among women aged 16 and over, 2003-2014, by deprivation



#### 9.4.2 Quit attempts and aspirations

The number of unsuccessful<sup>27</sup> quit attempts reported by smokers did not vary significantly overall by area deprivation, nor over time during 2003 to 2014. This was the case for both men and women, though prevalence of smoking is much lower in the least deprived areas, so the sample sizes for smokers in these areas are quite small.

The proportions of male and female smokers who would like to quit did not vary significantly by area deprivation during the time period. Looking at the whole population, the overall proportion of male smokers who would like to quit declined during 2003 to 2014, indicating a more persistent population of smokers as overall smoking prevalence has declined (see Table 9.2). The proportion did not vary significantly for female smokers.

**Table 9.3**

### 9.5 EATING HABITS

#### 9.5.1 Trends in fruit and vegetable consumption since 2003

##### *Adults*

For both men and women, consumption of five or more portions of fruit and vegetables per day was patterned by area deprivation, with the proportion meeting this recommendation increasing as deprivation decreased. Across the whole population, consumption of five or more portions of fruit and vegetables per day did not vary by year for men but increased and then declined slightly for women. There was a significant change over time in the patterning by area deprivation of men's consumption, with the gap between the most deprived and the least deprived narrowing over time (due mainly to consumption increasing

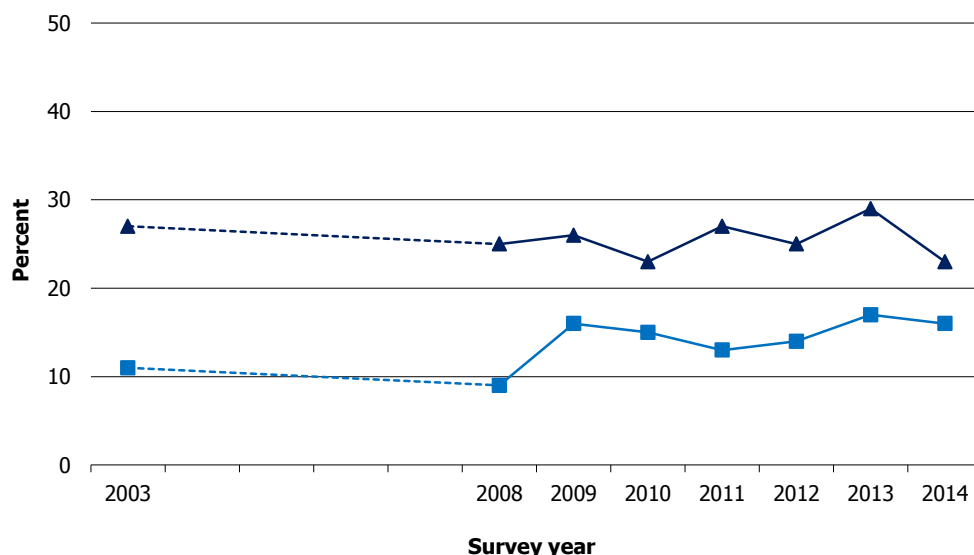


somewhat among men living in the most deprived areas). The gap for women, on the other hand, remained.

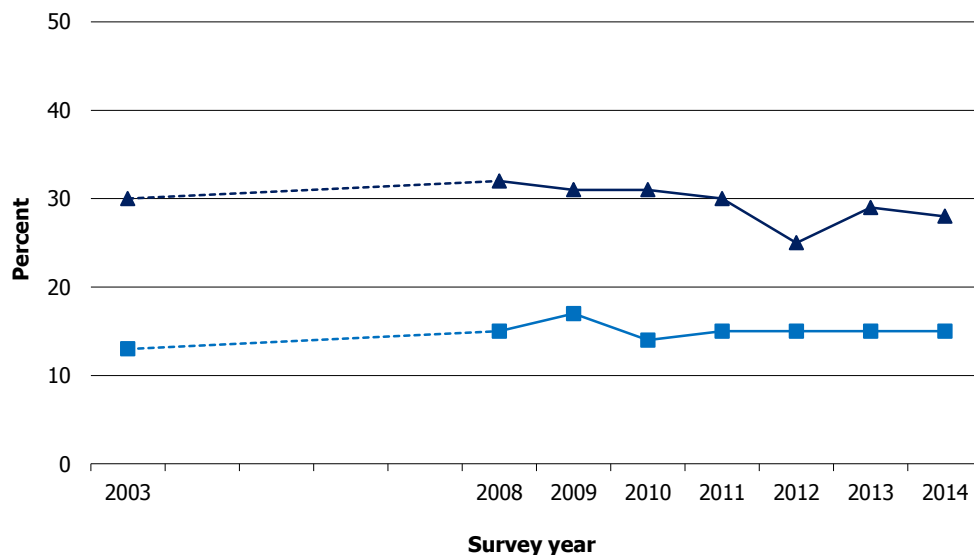
In each year, the mean number of fruit and vegetable portions consumed was significantly lower for individuals living in more deprived areas than those living in less deprived areas (with a steady decline apparent between each quintile); this held for both men and women. The mean number of portions consumed by women varied significantly over time (with a small increase followed by a decline from 2009 onwards – see Table 4.1) but did not vary significantly for men. There were no significant changes over time in the area deprivation inequalities in mean portions consumed.

**Figure 9C, Figure 9D, Table 9.4**

**Figure 9C**  
Five or more fruit and vegetable portions per day among men aged 16 and over, 2003-2014, by deprivation



**Figure 9D**  
Five or more fruit and vegetable portions per day among women aged 16 and over, 2003-2014, by deprivation



### ***Children***

For the period 2003 to 2014 as a whole, the proportion of children aged 5-15 consuming five portions or more of fruit and vegetables was significantly lower among those living in the most deprived areas compared with those living in the least deprived areas. This was generally the case for each individual year. Although the proportion of all children in each period eating five or more portions per day fluctuated over time across all quintiles these differences were not statistically significant.

The mean fruit and vegetable portions consumed was significantly lower among children living in the most deprived areas compared with those from the least deprived areas, with no change in this pattern evident over time. There was no significant change over time in consumption in the whole population.

**Table 9.5**

### **9.5.2 Trends in adult high-sugar processed food consumption since 2008**

This section reports trends in the social patterning of high-sugar processed food consumption. The following section (9.5.3) covers a wider range of food types, but does not include trends.

#### ***Sweets or chocolates***

Adults' consumption of sweets or chocolates once a day or more did not vary significantly by area deprivation for either men or women during 2008 to 2014. Looking at the whole population, there was significant variation in consumption levels over time among women but with no discernible pattern.

#### ***Biscuits***

As for sweets or chocolates, the consumption of biscuits once a day or more among adults during 2008 to 2014 did not vary by area deprivation. There was a significant decrease in at least daily biscuit consumption over time among women overall, but with no apparent change to its social patterning.

#### ***Non-diet soft drinks***

The proportion of adults consuming non-diet soft drinks once a day or more during 2008 to 2014 was significantly higher among those living in the most deprived areas than the least. For example, among men, non-diet soft drink consumption was consistently more than 1.5 times higher in the most deprived areas compared to the least. There were no changes in these inequalities over time for men. The disparities in consumption of non-diet soft drinks once a day or more generally widened between 2008 and 2014 for women, although not significantly so.

**Table 9.6**

### 9.5.3 Adult eating habits in 2014, by SIMD

This section reports some additional adult eating habits data by SIMD and sex. As noted in Section 9.2.3, the figures reported in Table 9.7 have been age-standardised.

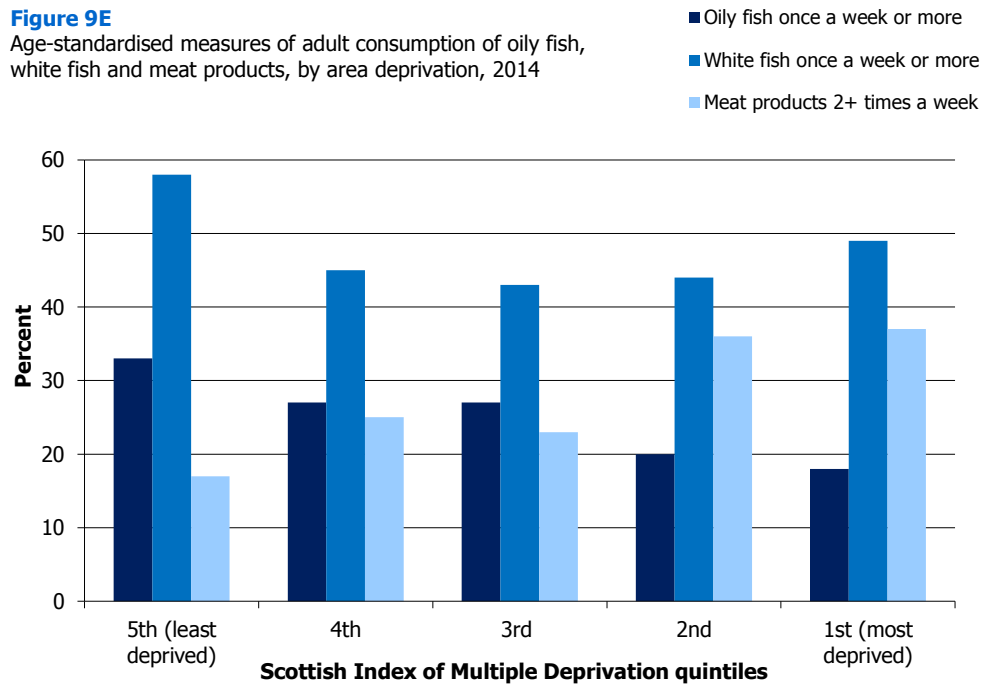
#### *Meat and fish*

Figure 9E and Table 9.7 show that the age-standardised prevalence of white fish, oily fish and meat product consumption all varied according to levels of area deprivation in 2014. White fish and oily fish were consumed more frequently by people in less deprived areas than those in more deprived areas, while the reverse was true for the consumption of meat products. One third of adults (33%) in the least deprived areas ate oily fish at least once a week, declining to one sixth (18%) in the most deprived areas, with a similar pattern for white fish (58% in least, 49% in most). In contrast, one sixth of adults (17%) in the least deprived areas ate meat products more than once a week, compared with more than double that proportion (37%) in the most deprived areas. There was less of a clear pattern for red meat with 48% in the most deprived areas eating it twice or more a week and 54-61% in the other, less deprived areas.

**Figure 9E, Table 9.7**

**Figure 9E**

Age-standardised measures of adult consumption of oily fish, white fish and meat products, by area deprivation, 2014



#### *Milk*

A greater proportion of adults living in the least deprived areas, in 2014, consumed skimmed or semi-skimmed milk than those living in the most deprived areas (81% and 66% respectively, using age-standardised measures).

**Table 9.7**

### ***Foods rich in starch and fibre***

People living in the least deprived areas were more likely to consume high-fibre, low sugar cereal than those in the two most deprived quintiles (38% and 24%, respectively, age-standardised prevalence). Eating 2-3 slices of high fibre bread daily showed a similar pattern (47% did this in the least deprived areas compared with 34-35% in the two most deprived quintiles).

**Table 9.7**

### ***Foods and drinks high in fat and / or sugar***

Age-standardised measures of the consumption of the sugary foods mentioned above (sweets, biscuits, cakes and ice-cream) did not vary significantly with levels of area deprivation in 2014 (section 9.5.2 illustrated that this has not changed over time). However, the age-standardised prevalence of daily consumption of non-diet soft drinks increased with higher levels of area deprivation, almost doubling from 19% in the least deprived areas to 37% in the most deprived.

A similar pattern was observed for the age-standardised prevalence of the consumption of chips at least twice a week, increasing from 22% in the least deprived areas to 40% in the most deprived.

Patterns of the daily consumption of crisps differed for men and women. Age-standardised measures of crisp consumption showed that women in the two most deprived quintiles were more likely to eat crisps daily than those in the other three quintiles (25-27%, compared with 13-15%). Figures for men living in the two most deprived quintiles, however, were similar to those for men living in the two least deprived quintiles (all between 23% and 26%).

**Table 9.7**

#### **9.5.4 Child eating habits in 2012/2013/2014, by SIMD**

Table 9.8 presents eating habits by area deprivation for children aged 2-15 for the same food items shown in Table 9.7 for adults. To increase the precision of the results, data from the 2012, 2013 and 2014 surveys have been combined.

### ***Meat and fish***

Consumption of oily fish at least once a week declined as deprivation increased, from 23% for children in the least deprived quintile to 11% for those in the two most deprived quintiles. Levels of at least weekly white fish consumption were much higher overall, but also declined with deprivation, from 57% in the two least deprived quintiles to 48-49% in the two most deprived. In contrast, tuna fish consumption did not vary significantly by area deprivation. Consumption of meat products at least twice weekly increased steadily across each deprivation quintile, from 29% of children in the least deprived areas to 50% of those in the most deprived areas. Red meat consumption was similar across all deprivation quintiles. While these overall patterns were generally the same for boys and girls separately, the patterns for meat products diverged a little. Boys' consumption of meat products increased steadily with deprivation across each quintile before stabilising at 51-52% in the two most deprived quintiles. In contrast, girls' consumption levels were

similar in the three least deprived quintiles (24-27%) before increasing to 38% and 48% in the second and first most deprived quintiles, respectively.

### ***Milk***

Drinking low-fat milk declined steadily as area deprivation increased, from 65% for children in the least deprived areas to 48% for those in the most, with similar patterns for boys and girls.

### ***Foods rich in starch and fibre***

The proportion of children eating 2-3 slices of high fibre bread daily almost halved between the least and most deprived areas (from 39% to 24%, respectively). High fibre / low sugar cereal consumption followed a very similar pattern, with 35% of children in the least deprived areas eating this 5-6 times a week compared with 23% of those in the two most deprived quintiles. These patterns were true for boys and girls, though boys tended to be more likely than girls to eat these types of food. Consumption of potatoes, pasta or rice at least five times a week declined steadily as deprivation increased, from 62% in the least deprived quintile to 45% in the most, with same level of decline seen for both boys and girls.

### ***Foods and drinks high in fat and / or sugar***

Daily consumption of sweets / chocolates increased with increasing levels of deprivation, from 42% in the least deprived quintile to 58% in the most deprived quintile. Daily consumption of non-diet soft drinks also increased with area deprivation, from 30% for children in the least deprived quintile to 44-45% in the two most deprived quintiles. The patterns for boys and girls were very similar. Eating cakes at least twice a week was more common among children in the least deprived quintile (39%) than in the two most deprived quintiles (26-28%). However, this pattern was largely accounted for by boy's cake consumption patterns: 44% of boys in the least deprived quintile ate cakes at least twice a week compared with 26-28% in the two most deprived quintiles, whereas the figures for girls fluctuated with no clear pattern. The other high sugar products in Table 9.8 (biscuits and ice cream) did not vary by deprivation.

Eating chips at least twice weekly increased across the deprivation quintiles, from 28% in the least deprived areas to 49% in the two most deprived. Daily crisp consumption followed a very similar pattern, increasing from 27% in the least deprived quintile to 47% in the most. The separate patterns for boys and girls were very similar. **Table 9.8**

## **9.6 PHYSICAL ACTIVITY**

### **9.6.1 Child physical activity**

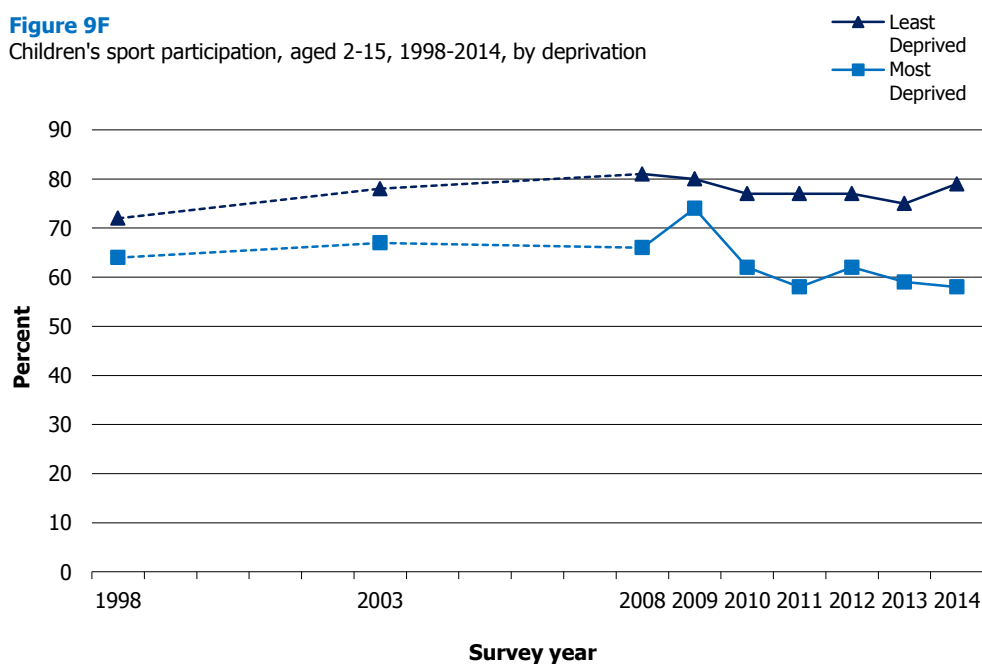
Taking the period 1998 to 2014 as a whole, there was no significant association between level of area deprivation and the proportion of

children meeting the physical activity guideline of at least 60 minutes' activity on every day of the week using the measure that excludes activity at school (the same was true for the more recent data including school activity). There was an increase in activity levels over time from 2008 (including school-based activities) that varied significantly by area deprivation, with the greatest increase seen among children living in the middle (third most deprived) quintile.

### 9.6.2 Child sport participation in the last week

Across 1998 to 2014 as a whole, sport participation in the last week was more common among children living in the least deprived areas compared to those living the most deprived areas. There was a significant decline over time in sport participation among children, with the decline most apparent in the three most deprived quintiles. This widening of inequalities in children's sports participation by SIMD is illustrated in Figure 9F.

**Figure 9F, Table 9.9**



### 9.6.3 Adult summary physical activity levels, and adherence to the aerobic activity guideline in 2014

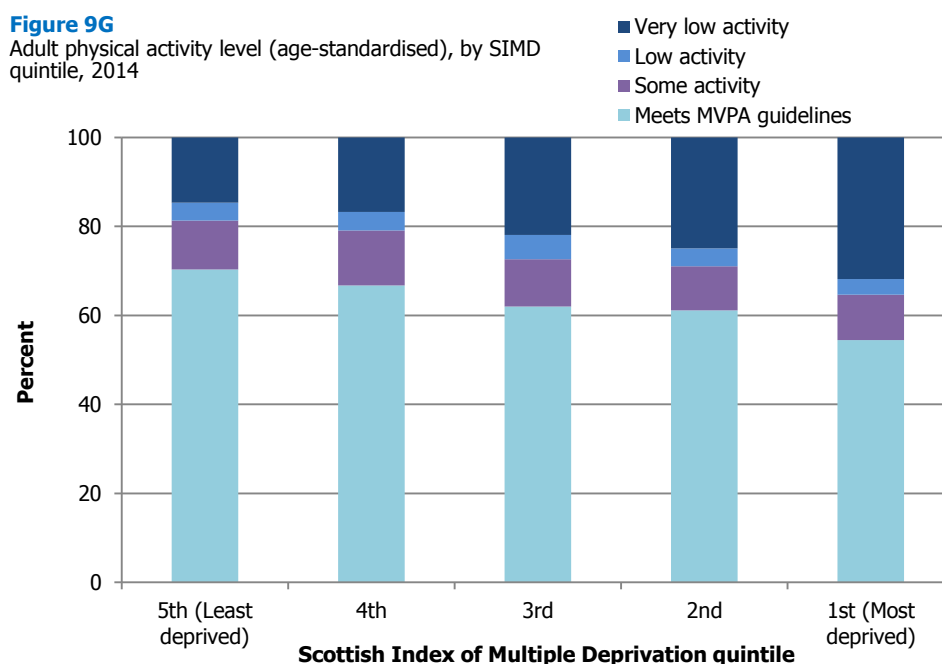
As noted in Section 9.2.1, this section reports adult physical activity by SIMD only for 2014. The figures reported in Figure 9G and Table 9.10 have been age-standardised.

As Chapter 5 outlines, the current activity guidelines advise adults to accumulate 150 minutes of moderate activity or 75 minutes of vigorous activity per week or an equivalent combination of both, in bouts of 10 minutes or more (this is referred to as the MVPA guideline). Adult activity levels were significantly associated with area deprivation in 2014. The age-standardised prevalence of adherence to the MVPA guideline was highest among adults in the least deprived areas (70%),

and steadily declined with increasing deprivation to 54% among adults in the most deprived areas. This pattern was true for both men and women.

As Figure 9G illustrates, the decline in adherence to the guideline as deprivation increased was almost entirely due to increasing levels of very low activity as deprivation increased (less than half an hour a week of moderate activity or the equivalent level of vigorous activity), with very little variation apparent for the other two activity levels presented.<sup>28</sup>

**Figure 9G, Table 9.10**



## 9.7 OVERWEIGHT AND OBESITY

### 9.7.1 Adults

Considering 2003 to 2014 overall, there was a significant association between SIMD and the prevalence of men who were overweight and obese (BMI 25 kg/m<sup>2</sup> and over). The patterns in each year were not wholly consistent, but overweight / obesity was generally significantly higher for those living in the least deprived quintile compared with those living in the most deprived quintile. The pattern was reversed among women, and was much clearer with overweight / obesity significantly higher among those living in more deprived areas than the least. There were no significant changes over time, and so it remains the case that just over half of women in the least deprived areas are overweight or obese compared with almost two-thirds of those in the most.

Obesity (BMI 30 kg/m<sup>2</sup> and over) prevalence was significantly higher among those living in more deprived areas compared with those living in less deprived areas during 2003 to 2014; this was the case among both men and women (though absolute differences were generally

larger for women). There was a significant increase between 2003 and 2008 in obesity among men but not women, but the social patterning did not change over time.

The patterns described above were also evident among adults with BMI of 40 kg/m<sup>2</sup> and over; prevalence was higher among those living in more deprived areas compared with those living in less deprived areas during 2003 to 2014. The social patterning of BMI 40 kg/m<sup>2</sup> and over has not changed over time.

Mean BMI was significantly higher among those living in more deprived areas compared with those living in less deprived areas during 2003 to 2014; this was the case among both men and women. There was a significant increase over time in mean BMI among men across the whole population, but not women, and the patterning of social inequalities in mean BMI has not changed.

**Table 9.11**

### **9.7.2 Children**

There was a significant association between SIMD and the proportion of children aged 2-15 with a weight within the healthy range in the 1998-2014 period. For the majority of years, children living in the least deprived quintiles were the most likely to have a healthy weight, with those living in the two most deprived quintiles typically the least likely to do so. Across the whole population, there was no significant variation over time in the proportions with weight within the healthy range. However, the association between SIMD and healthy weight has varied significantly over time, with the pattern described above generally becoming more evident from 2009 onwards.

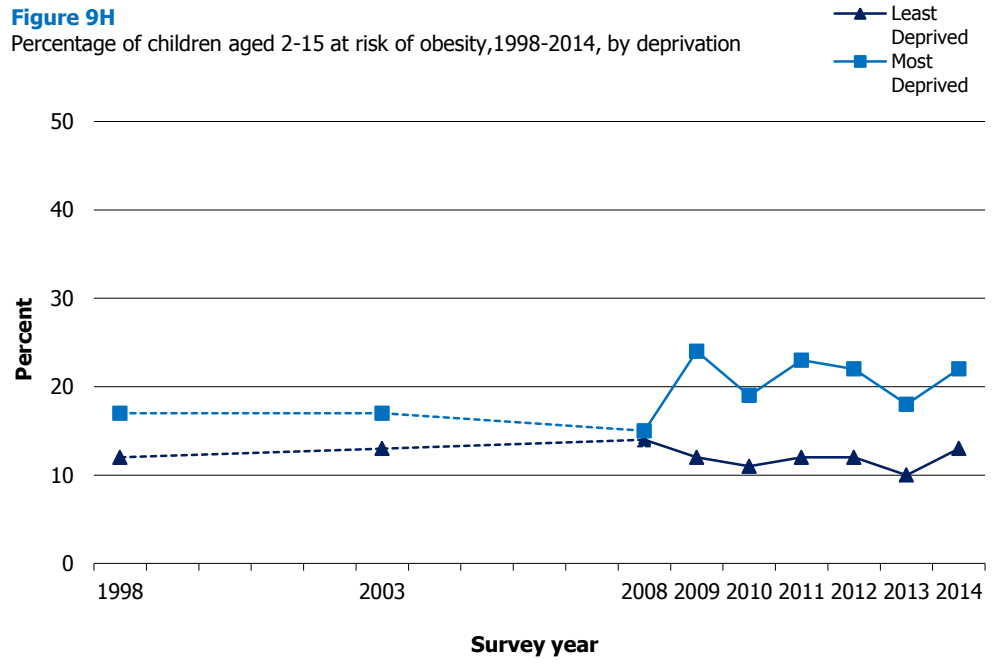
Table 9.12 presents the proportions of children at risk of overweight (BMI at or above the 85<sup>th</sup> percentile but below the 95<sup>th</sup> percentile) and those at risk of obesity (BMI at or above the 95<sup>th</sup> centile). These two sets of figures illustrate how the pattern described above for healthy weight is largely accounted for by the social patterning in prevalence of obesity risk. Being at risk of overweight (but not obese) was not associated with area deprivation, with figures very similar across the quintiles in most years. In contrast, in every year, children living in the least deprived areas had the lowest levels of obesity risk (BMI at or above the 95<sup>th</sup> centile) and, from 2009 onwards, those in the most or 2<sup>nd</sup> most deprived areas had the highest risk. While overall levels of overweight or obesity did not vary significantly over time, the association between SIMD and risk of obesity did, as Figure 9H illustrates.

**Figure 9H, Table 9.12**



**Figure 9H**

Percentage of children aged 2-15 at risk of obesity, 1998-2014, by deprivation



## References and notes

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- 4 See: [www.gov.scot/About/Performance/scotPerforms/outcome/inequalities](http://www.gov.scot/About/Performance/scotPerforms/outcome/inequalities)
- 5 See: [www.scotpho.org.uk/comparative-health/health-inequalities/introduction](http://www.scotpho.org.uk/comparative-health/health-inequalities/introduction)
- 6 See: [www.healthscotland.com/about/index.aspx](http://www.healthscotland.com/about/index.aspx)
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- 12 See: [www.gov.scot/Publications/2008/11/20103815/0](http://www.gov.scot/Publications/2008/11/20103815/0)
- 13 See: [www.gov.scot/resource/doc/229649/0062206.pdf](http://www.gov.scot/resource/doc/229649/0062206.pdf)
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- 18 See: [www.gcph.co.uk/assets/0000/2626/GCPH\\_Briefing\\_Paper\\_30web.pdf](http://www.gcph.co.uk/assets/0000/2626/GCPH_Briefing_Paper_30web.pdf)
- 19 See: [www.gov.scot/Resource/Doc/257007/0076309.pdf](http://www.gov.scot/Resource/Doc/257007/0076309.pdf)
- 20 Hotchkiss JW, Davies C, Gray L, Bromley C, Capewell S, Leyland AH. Trends in adult cardiovascular disease risk factors and their socio-economic patterning in the Scottish population 1995-2008: cross-sectional surveys. *BMJ Open*. 2011 Jan 1;1(1):e000176.
- 21 Adults aged 20 and over were asked about their alcohol consumption and smoking status during the face to face interview. For those aged 16 and 17 information was collected in a self-completion questionnaire, offering more privacy and reducing the likelihood of them concealing behaviour in front of other household members. At the interviewer's discretion, those aged 18 and 19 could answer the questions either face to face or via the self-completion booklet.
- 22 The definition of current smoker used in this report excludes cigar and pipe use, though this information is collected in the survey.

- <sup>23</sup> See endnote 21 for details of how the questions were asked. The questions about quit attempts and desire to quit not asked in the self-completion (space constraints).
- <sup>24</sup> Some of the items in the eating habits module have a longer time series, starting in 1995 or 1998, but a number of changes made over the years mean that the most consistent data are for the 2008-onwards period.
- <sup>25</sup> See: [www.gov.scot/Topics/Statistics/SIMD/GuidanceAnal](http://www.gov.scot/Topics/Statistics/SIMD/GuidanceAnal)
- <sup>26</sup> See: [www.gov.scot/Topics/Statistics/SIMD/SIMDovertime](http://www.gov.scot/Topics/Statistics/SIMD/SIMDovertime)
- <sup>27</sup> As these figures are based only on current smokers, they represent the prevalence of unsuccessful quit attempts.
- <sup>28</sup> Some activity was defined as: 60-149 mins/week of moderate physical activity, 30-74 mins/week vigorous physical activity, or an equivalent combination of these; low activity was defined as: 30-59 mins/week of moderate physical activity, 15-29 mins/week vigorous physical activity or an equivalent combination of these.

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**Table 9.1 Estimated usual weekly alcohol consumption level (age-standardised), 2003 to 2014, by area deprivation and sex**

<i>Aged 16 and over</i>		<i>2003 to 2014</i>						
<b>Alcohol units per week<sup>a</sup></b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
Hazardous / harmful drinking								
5th (least deprived)	35	31	30	31	25	25	25	23
4th	33	32	27	25	30	20	25	21
3rd	33	28	28	26	23	27	21	25
2nd	32	27	24	28	24	23	19	22
1st (most deprived)	30	31	25	26	22	27	23	23
Mean units per week								
5th (least deprived)	20.0	16.8	16.9	15.8	15.0	15.3	14.0	13.7
4th	20.2	18.3	16.3	15.2	16.2	15.4	14.4	14.1
3rd	19.4	16.4	19.6	15.1	14.2	14.5	14.4	13.4
2nd	18.0	16.5	15.9	15.7	14.4	14.3	12.3	13.3
1st (most deprived)	20.1	20.1	18.9	17.6	15.3	16.5	13.8	13.1
SE of the mean								
5th (least deprived)	1.10	0.95	0.91	0.92	0.85	0.96	0.87	0.97
4th	1.33	1.03	0.93	1.06	0.89	1.67	1.09	0.92
3rd	1.07	0.96	3.25	1.09	0.82	1.06	1.14	1.18
2nd	1.04	1.06	1.38	0.98	0.84	1.40	1.00	1.10
1st (most deprived)	1.54	1.64	1.83	1.22	1.22	1.79	1.21	1.17
<b>Women</b>								
Hazardous / harmful drinking								
5th (least deprived)	32	25	23	23	22	22	20	21
4th	26	23	19	20	19	20	17	20
3rd	21	20	18	19	21	17	17	16
2nd	20	18	15	13	15	16	12	16
1st (most deprived)	18	16	16	15	13	13	11	12
Mean units per week								
5th (least deprived)	10.3	9.3	8.9	8.8	8.9	8.7	8.4	8.5
4th	11.0	8.8	8.0	7.9	7.8	9.5	7.2	7.9
3rd	8.3	8.9	8.3	7.8	8.2	7.2	7.4	7.3
2nd	7.9	7.4	7.1	5.5	6.3	6.6	5.2	7.1
1st (most deprived)	7.4	7.9	6.6	7.6	5.7	6.1	5.3	5.7
SE of the mean								
5th (least deprived)	0.47	0.60	0.43	0.49	0.52	0.72	0.60	0.66
4th	1.03	0.60	0.78	0.42	0.48	1.15	0.47	0.51
3rd	0.45	0.99	0.60	0.48	0.50	0.64	0.63	1.04
2nd	0.59	0.52	0.47	0.40	0.46	0.51	0.38	0.93
1st (most deprived)	0.59	0.65	0.48	0.66	0.41	0.67	0.55	0.48

*Continued...*

**Table 9.1 - Continued**

*Aged 16 and over*

*2003 to 2014*

<b>Alcohol units per week<sup>a</sup></b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>All adults</b>								
Hazardous / harmful drinking								
5th (least deprived)	34	28	27	27	24	23	23	22
4th	30	27	23	23	24	20	21	20
3rd	27	24	23	22	22	22	19	20
2nd	26	22	20	20	19	20	15	19
1st (most deprived)	23	23	20	20	17	19	16	17
Mean units per week								
5th (least deprived)	15.0	12.8	12.8	12.2	11.9	11.9	11.3	11.1
4th	15.5	13.6	12.1	11.4	11.9	12.4	10.6	10.8
3rd	13.6	12.4	13.7	11.3	10.9	10.7	10.8	10.2
2nd	12.6	11.7	11.4	10.3	10.1	10.3	8.6	9.9
1st (most deprived)	13.1	13.5	12.0	12.2	10.3	10.8	9.1	9.3
SE of the mean								
5th (least deprived)	0.66	0.58	0.56	0.59	0.58	0.67	0.63	0.66
4th	0.85	0.69	0.66	0.60	0.55	1.03	0.64	0.55
3rd	0.64	0.73	1.63	0.62	0.55	0.70	0.71	0.99
2nd	0.63	0.63	0.79	0.54	0.54	0.73	0.54	0.73
1st (most deprived)	0.77	0.87	0.86	0.67	0.68	0.91	0.65	0.70
<i>Bases (weighted):</i>								
<i>Men - 5th (least deprived)</i>	809	543	778	646	671	478	521	486
<i>Men - 4th</i>	812	710	782	703	788	474	460	462
<i>Men - 3rd</i>	745	567	673	668	743	464	482	404
<i>Men - 2nd</i>	742	630	729	688	662	459	462	416
<i>Men - 1st (most deprived)</i>	685	559	614	687	686	381	382	400
<i>Women - 5th (least deprived)</i>	877	613	840	678	716	518	496	485
<i>Women - 4th</i>	852	712	787	750	812	481	512	526
<i>Women - 3rd</i>	816	641	735	720	871	508	524	453
<i>Women - 2nd</i>	841	688	776	774	721	494	495	491
<i>Women - 1st (most deprived)</i>	830	660	777	789	752	465	476	434
<i>All adults - 5th (least deprived)</i>	1686	1156	1619	1324	1387	996	1018	971
<i>All adults - 4th</i>	1664	1422	1569	1452	1600	955	972	988
<i>All adults - 3rd</i>	1561	1208	1408	1388	1615	972	1005	857
<i>All adults - 2nd</i>	1583	1318	1505	1462	1383	953	957	907
<i>All adults - 1st (most deprived)</i>	1515	1220	1391	1476	1439	846	858	834

*Continued...*

**Table 9.1 - Continued***Aged 16 and over**2003 to 2014*

<b>Alcohol units per week<sup>a</sup></b>	<b>2003</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<i>Bases (unweighted):</i>								
<i>Men - 5th (least deprived)</i>	706	466	644	504	553	437	403	398
<i>Men - 4th</i>	786	711	762	678	799	493	442	444
<i>Men - 3rd</i>	789	601	694	608	710	479	500	471
<i>Men - 2nd</i>	688	561	610	602	572	390	437	388
<i>Men - 1st (most deprived)</i>	589	455	566	671	605	296	326	327
<i>Women - 5th (least deprived)</i>	858	596	814	656	719	540	470	477
<i>Women - 4th</i>	964	869	927	865	996	592	592	566
<i>Women - 3rd</i>	963	758	880	792	958	601	660	551
<i>Women - 2nd</i>	880	709	781	805	749	504	550	533
<i>Women - 1st (most deprived)</i>	817	644	830	956	798	420	452	437
<i>All adults - 5th (least deprived)</i>	1564	1062	1458	1160	1272	977	873	875
<i>All adults - 4th</i>	1750	1580	1689	1543	1795	1085	1034	1010
<i>All adults - 3rd</i>	1752	1359	1574	1400	1668	1080	1160	1022
<i>All adults - 2nd</i>	1568	1270	1391	1407	1321	894	987	921
<i>All adults - 1st (most deprived)</i>	1406	1099	1396	1627	1403	716	778	764

a Non-drinker: no units per week; Moderate: >0 units and up to 21 units for men / 14 units for women;  
 Hazardous / harmful: more than 21 units for men / 14 units for women

**Table 9.2 Cigarette smoking status (age-standardised), 2003 to 2014, by area deprivation and sex**

<i>Aged 16 and over</i>		<i>2003 to 2014</i>						
<b>Cigarette smoking status</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
Current cigarette smoker								
5th (least deprived)	19	16	14	16	10	13	11	14
4th	23	19	17	20	18	20	19	16
3rd	26	29	29	23	24	24	26	19
2nd	33	32	32	32	27	32	25	28
1st (most deprived)	46	39	38	39	43	40	42	39
Mean per current smoker per day								
5th (least deprived)	12.8	10.1	13.1	10.7	12.9	12.7	[9.8]	[10.2]
4th	16.0	15.2	13.9	13.7	12.3	12.2	14.1	12.4
3rd	16.6	15.9	15.2	14.9	14.5	16.2	13.1	14.0
2nd	16.2	16.9	16.1	14.9	14.5	14.7	14.8	13.8
1st (most deprived)	17.3	17.6	17.1	16.6	15.7	16.1	14.1	14.7
SE of the mean								
5th (least deprived)	0.92	1.27	1.58	0.83	1.16	1.22	1.66	1.49
4th	0.75	1.14	0.83	1.12	0.78	1.00	1.38	1.12
3rd	0.75	0.95	0.98	1.54	0.79	1.13	0.92	0.85
2nd	0.76	0.85	0.80	0.75	0.69	0.84	0.76	0.88
1st (most deprived)	0.55	0.90	0.64	0.74	0.61	1.04	0.94	0.89
<b>Women</b>								
Current cigarette smoker								
5th (least deprived)	16	14	12	11	10	11	9	11
4th	20	17	17	17	16	18	15	16
3rd	26	26	27	24	22	22	20	17
2nd	34	28	30	30	26	29	23	29
1st (most deprived)	45	39	39	39	38	41	34	35
Mean per current smoker per day								
5th (least deprived)	11.5	12.5	11.7	10.6	12.4	9.3	[9.1]	[9.1]
4th	12.9	12.7	11.5	10.4	10.6	11.0	10.3	11.4
3rd	14.9	12.6	12.8	12.5	12.8	11.3	12.1	13.1
2nd	15.1	13.5	14.1	13.3	13.5	12.8	14.5	13.7
1st (most deprived)	16.5	15.6	14.8	15.2	15.1	14.3	13.3	14.7
SE of the mean								
5th (least deprived)	1.01	0.89	0.91	0.79	0.94	1.10	0.98	1.20
4th	0.62	0.81	0.54	0.76	0.75	1.10	0.69	0.83
3rd	0.59	0.55	0.58	0.60	0.64	0.74	0.76	0.72
2nd	0.55	0.57	0.56	0.51	0.53	0.74	1.02	0.77
1st (most deprived)	0.45	0.58	0.51	0.45	0.54	0.68	0.63	0.75

*Continued...*



**Table 9.2 - Continued**

*Aged 16 and over*

*2003 to 2014*

<b>Cigarette smoking status</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>All adults</b>								
Current cigarette smoker								
5th (least deprived)	17	15	13	14	10	12	10	12
4th	21	18	17	18	17	19	17	16
3rd	26	27	28	23	23	23	23	18
2nd	34	30	31	31	26	30	24	29
1st (most deprived)	45	39	39	39	41	41	37	37
Mean per current smoker per day								
5th (least deprived)	12.2	11.3	12.4	10.7	12.6	11.2	9.5	9.7
4th	14.5	14.0	12.6	12.2	11.5	11.7	12.3	11.9
3rd	15.7	14.2	14.0	13.6	13.6	13.8	12.6	13.6
2nd	15.6	15.2	15.1	14.1	14.0	13.7	14.7	13.8
1st (most deprived)	16.9	16.5	15.7	15.8	15.4	15.1	13.7	14.7
SE of the mean								
5th (least deprived)	0.84	0.75	1.04	0.63	0.83	0.80	1.05	1.03
4th	0.51	0.77	0.54	0.76	0.56	0.78	0.84	0.71
3rd	0.51	0.57	0.57	0.71	0.53	0.75	0.61	0.58
2nd	0.49	0.51	0.51	0.44	0.48	0.60	0.64	0.65
1st (most deprived)	0.41	0.56	0.44	0.41	0.43	0.60	0.62	0.61
<i>Bases (weighted)<sup>b</sup>:</i>								
<i>Men - 5th (least deprived)</i>	811	550	777	657	676	480	533	493
<i>Men - 4th</i>	814	719	780	708	802	483	461	464
<i>Men - 3rd</i>	753	579	666	674	750	475	488	414
<i>Men - 2nd</i>	746	644	726	688	660	469	466	428
<i>Men - 1st (most deprived)</i>	696	572	611	697	694	386	385	407
<i>Women - 5th (least deprived)</i>	882	622	837	687	720	524	500	489
<i>Women - 4th</i>	863	721	785	758	823	484	520	534
<i>Women - 3rd</i>	834	643	734	726	879	512	532	461
<i>Women - 2nd</i>	846	690	776	785	730	495	500	493
<i>Women - 1st (most deprived)</i>	841	668	776	795	755	473	481	439
<i>All adults - 5th (least deprived)</i>	1693	1172	1613	1344	1396	1004	1033	982
<i>All adults - 4th</i>	1678	1440	1564	1466	1625	967	981	999
<i>All adults - 3rd</i>	1587	1222	1400	1400	1629	988	1019	875
<i>All adults - 2nd</i>	1592	1334	1502	1472	1390	964	966	921
<i>All adults - 1st (most deprived)</i>	1537	1240	1387	1492	1448	859	866	846

*Continued...*

**Table 9.2 - Continued***Aged 16 and over**2003 to 2014*

<b>Cigarette smoking status</b>	2003	2008	2009	2010	2011	2012	2013	2014
<i>Bases (weighted)<sup>b</sup>:</i>								
<i>Men - 5th (least deprived)</i>	708	468	643	510	556	439	410	404
<i>Men - 4th</i>	790	717	761	684	805	497	444	446
<i>Men - 3rd</i>	796	608	690	614	715	487	508	478
<i>Men - 2nd</i>	691	570	607	604	572	396	441	395
<i>Men - 1st (most deprived)</i>	597	464	564	679	615	300	328	334
<i>Women - 5th (least deprived)</i>	861	601	812	662	722	545	473	480
<i>Women - 4th</i>	970	873	926	871	1002	596	597	572
<i>Women - 3rd</i>	971	761	879	796	963	604	666	555
<i>Women - 2nd</i>	885	711	781	814	755	506	554	535
<i>Women - 1st (most deprived)</i>	827	651	829	964	801	426	456	443
<i>All adults - 5th (least deprived)</i>	1569	1069	1455	1172	1278	984	883	884
<i>All adults - 4th</i>	1760	1590	1687	1555	1807	1093	1041	1018
<i>All adults - 3rd</i>	1767	1369	1569	1410	1678	1091	1174	1033
<i>All adults - 2nd</i>	1576	1281	1388	1418	1327	902	995	930
<i>All adults - 1st (most deprived)</i>	1424	1115	1393	1643	1416	726	784	777

a Current cigarette smoker excludes those who reported only smoking cigars or pipes

b Bases for mean number of cigarettes per current smoker are similar to those shown in table 9.3

**Table 9.3 Quit attempts by smokers, and whether would like to quit smoking (age-standardised), 2003 to 2014, by area deprivation and sex**

<i>Smokers aged 18 and over<sup>a</sup></i>		<i>2003 to 2014</i>						
<b>Number of quit attempts and whether would like to quit</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
No quit attempts								
5th (least deprived)	22	27	16	28	36	11	[31]	[18]
4th	25	19	23	26	19	26	22	27
3rd	20	17	23	26	21	18	15	23
2nd	25	25	25	18	23	28	23	24
1st (most deprived)	26	25	22	23	20	18	26	24
One or two quit attempts								
5th (least deprived)	42	30	49	41	23	31	[19]	[36]
4th	36	44	40	36	41	33	41	35
3rd	40	39	41	34	43	37	37	41
2nd	38	37	40	47	43	40	46	34
1st (most deprived)	39	44	48	42	44	35	43	39
Three or more quit attempts								
5th (least deprived)	36	44	35	30	40	59	[51]	[46]
4th	38	37	37	39	40	40	37	38
3rd	41	44	36	41	36	45	47	35
2nd	38	38	35	35	35	32	31	42
1st (most deprived)	35	31	29	35	36	47	32	37
Would like to quit								
5th (least deprived)	72	70	72	59	73	80	[75]	[60]
4th	68	78	71	69	83	71	62	66
3rd	69	75	71	64	68	73	80	61
2nd	71	70	71	70	74	74	72	61
1st (most deprived)	65	65	71	66	67	74	60	63
<b>Women</b>								
No quit attempts								
5th (least deprived)	25	22	25	22	19	24	[24]	[22]
4th	20	18	15	21	25	28	16	26
3rd	18	19	19	18	16	22	31	21
2nd	22	21	15	17	17	22	20	15
1st (most deprived)	24	20	19	19	19	15	23	13
One or two quit attempts								
5th (least deprived)	34	28	32	31	38	43	[34]	[33]
4th	40	38	39	32	36	35	52	43
3rd	42	39	37	39	43	28	23	25
2nd	41	43	44	43	42	46	48	38
1st (most deprived)	37	42	44	39	43	44	41	38

*Continued...*

**Table 9.3 - Continued***Smokers aged 18 and over<sup>a</sup>**2003 to 2014*

<b>Cigarette smoking status</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
Three or more quit attempts								
5th (least deprived)	41	50	43	47	42	33	[42]	[45]
4th	39	44	46	46	40	37	32	31
3rd	39	42	43	43	42	49	46	54
2nd	37	36	41	40	41	31	32	47
1st (most deprived)	39	38	37	42	38	41	36	49
Would like to quit								
5th (least deprived)	70	67	67	70	75	74	[62]	[73]
4th	68	63	66	66	74	62	64	66
3rd	71	67	74	72	72	73	73	73
2nd	69	65	69	73	70	74	70	79
1st (most deprived)	72	65	69	73	72	75	79	69
<b>All adults</b>								
No quit attempts								
5th (least deprived)	23	24	20	26	28	17	28	19
4th	23	19	19	24	21	27	19	27
3rd	19	18	21	22	18	20	22	22
2nd	23	23	20	17	20	25	21	19
1st (most deprived)	25	22	21	21	19	17	24	19
One or two quit attempts								
5th (least deprived)	38	29	41	37	31	37	25	35
4th	38	41	39	34	39	34	46	39
3rd	41	39	39	36	43	33	31	33
2nd	39	40	42	45	42	43	47	36
1st (most deprived)	38	43	46	40	43	40	42	38
Three or more quit attempts								
5th (least deprived)	39	47	39	37	41	46	47	46
4th	39	40	41	42	40	39	35	34
3rd	40	43	40	42	39	47	47	45
2nd	37	37	38	38	38	32	31	44
1st (most deprived)	37	35	34	39	37	43	34	43
Would like to quit								
5th (least deprived)	71	69	70	64	74	77	70	66
4th	68	71	69	67	79	67	63	66
3rd	70	71	72	68	70	73	77	67
2nd	70	68	70	71	72	74	71	70
1st (most deprived)	69	65	70	69	69	74	69	66

*Continued...*

**Table 9.3 - Continued***Smokers aged 18 and over<sup>a</sup>*

2003 to 2014

<b>Cigarette smoking status</b>	2003	2008	2009	2010	2011	2012	2013	2014
<i>Bases (weighted):</i>								
<i>Men - 5th (least deprived)</i>	142	87	106	104	67	60	60	69
<i>Men - 4th</i>	177	133	133	139	138	93	81	67
<i>Men - 3rd</i>	191	161	183	156	177	115	125	77
<i>Men - 2nd</i>	237	201	230	214	175	145	112	121
<i>Men - 1st (most deprived)</i>	310	218	230	271	289	151	159	158
<i>Women - 5th (least deprived)</i>	135	84	92	77	70	55	45	51
<i>Women - 4th</i>	167	114	128	118	125	80	76	77
<i>Women - 3rd</i>	203	160	194	164	190	110	104	79
<i>Women - 2nd</i>	280	190	234	227	187	138	113	140
<i>Women - 1st (most deprived)</i>	364	254	299	305	286	189	158	150
<i>All adults - 5th (least deprived)</i>	278	171	198	181	137	115	104	120
<i>All adults - 4th</i>	344	247	261	258	263	173	157	144
<i>All adults - 3rd</i>	394	321	377	320	367	225	230	156
<i>All adults - 2nd</i>	517	391	465	441	362	283	225	261
<i>All adults - 1st (most deprived)</i>	674	472	528	577	574	340	317	308
<i>Bases (unweighted):</i>								
<i>Men - 5th (least deprived)</i>	116	60	71	68	53	52	43	49
<i>Men - 4th</i>	173	122	131	127	128	93	81	60
<i>Men - 3rd</i>	198	153	173	144	172	111	136	93
<i>Men - 2nd</i>	220	167	193	196	154	120	114	110
<i>Men - 1st (most deprived)</i>	265	182	224	267	257	123	138	133
<i>Women - 5th (least deprived)</i>	126	75	87	71	74	50	47	49
<i>Women - 4th</i>	183	148	146	133	149	94	88	78
<i>Women - 3rd</i>	237	179	216	174	211	128	131	94
<i>Women - 2nd</i>	290	196	237	230	196	131	133	146
<i>Women - 1st (most deprived)</i>	362	244	324	387	309	178	148	147
<i>All adults - 5th (least deprived)</i>	242	135	158	139	127	102	90	98
<i>All adults - 4th</i>	356	270	277	260	277	187	169	138
<i>All adults - 3rd</i>	435	332	389	318	383	239	267	187
<i>All adults - 2nd</i>	510	363	430	426	350	251	247	256
<i>All adults - 1st (most deprived)</i>	627	426	548	654	566	301	286	280

<sup>a</sup> These questions were not asked in the self-completion for adults aged 16-17

**Table 9.4 Adult fruit and vegetable consumption (age-standardised), 2003 to 2014, by area deprivation and sex**

<i>Aged 16 and over</i>		<i>2003 to 2014</i>						
<b>Portions per day</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
5 portions or more								
5th (least deprived)	27	25	26	23	27	25	29	23
4th	23	27	25	22	24	23	19	24
3rd	20	24	21	23	18	17	20	20
2nd	16	14	19	20	19	16	21	17
1st (most deprived)	11	9	16	15	13	14	17	16
Mean								
5th (least deprived)	3.5	3.6	3.5	3.6	3.6	3.4	3.7	3.3
4th	3.2	3.6	3.4	3.2	3.4	3.3	3.2	3.4
3rd	3.0	3.4	3.2	3.2	3.1	3.0	3.2	3.0
2nd	2.8	2.6	2.8	2.9	3.0	2.8	2.9	2.8
1st (most deprived)	2.4	2.2	2.7	2.5	2.5	2.6	2.7	2.6
SE of the mean								
5th (least deprived)	0.10	0.12	0.13	0.15	0.15	0.16	0.15	0.20
4th	0.10	0.19	0.11	0.11	0.12	0.17	0.11	0.15
3rd	0.10	0.14	0.11	0.12	0.10	0.13	0.14	0.16
2nd	0.11	0.10	0.12	0.12	0.11	0.15	0.14	0.16
1st (most deprived)	0.13	0.10	0.13	0.09	0.10	0.20	0.13	0.13
<b>Women</b>								
5 portions or more								
5th (least deprived)	30	32	31	31	30	25	29	28
4th	26	29	31	27	24	25	27	25
3rd	25	23	24	23	24	23	22	20
2nd	17	19	20	20	20	16	19	13
1st (most deprived)	13	15	17	14	15	15	15	15
Mean								
5th (least deprived)	3.8	4.0	4.0	4.0	3.8	3.6	3.9	3.9
4th	3.6	3.8	3.8	3.5	3.6	3.5	3.6	3.6
3rd	3.4	3.5	3.4	3.4	3.4	3.2	3.4	3.2
2nd	2.8	3.0	3.1	3.0	3.1	2.9	2.9	2.9
1st (most deprived)	2.4	2.7	2.8	2.7	2.7	2.5	2.6	2.6
SE of the mean								
5th (least deprived)	0.10	0.13	0.11	0.13	0.13	0.10	0.12	0.17
4th	0.10	0.10	0.11	0.11	0.10	0.13	0.12	0.14
3rd	0.10	0.11	0.11	0.10	0.10	0.11	0.12	0.16
2nd	0.09	0.11	0.10	0.10	0.10	0.12	0.12	0.13
1st (most deprived)	0.08	0.11	0.08	0.08	0.10	0.13	0.11	0.14

*Continued...*

**Table 9.4 - Continued**

*Aged 16 and over*

*2003 to 2014*

<b>Portions per day</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>All adults</b>								
5 portions or more								
5th (least deprived)	28	29	29	27	29	25	29	25
4th	24	28	28	25	24	24	23	25
3rd	22	23	23	23	22	20	21	20
2nd	17	17	19	20	19	16	20	15
1st (most deprived)	13	12	16	15	14	15	16	15
Mean								
5th (least deprived)	3.6	3.8	3.8	3.8	3.7	3.5	3.8	3.6
4th	3.4	3.7	3.6	3.4	3.5	3.4	3.4	3.5
3rd	3.2	3.4	3.3	3.3	3.3	3.1	3.3	3.1
2nd	2.8	2.8	3.0	2.9	3.1	2.8	2.9	2.8
1st (most deprived)	2.4	2.5	2.7	2.6	2.6	2.6	2.6	2.6
SE of the mean								
5th (least deprived)	0.08	0.10	0.10	0.12	0.11	0.10	0.11	0.17
4th	0.08	0.12	0.09	0.09	0.09	0.12	0.10	0.12
3rd	0.08	0.10	0.09	0.09	0.08	0.10	0.11	0.12
2nd	0.08	0.08	0.09	0.09	0.08	0.10	0.10	0.11
1st (most deprived)	0.08	0.09	0.08	0.07	0.07	0.13	0.09	0.11
<i>Bases (weighted):</i>								
<i>Men - 5th (least deprived)</i>	813	553	782	662	680	482	534	495
<i>Men - 4th</i>	818	727	788	712	808	487	461	476
<i>Men - 3rd</i>	756	583	678	677	753	476	492	424
<i>Men - 2nd</i>	746	644	730	701	666	476	472	430
<i>Men - 1st (most deprived)</i>	700	577	617	711	698	388	385	409
<i>Women - 5th (least deprived)</i>	886	625	842	694	726	528	500	489
<i>Women - 4th</i>	866	725	787	761	828	485	524	534
<i>Women - 3rd</i>	836	648	737	727	882	516	533	464
<i>Women - 2nd</i>	850	694	780	794	732	496	504	494
<i>Women - 1st (most deprived)</i>	843	679	781	798	762	477	485	439
<i>All adults - 5th (least deprived)</i>	1699	1178	1624	1356	1407	1010	1034	984
<i>All adults - 4th</i>	1685	1452	1575	1473	1637	972	985	1011
<i>All adults - 3rd</i>	1592	1231	1415	1404	1636	992	1025	888
<i>All adults - 2nd</i>	1596	1338	1510	1495	1398	972	976	924
<i>All adults - 1st (most deprived)</i>	1543	1256	1398	1510	1460	865	870	849

*Continued...*

**Table 9.4 - Continued***Aged 16 and over**2003 to 2014*

<b>Portions per day</b>	<b>2003</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<i>Bases (unweighted):</i>								
<i>Men - 5th (least deprived)</i>	709	470	645	513	559	440	411	405
<i>Men - 4th</i>	793	721	765	686	809	499	444	449
<i>Men - 3rd</i>	798	611	696	616	717	488	510	481
<i>Men - 2nd</i>	691	570	610	608	574	398	445	396
<i>Men - 1st (most deprived)</i>	599	466	567	688	616	301	328	335
<i>Women - 5th (least deprived)</i>	864	603	815	665	726	547	473	480
<i>Women - 4th</i>	972	879	927	875	1006	597	600	572
<i>Women - 3rd</i>	973	764	882	798	966	607	668	557
<i>Women - 2nd</i>	888	714	783	820	757	507	555	537
<i>Women - 1st (most deprived)</i>	829	658	834	967	805	428	458	443
<i>All adults - 5th (least deprived)</i>	1573	1073	1460	1178	1285	987	884	885
<i>All adults - 4th</i>	1765	1600	1692	1561	1815	1096	1044	1021
<i>All adults - 3rd</i>	1771	1375	1578	1414	1683	1095	1178	1038
<i>All adults - 2nd</i>	1579	1284	1393	1428	1331	905	1000	933
<i>All adults - 1st (most deprived)</i>	1428	1124	1401	1655	1421	729	786	778



**Table 9.5 Child fruit and vegetable consumption, 2003 to 2014, by area deprivation**

<i>Aged 5-15</i>		<i>2003 to 2014</i>						
<b>Portions per day</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>All children</b>								
5 portions or more								
5th (least deprived)	11	18	19	13	15	15	19	17
4th	16	16	16	12	14	19	12	14
3rd	16	13	15	11	8	10	13	16
2nd	10	13	12	11	13	9	10	11
1st (most deprived)	9	10	11	12	9	6	8	11
Mean								
5th (least deprived)	2.8	3.0	3.1	2.8	3.1	3.1	3.2	3.2
4th	2.8	2.9	2.9	2.9	2.9	3.3	2.9	2.8
3rd	2.8	2.8	2.9	2.5	2.3	2.5	2.7	2.8
2nd	2.3	2.4	2.4	2.3	2.7	2.2	2.5	2.6
1st (most deprived)	2.2	2.4	2.3	2.3	2.2	2.0	2.0	2.4
SE of the mean								
5th (least deprived)	0.11	0.18	0.14	0.16	0.17	0.14	0.17	0.20
4th	0.11	0.17	0.11	0.15	0.16	0.22	0.17	0.17
3rd	0.12	0.16	0.16	0.13	0.12	0.17	0.18	0.15
2nd	0.11	0.20	0.13	0.20	0.18	0.12	0.16	0.19
1st (most deprived)	0.12	0.15	0.13	0.15	0.12	0.14	0.11	0.26
<i>Bases (weighted):</i>								
<i>All children - 5th (least deprived)</i>	<i>499</i>	<i>271</i>	<i>372</i>	<i>244</i>	<i>267</i>	<i>261</i>	<i>240</i>	<i>215</i>
<i>All children - 4th</i>	<i>499</i>	<i>278</i>	<i>368</i>	<i>268</i>	<i>305</i>	<i>212</i>	<i>250</i>	<i>245</i>
<i>All children - 3rd</i>	<i>382</i>	<i>207</i>	<i>324</i>	<i>236</i>	<i>319</i>	<i>242</i>	<i>245</i>	<i>227</i>
<i>All children - 2nd</i>	<i>485</i>	<i>209</i>	<i>332</i>	<i>204</i>	<i>207</i>	<i>241</i>	<i>243</i>	<i>198</i>
<i>All children - 1st (most deprived)</i>	<i>526</i>	<i>242</i>	<i>381</i>	<i>260</i>	<i>240</i>	<i>246</i>	<i>265</i>	<i>243</i>
<i>Bases (unweighted):</i>								
<i>All children - 5th (least deprived)</i>	<i>469</i>	<i>252</i>	<i>362</i>	<i>204</i>	<i>232</i>	<i>268</i>	<i>216</i>	<i>219</i>
<i>All children - 4th</i>	<i>506</i>	<i>292</i>	<i>376</i>	<i>274</i>	<i>300</i>	<i>227</i>	<i>244</i>	<i>250</i>
<i>All children - 3rd</i>	<i>429</i>	<i>198</i>	<i>334</i>	<i>224</i>	<i>293</i>	<i>231</i>	<i>237</i>	<i>232</i>
<i>All children - 2nd</i>	<i>458</i>	<i>210</i>	<i>325</i>	<i>195</i>	<i>194</i>	<i>231</i>	<i>226</i>	<i>198</i>
<i>All children - 1st (most deprived)</i>	<i>460</i>	<i>234</i>	<i>363</i>	<i>264</i>	<i>249</i>	<i>225</i>	<i>239</i>	<i>231</i>

**Table 9.6 Consumption of foods high in sugar (age-standardised), 2008, 2010, 2012, 2014, by area deprivation and sex**

<i>Aged 16 and over</i>	<i>2008, 2010, 2012, 2014</i>			
<b>Consumption of foods high in sugar</b>	2008	2010	2012	2014
	%	%	%	%
<b>Men</b>				
Sweets or chocolates once a day or more				
5th (least deprived)	31	23	28	22
4th	35	27	26	27
3rd	24	22	28	27
2nd	30	32	30	32
1st (most deprived)	23	24	29	29
Biscuits once a day or more				
5th (least deprived)	35	34	39	36
4th	41	35	34	29
3rd	35	32	33	36
2nd	39	42	34	38
1st (most deprived)	32	32	27	38
Non-diet soft drinks once a day or more				
5th (least deprived)	17	25	23	22
4th	24	28	26	28
3rd	23	23	29	30
2nd	35	31	24	35
1st (most deprived)	30	40	37	38
<b>Women</b>				
Sweets or chocolates once a day or more				
5th (least deprived)	32	21	30	27
4th	30	25	27	23
3rd	25	25	28	32
2nd	28	27	29	23
1st (most deprived)	26	20	30	30
Biscuits once a day or more				
5th (least deprived)	30	27	29	27
4th	33	29	35	26
3rd	31	27	33	30
2nd	38	30	31	26
1st (most deprived)	34	30	29	32
Non-diet soft drinks once a day or more				
5th (least deprived)	19	21	18	15
4th	18	22	18	21
3rd	20	17	18	25
2nd	25	28	23	25
1st (most deprived)	26	26	33	36

*Continued...*

**Table 9.6 - Continued***Aged 16 and over**2008, 2010, 2012, 2014*

<b>Consumption of foods high in sugar</b>	2008	2010	2012	2014
	%	%	%	%
<b>All adults</b>				
Sweets or chocolates once a day or more				
5th (least deprived)	32	22	29	25
4th	32	26	26	25
3rd	24	24	28	29
2nd	29	29	29	28
1st (most deprived)	24	22	30	30
Biscuits once a day or more				
5th (least deprived)	32	31	34	31
4th	37	32	34	27
3rd	33	29	33	32
2nd	38	36	32	32
1st (most deprived)	33	31	28	35
Non-diet soft drinks once a day or more				
5th (least deprived)	18	23	21	19
4th	21	25	22	24
3rd	21	20	23	27
2nd	30	30	23	30
1st (most deprived)	28	33	35	37
<i>Bases (weighted):</i>				
<i>Men - 5th (least deprived)</i>	184	223	264	210
<i>Men - 4th</i>	204	229	255	209
<i>Men - 3rd</i>	238	202	277	205
<i>Men - 2nd</i>	246	248	268	212
<i>Men - 1st (most deprived)</i>	211	240	189	164
<i>Women - 5th (least deprived)</i>	235	246	290	215
<i>Women - 4th</i>	245	250	249	226
<i>Women - 3rd</i>	222	218	310	237
<i>Women - 2nd</i>	256	268	268	236
<i>Women - 1st (most deprived)</i>	225	260	242	167
<i>All adults - 5th (least deprived)</i>	420	469	554	425
<i>All adults - 4th</i>	449	479	504	435
<i>All adults - 3rd</i>	460	420	587	442
<i>All adults - 2nd</i>	503	516	536	447
<i>All adults - 1st (most deprived)</i>	436	500	430	331

*Continued...*

**Table 9.6 - Continued***Aged 16 and over**2008, 2010, 2012, 2014*

<b>Consumption of foods high in sugar</b>	<b>2008</b>	<b>2010</b>	<b>2012</b>	<b>2014</b>
<i>Bases (unweighted):</i>				
<i>Men - 5th (least deprived)</i>	161	171	232	179
<i>Men - 4th</i>	206	217	264	210
<i>Men - 3rd</i>	232	187	265	218
<i>Men - 2nd</i>	212	207	234	184
<i>Men - 1st (most deprived)</i>	174	231	156	134
<i>Women - 5th (least deprived)</i>	229	234	291	212
<i>Women - 4th</i>	289	297	306	263
<i>Women - 3rd</i>	261	246	335	262
<i>Women - 2nd</i>	274	273	290	252
<i>Women - 1st (most deprived)</i>	230	319	237	166
<i>All adults - 5th (least deprived)</i>	390	405	523	391
<i>All adults - 4th</i>	495	514	570	473
<i>All adults - 3rd</i>	493	433	600	480
<i>All adults - 2nd</i>	486	480	524	436
<i>All adults - 1st (most deprived)</i>	404	550	393	300

**Table 9.7 Summary of adult eating habits (age-standardised), 2014, by area deprivation and sex**

*Aged 16 and over*

2014

Food type and frequency	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>Men</b>					
Oily fish once a week or more	29	24	23	23	14
White fish once a week or more	58	43	45	45	52
Tuna fish once a week or more	21	24	22	30	27
Red meat <sup>a</sup> 2+ times a week	59	68	62	63	53
Meat products <sup>b</sup> 2+ times a week	22	33	29	52	45
Drinks skimmed / semi-skimmed milk	77	73	75	70	60
Sweets or chocolates once a day or more	22	27	27	32	29
Biscuits once a day or more	36	29	36	38	38
Cakes 2+ times a week	39	39	31	33	37
Ice-cream once a week or more	41	37	33	24	26
Non-diet soft drinks once a day or more	22	28	30	35	38
Crisps once a day or more	23	26	13	24	26
Chips 2+ times a week	29	28	34	51	42
Potatoes, pasta, rice 5+ times a week	52	48	53	45	58
At least 2-3 slices of high fibre bread a day	52	44	44	35	37
High fibre / low sugar cereal at least 5-6 times a week	36	30	34	20	22
<b>Women</b>					
Oily fish once a week or more	37	30	30	18	21
White fish once a week or more	59	47	42	43	47
Tuna fish once a week or more	30	31	27	31	34
Red meat <sup>a</sup> 2+ times a week	50	56	51	57	43
Meat products <sup>b</sup> 2+ times a week	12	17	17	23	30
Drinks skimmed / semi-skimmed milk	85	77	75	78	71
Sweets or chocolates once a day or more	27	23	32	23	30
Biscuits once a day or more	27	26	30	26	32
Cakes 2+ times a week	34	34	34	28	30
Ice-cream once a week or more	26	30	26	23	24
Non-diet soft drinks once a day or more	15	21	25	25	36
Crisps once a day or more	14	13	15	25	27
Chips 2+ times a week	15	20	25	27	37
Potatoes, pasta, rice 5+ times a week	56	44	60	49	53
At least 2-3 slices of high fibre bread a day	42	38	36	35	30
High fibre / low sugar cereal at least 5-6 times a week	39	31	31	27	26

*Continued...*

**Table 9.7 - Continued**

*Aged 16 and over*

2014

Food type and frequency	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>All adults</b>					
Oily fish once a week or more	33	27	27	20	18
White fish once a week or more	58	45	43	44	49
Tuna fish once a week or more	25	28	25	31	31
Red meat <sup>a</sup> 2+ times a week	54	61	56	60	48
Meat products <sup>b</sup> 2+ times a week	17	25	23	36	37
Drinks skimmed / semi-skimmed milk	81	75	75	74	66
Sweets or chocolates once a day or more	25	25	29	28	30
Biscuits once a day or more	31	27	32	32	35
Cakes 2+ times a week	36	36	33	30	33
Ice-cream once a week or more	34	33	29	23	25
Non-diet soft drinks once a day or more	19	24	27	30	37
Crisps once a day or more	19	19	14	24	26
Chips 2+ times a week	22	24	29	38	40
Potatoes, pasta, rice 5+ times a week	54	46	56	47	55
At least 2-3 slices of high fibre bread a day	47	41	40	35	34
High fibre / low sugar cereal at least 5-6 times a week	38	30	32	24	24
<i>Bases (weighted):</i>					
<i>Men</i>	210	209	205	212	164
<i>Women</i>	215	226	237	236	167
<i>All adults</i>	425	435	442	447	331
<i>Bases (unweighted):</i>					
<i>Men</i>	179	210	218	184	134
<i>Women</i>	212	263	262	252	166
<i>All adults</i>	391	473	480	436	300

a for example beef, lamb or pork

b for example sausages, meat pies, bridies, corned beef, or burgers

**Table 9.8 Summary of child eating habits, 2012/2013/2014 combined, by area deprivation and sex**

*Aged 16 and over* *2012/2013/2014 combined*

Food type and frequency	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>Boys</b>					
Oily fish once a week or more	25	18	15	11	13
White fish once a week or more	59	59	55	51	53
Tuna fish once a week or more	24	26	19	25	29
Red meat <sup>a</sup> 2+ times a week	62	65	54	57	55
Meat products <sup>b</sup> 2+ times a week	34	41	48	51	52
Drinks skimmed / semi-skimmed milk	62	62	61	54	48
Sweets or chocolates once a day or more	45	49	56	56	56
Biscuits once a day or more	42	37	39	37	34
Cakes 2+ times a week	44	33	36	28	26
Ice-cream once a week or more	48	50	50	53	53
Non-diet soft drinks once a day or more	32	35	42	45	45
Crisps once a day or more	29	34	37	40	46
Chips 2+ times a week	30	37	44	52	51
Potatoes, pasta, rice 5+ times a week	59	53	45	45	43
At least 2-3 slices of high fibre bread a day	45	37	34	34	25
High fibre / low sugar cereal at least 5-6 times a week	39	33	30	23	23
<b>Girls</b>					
Oily fish once a week or more	21	19	16	12	8
White fish once a week or more	54	54	52	45	45
Tuna fish once a week or more	27	31	30	32	33
Red meat <sup>a</sup> 2+ times a week	55	59	55	58	57
Meat products <sup>b</sup> 2+ times a week	24	26	27	38	48
Drinks skimmed / semi-skimmed milk	67	64	60	54	48
Sweets or chocolates once a day or more	39	46	48	52	59
Biscuits once a day or more	27	33	33	36	27
Cakes 2+ times a week	33	40	35	23	32
Ice-cream once a week or more	51	52	51	48	56
Non-diet soft drinks once a day or more	28	34	36	44	46
Crisps once a day or more	24	32	32	42	49
Chips 2+ times a week	26	32	38	46	47
Potatoes, pasta, rice 5+ times a week	66	56	56	52	48
At least 2-3 slices of high fibre bread a day	33	30	34	28	23
High fibre / low sugar cereal at least 5-6 times a week	30	28	24	23	23

*Continued...*

**Table 9.8 - Continued**

*Aged 16 and over*

*2012/2013/2014 combined*

Food type and frequency	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>All children</b>					
Oily fish once a week or more	23	18	15	11	11
White fish once a week or more	57	57	53	48	49
Tuna fish once a week or more	25	28	25	29	31
Red meat <sup>a</sup> 2+ times a week	58	62	54	58	56
Meat products <sup>b</sup> 2+ times a week	29	34	37	44	50
Drinks skimmed / semi-skimmed milk	65	63	60	54	48
Sweets or chocolates once a day or more	42	48	52	54	58
Biscuits once a day or more	34	35	36	36	31
Cakes 2+ times a week	39	36	35	26	28
Ice-cream once a week or more	49	51	50	50	54
Non-diet soft drinks once a day or more	30	34	39	44	45
Crisps once a day or more	27	33	35	41	47
Chips 2+ times a week	28	35	41	49	49
Potatoes, pasta, rice 5+ times a week	62	54	50	49	45
At least 2-3 slices of high fibre bread a day	39	34	34	31	24
High fibre / low sugar cereal at least 5-6 times a week	35	31	27	23	23
<i>Bases (weighted):</i>					
<i>Boys</i>	450	486	460	447	532
<i>Girls</i>	442	440	464	459	466
<i>All children</i>	892	926	924	906	997
<i>Bases (unweighted):</i>					
<i>Boys</i>	437	491	454	433	497
<i>Girls</i>	451	466	467	443	449
<i>All children</i>	888	957	921	876	946

a for example beef, lamb or pork

b for example sausages, meat pies, bridies, corned beef, or burgers



**Table 9.9 Proportion of children meeting physical activity guidelines (including and excluding school) and participation in sport, 1998 to 2014, by area deprivation**

<i>Aged 2 - 15</i>		<i>1998 to 2014</i>							
<b>Physical activity</b>	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%
<b>All children</b>									
Meets guidelines <u>excluding</u> activity at school <sup>a</sup>									
5th (least deprived)	61	67	67	68	66	66	61	66	69
4th	66	67	64	58	63	67	68	65	68
3rd	66	69	62	61	60	67	57	67	73
2nd	67	70	63	68	70	66	63	67	66
1st (most deprived)	67	72	65	67	66	61	60	72	74
Meets guidelines <u>including</u> activity at school <sup>a</sup>									
5th (least deprived)	n/a	n/a	76	78	73	76	69	74	77
4th	n/a	n/a	68	66	74	75	76	76	74
3rd	n/a	n/a	68	66	68	74	65	76	80
2nd	n/a	n/a	68	74	76	71	74	74	71
1st (most deprived)	n/a	n/a	73	73	72	67	70	77	79
Participates in sport									
5th (least deprived)	72	78	81	80	77	77	77	75	79
4th	70	71	68	73	70	74	70	73	70
3rd	70	69	71	72	73	71	58	68	66
2nd	67	74	66	68	68	66	63	62	63
1st (most deprived)	64	67	66	74	62	58	62	59	58
<i>Bases (weighted):</i>									
<i>All children - 5th (least deprived)</i>	462	613	316	462	305	336	341	289	251
<i>All children - 4th</i>	396	636	344	463	335	386	266	326	321
<i>All children - 3rd</i>	359	447	256	413	282	388	311	307	296
<i>All children - 2nd</i>	406	593	272	425	264	268	300	325	266
<i>All children - 1st (most deprived)</i>	496	614	308	475	341	318	320	355	311
<i>Bases (weighted):</i>									
<i>All children - 5th (least deprived)</i>	796	585	294	453	264	305	347	272	257
<i>All children - 4th</i>	758	659	363	479	351	390	287	338	324
<i>All children - 3rd</i>	740	510	250	423	273	373	306	308	299
<i>All children - 2nd</i>	745	569	277	416	259	255	290	310	266
<i>All children - 1st (most deprived)</i>	814	549	301	456	358	344	297	340	298

a Physically active for at least 60 minutes on all 7 days per week

**Table 9.10 Adult summary activity levels (age-standardised), 2014, by area deprivation and sex**

*Aged 16 and over*

2014

Summary activity levels <sup>a</sup>	Scottish Index of Multiple Deprivation				
	5th (Least deprived)	4th	3rd	2nd	1st (Most deprived)
	%	%	%	%	%
<b>Men</b>					
Meets MVPA guidelines	74	72	68	65	59
Some activity	11	11	8	8	11
Low activity	4	4	5	4	2
Very low activity	11	14	20	24	28
<b>Women</b>					
Meets MVPA guidelines	67	62	57	58	50
Some activity	11	14	13	12	10
Low activity	4	5	6	4	5
Very low activity	18	19	24	26	36
<b>All adults</b>					
Meets MVPA guidelines	70	67	62	61	54
Some activity	11	12	11	10	10
Low activity	4	4	5	4	4
Very low activity	15	17	22	25	32
<i>Bases (weighted):</i>					
<i>Men</i>	492	472	423	428	411
<i>Women</i>	488	532	463	492	436
<i>All adults</i>	979	1004	886	920	846
<i>Bases (unweighted):</i>					
<i>Men</i>	403	444	477	394	336
<i>Women</i>	480	570	555	535	441
<i>All adults</i>	883	1014	1032	929	777

a Meets moderate / vigorous physical activity (MVPA) guidelines: at least 150 minutes of moderately intensive physical activity or 75 minutes vigorous activity per week or an equivalent combination of both. Some activity: 60-149 minutes of moderate activity or 30-74 minutes of vigorous activity or an equivalent combination of these. Low activity: 30-59 minutes of moderate activity or 15-29 minutes of vigorous activity or an equivalent combination of these. Very low activity: Less than 30 minutes of moderate activity or less than 15 minutes of vigorous activity or an equivalent combination of these

b Physical activity guidelines for those aged 16-18 are at least one hour of moderate or vigorous activity each day. As SHeS participants of that age were given the adult questionnaire, which does not ask separately about each day, they have been included in this table assessed against the adult criteria

**Table 9.11 Mean adult BMI, prevalence of overweight and obesity (age-standardised), 2003 to 2014, by area deprivation and sex**

<i>Aged 16 and over with valid height and weight measurements</i>								<i>2003 to 2014</i>
<b>BMI (kg/m<sup>2</sup>)</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Men</b>								
25 and over <sup>a</sup>								
5th (least deprived)	67	70	66	66	69	65	67	67
4th	66	69	72	69	73	68	68	69
3rd	67	68	72	70	71	69	73	71
2nd	66	69	66	70	70	71	70	72
1st (most deprived)	62	67	65	65	65	70	63	66
30 and over <sup>b</sup>								
5th (least deprived)	20	24	22	22	26	19	20	22
4th	21	25	26	29	27	26	26	24
3rd	24	24	28	28	28	32	25	27
2nd	22	28	28	27	29	30	26	29
1st (most deprived)	26	28	32	33	30	28	29	28
40 and over <sup>c</sup>								
5th (least deprived)	1	1	0	1	1	0	1	0
4th	2	1	2	1	1	2	1	2
3rd	1	2	1	2	2	3	1	2
2nd	1	2	1	2	2	3	1	2
1st (most deprived)	3	2	1	2	3	1	1	5
Mean								
5th (least deprived)	26.8	27.2	27.0	27.0	27.4	26.7	26.8	26.9
4th	27.2	27.4	27.7	27.4	27.6	27.2	27.4	27.7
3rd	27.0	27.3	27.7	27.8	27.8	27.8	27.6	27.4
2nd	27.1	27.6	27.6	27.7	27.8	27.7	27.4	27.7
1st (most deprived)	27.2	27.4	27.8	27.8	27.7	27.3	27.4	27.8
SE of the mean								
5th (least deprived)	0.23	0.32	0.22	0.26	0.27	0.23	0.27	0.32
4th	0.21	0.22	0.24	0.25	0.22	0.29	0.29	0.28
3rd	0.20	0.28	0.25	0.35	0.25	0.33	0.28	0.44
2nd	0.23	0.28	0.24	0.28	0.28	0.39	0.29	0.33
1st (most deprived)	0.29	0.24	0.30	0.31	0.27	0.35	0.36	0.55

*Continued...*

**Table 9.11 - Continued***Aged 16 and over with valid height and weight measurements**2003 to 2014*

<b>BMI (kg/m<sup>2</sup>)</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>Women</b>								
25 and over <sup>a</sup>								
5th (least deprived)	55	54	53	53	55	55	56	53
4th	60	61	59	60	55	58	55	59
3rd	61	64	66	64	58	61	63	66
2nd	62	66	62	66	66	65	64	65
1st (most deprived)	63	63	68	69	65	66	68	64
30 and over <sup>b</sup>								
5th (least deprived)	21	20	19	18	19	23	20	21
4th	23	26	28	28	23	26	28	26
3rd	28	27	28	32	27	27	30	31
2nd	28	33	31	32	33	33	34	34
1st (most deprived)	33	32	33	34	39	29	36	37
40 and over <sup>c</sup>								
5th (least deprived)	2	1	2	1	3	3	2	2
4th	3	3	2	2	3	3	3	1
3rd	3	3	3	4	4	4	4	4
2nd	4	5	5	4	5	3	4	5
1st (most deprived)	7	4	6	4	7	4	6	7
Mean								
5th (least deprived)	26.4	26.2	26.2	26.1	26.4	26.8	26.4	26.6
4th	26.9	27.4	27.1	27.2	26.9	27.0	27.0	27.0
3rd	27.2	27.5	27.6	28.0	27.5	27.3	27.6	27.8
2nd	27.5	28.2	27.9	28.0	28.2	27.9	28.0	28.3
1st (most deprived)	28.2	27.8	28.3	28.3	28.7	27.8	28.6	28.6
SE of the mean								
5th (least deprived)	0.27	0.26	0.23	0.23	0.24	0.31	0.32	0.30
4th	0.20	0.26	0.23	0.24	0.24	0.30	0.29	0.28
3rd	0.24	0.28	0.24	0.28	0.25	0.29	0.30	0.34
2nd	0.23	0.31	0.28	0.26	0.31	0.25	0.39	0.31
1st (most deprived)	0.26	0.30	0.27	0.24	0.27	0.33	0.36	0.42

*Continued...*

**Table 9.11 - Continued***Aged 16 and over with valid height and weight measurements**2003 to 2014*

<b>BMI (kg/m<sup>2</sup>)</b>	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%
<b>All adults</b>								
25 and over <sup>a</sup>								
5th (least deprived)	61	62	60	60	62	60	62	60
4th	63	65	66	64	64	63	61	64
3rd	64	66	69	67	64	65	68	68
2nd	64	67	64	68	68	68	67	69
1st (most deprived)	63	65	66	67	65	68	66	65
30 and over <sup>b</sup>								
5th (least deprived)	20	22	21	20	22	21	20	22
4th	22	26	27	28	25	26	27	25
3rd	26	26	28	30	28	29	27	29
2nd	25	30	30	29	31	31	30	31
1st (most deprived)	30	30	32	34	35	28	32	32
40 and over <sup>c</sup>								
5th (least deprived)	2	1	1	1	2	2	1	1
4th	2	2	2	1	2	2	2	2
3rd	2	2	2	3	3	3	2	3
2nd	2	3	3	3	4	3	3	3
1st (most deprived)	5	3	4	3	5	3	4	6
Mean								
5th (least deprived)	26.6	26.7	26.6	26.6	26.9	26.7	26.6	26.8
4th	27.0	27.4	27.4	27.3	27.2	27.1	27.2	27.3
3rd	27.1	27.4	27.6	27.9	27.6	27.5	27.6	27.6
2nd	27.3	27.9	27.8	27.8	28.0	27.8	27.7	28.0
1st (most deprived)	27.7	27.7	28.1	28.1	28.2	27.6	28.0	28.2
SE of the mean								
5th (least deprived)	0.18	0.22	0.16	0.19	0.20	0.19	0.24	0.24
4th	0.16	0.18	0.18	0.20	0.18	0.24	0.23	0.18
3rd	0.17	0.21	0.18	0.24	0.20	0.24	0.23	0.28
2nd	0.18	0.21	0.19	0.22	0.22	0.25	0.25	0.24
1st (most deprived)	0.21	0.20	0.21	0.20	0.22	0.27	0.28	0.39

*Continued...*

**Table 9.11 - Continued**

*Aged 16 and over with valid height and weight measurements*

*2003 to 2014*

<b>BMI (kg/m<sup>2</sup>)</b>	2003	2008	2009	2010	2011	2012	2013	2014
<i>Bases (weighted):</i>								
<i>Men - 5th (least deprived)</i>	695	486	710	574	566	420	477	416
<i>Men - 4th</i>	679	656	698	622	715	438	398	415
<i>Men - 3rd</i>	650	494	595	606	599	421	417	366
<i>Men - 2nd</i>	621	573	616	596	554	425	380	379
<i>Men - 1st (most deprived)</i>	560	478	509	587	559	341	328	340
<i>Women - 5th (least deprived)</i>	727	542	678	558	588	437	427	426
<i>Women - 4th</i>	695	618	676	637	690	408	452	453
<i>Women - 3rd</i>	700	526	606	581	688	413	426	372
<i>Women - 2nd</i>	678	596	631	633	554	409	403	407
<i>Women - 1st (most deprived)</i>	662	539	613	635	579	398	383	367
<i>All adults - 5th (least deprived)</i>	1422	1028	1389	1132	1154	857	905	841
<i>All adults - 4th</i>	1375	1274	1374	1258	1406	846	850	868
<i>All adults - 3rd</i>	1349	1020	1201	1187	1287	835	843	738
<i>All adults - 2nd</i>	1299	1169	1247	1229	1108	834	783	786
<i>All adults - 1st (most deprived)</i>	1222	1017	1123	1222	1138	739	711	707
<i>Bases (unweighted):</i>								
<i>Men - 5th (least deprived)</i>	607	405	578	446	465	393	367	349
<i>Men - 4th</i>	662	641	664	602	714	442	381	396
<i>Men - 3rd</i>	684	523	585	544	594	426	432	409
<i>Men - 2nd</i>	577	498	521	518	481	352	366	340
<i>Men - 1st (most deprived)</i>	486	385	469	563	491	263	281	277
<i>Women - 5th (least deprived)</i>	719	523	664	537	586	457	410	421
<i>Women - 4th</i>	787	741	777	728	832	490	518	490
<i>Women - 3rd</i>	816	633	702	645	774	494	536	467
<i>Women - 2nd</i>	710	601	639	650	583	420	447	448
<i>Women - 1st (most deprived)</i>	652	518	667	765	614	360	369	372
<i>All adults - 5th (least deprived)</i>	1326	928	1242	983	1051	850	777	770
<i>All adults - 4th</i>	1449	1382	1441	1330	1546	932	899	886
<i>All adults - 3rd</i>	1500	1156	1287	1189	1368	920	968	876
<i>All adults - 2nd</i>	1287	1099	1160	1168	1064	772	813	788
<i>All adults - 1st (most deprived)</i>	1138	903	1136	1328	1105	623	650	649

a 25 and over = overweight / obese / morbidly obese

b 30 and over = obese / morbidly obese

c 40 and over = morbidly obese

**Table 9.12 Proportion of children with BMI within the healthy range and prevalence of overweight and obesity in children, 1998 to 2014, by area deprivation**

	<i>Aged 2-15 with valid height and weight measurements<sup>a</sup></i>								
	<i>1998 to 2014</i>								
<b>BMI status (National BMI percentiles)</b>	1998	2003	2008	2009	2010	2011	2012	2013	2014
	%	%	%	%	%	%	%	%	%
<b>All children</b>									
Within healthy range <sup>b</sup>									
5th (least deprived)	72	69	71	74	69	70	72	77	73
4th	71	71	60	70	74	67	71	74	66
3rd	65	60	68	72	65	65	70	71	71
2nd	73	64	65	71	62	63	59	61	66
1st (most deprived)	68	67	68	62	65	60	64	65	63
At risk of overweight (not obese) <sup>c</sup>									
5th (least deprived)	15	17	15	13	19	17	13	12	13
4th	16	16	17	14	12	16	13	10	14
3rd	18	17	15	12	17	16	11	16	13
2nd	12	18	19	16	15	14	19	11	16
1st (most deprived)	14	14	15	13	13	14	12	16	15
At risk of overweight (including obesity) <sup>d</sup>									
5th (least deprived)	27	30	29	25	30	29	25	22	26
4th	28	29	39	29	25	31	27	26	31
3rd	35	38	30	27	33	34	28	27	28
2nd	26	35	34	29	38	35	39	34	33
1st (most deprived)	31	32	31	37	33	37	34	34	37
At risk of obesity <sup>e</sup>									
5th (least deprived)	12	13	14	12	11	12	12	10	13
4th	12	13	21	15	13	15	14	16	18
3rd	17	20	16	15	16	17	17	11	14
2nd	14	17	16	13	22	21	20	24	17
1st (most deprived)	17	17	15	24	19	23	22	18	22

*Continued...*

**Table 9.12 - Continued**

*Aged 2-15 with valid height and weight measurements<sup>a</sup>*

1998 to 2014

<b>BMI status (National BMI percentiles)</b>	1998	2003	2008	2009	2010	2011	2012	2013	2014
<i>Bases (weighted):</i>									
<i>All children - 5th (least deprived)</i>	424	546	280	393	259	265	276	259	212
<i>All children - 4th</i>	366	520	308	397	283	300	229	274	272
<i>All children - 3rd</i>	331	399	219	354	234	308	278	262	252
<i>All children - 2nd</i>	369	483	226	348	213	183	252	278	220
<i>All children - 1st (most deprived)</i>	425	479	255	388	265	221	249	274	254
<i>Bases (weighted):</i>									
<i>All children - 5th (least deprived)</i>	727	519	258	387	219	237	283	244	218
<i>All children - 4th</i>	701	540	326	415	300	310	242	283	274
<i>All children - 3rd</i>	681	458	219	361	231	297	269	261	254
<i>All children - 2nd</i>	679	464	233	343	204	182	245	260	221
<i>All children - 1st (most deprived)</i>	696	442	254	375	277	243	235	260	243

a Children whose BMI was more than 7 standard deviations above or below the norm for their age were excluded from the table

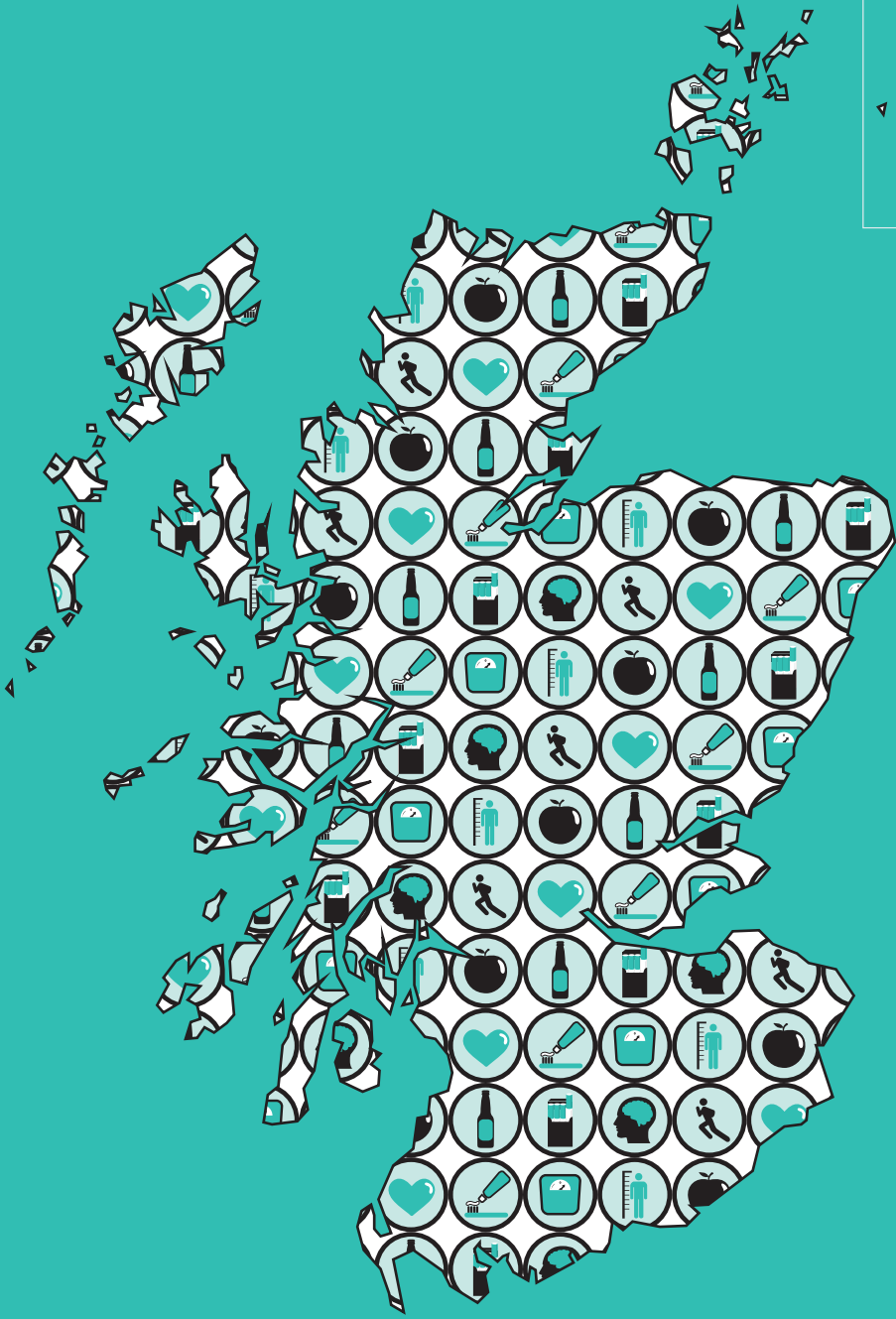
b BMI above 2nd percentile, below 85th percentile

c BMI at or above 85th percentile, below 95th percentile

d BMI at or above 85th percentile

e BMI at or above 95th percentile





# Glossary

## APPENDIX A: GLOSSARY

This glossary explains terms used in the report, other than those fully described in particular chapters.

### **Age Standardisation**

Age standardisation has been used in order to enable groups to be compared after adjusting for the effects of any differences in their age distributions.

When different sub-groups are compared in respect of a variable on which age has an important influence, any differences in age distributions between these sub-groups are likely to affect the observed differences in the proportions of interest.

Age standardisation was carried out, using the direct standardisation method. The standard population to which the age distribution of sub-groups was adjusted was the mid-2013 population estimates for Scotland. All age standardisation has been undertaken separately within each sex.

The age-standardised proportion  $p'$  was calculated as follows, where  $p_i$  is the age specific proportion in age group  $i$  and  $N_i$  is the standard population size in age group  $i$ :

$$p' = \frac{\sum_i N_i p_i}{\sum_i N_i}$$

Therefore  $p'$  can be viewed as a weighted mean of  $p_i$  using the weights  $N_i$ . Age standardisation was carried out using the age groups: 16-24, 25-34, 35-44, 45-54, 55-64, 65-74 and 75 and over. The variance of the standardised proportion can be estimated by:

$$var(p') = \frac{\sum_i (N_i^2 p_i q_i / n_i)}{(\sum_i N_i)^2}$$

where  $q_i = 1 - p_i$ .

### **Anthropometric measurement**

See **Body mass index (BMI)**

### **Arithmetic mean**

See **Mean**

### **Bases**

See **Unweighted bases, Weighted bases**

**Body mass index**

Weight in kg divided by the square of height in metres. Adults (aged 16 and over) can be classified into the following BMI groups:

<i>BMI (kg/m<sup>2</sup>)</i>	<i>Description</i>
Less than 18.5	Underweight
18.5 to less than 25	Normal
25 to less than 30	Overweight
30 to less than 40	Obese
40 and above	Morbidly obese

Although the BMI calculation method is the same, there are no fixed BMI cut-off points defining overweight and obesity in children. Instead, overweight and obesity are defined using several other methods including age and sex specific BMI cut-off points or BMI percentiles cut-offs based on reference populations. Children can be classified into the following groups:

<i>Percentile cut-off</i>	<i>Description</i>
At or below 2nd percentile	At risk of underweight
Above 2nd percentile and below 85th percentile	Healthy weight
At or above 85th percentile and below 95th percentile	At risk of overweight
At or above 95th percentile	At risk of obesity

**Cardiovascular Disease**

Participants were classified as having cardiovascular disease (CVD) if they reported ever having any of the following conditions diagnosed by a doctor: angina, heart attack, stroke, heart murmur, irregular heart rhythm, ‘other heart trouble’. For the purpose of this report, participants were classified as having a particular condition only if they reported that the diagnosis was confirmed by a doctor. No attempt was made to assess these self-reported diagnoses objectively. There is therefore the possibility that some misclassification may have occurred, because some participants may not have remembered (or not remembered correctly) the diagnosis made by their doctor.

**Chronic Obstructive Pulmonary Disease (COPD)**

COPD is defined by the World Health Organisation (WHO) as ‘a pulmonary disease characterised by chronic obstruction lung airflow that interferes with normal breathing and is not fully reversible.’ It is associated with symptoms and clinical signs that in the past have been called ‘chronic bronchitis’ and ‘emphysema,’ including regular cough (at least three consecutive months of the year) and production of phlegm.

**Electronic cigarettes**

Electronic cigarettes or e-cigarettes are battery-powered handheld devices which heat a liquid that delivers a vapour. The vapour is then inhaled by the user, which is known as ‘vaping’. E-cigarettes typically consist of a battery, an atomiser

and a cartridge containing the liquid. Earlier models, often referred to as 'cigalikes', were designed to closely resemble cigarettes but there is now a wide variety of product types on the market. The liquid is usually flavoured and may not contain nicotine, although in most cases e-cigarettes are used with nicotine. Unlike conventional or traditional cigarettes, they do not contain tobacco and do not involve combustion (i.e. they are not lit).

**Equivalised Household income**

Making precise estimates of household income, as is done for example in the Family Resources Survey, requires far more interview time than was available in the Health Survey. Household income was thus established by means of a card (see Volume 2, Appendix A) on which banded incomes were presented. Information was obtained from the household reference person (HRP) or their partner. Initially they were asked to state their own (HRP and partner) aggregate gross income, and were then asked to estimate the total household income including that of any other persons in the household. Household income can be used as an analysis variable, but there has been increasing interest recently in using measures of equivalised income that adjust income to take account of the number of persons in the household. Methods of doing this vary in detail: the starting point is usually an exact estimate of net income, rather than the banded estimate of gross income obtained in the Health Survey. The method used in the present report was as follows. It utilises the widely used McClements scoring system, described below.

1. A score was allocated to each household member, and these were added together to produce an overall household McClements score. Household members were given scores as follows.

First adult (HRP)	0.61
Spouse/partner of HRP	0.39
Other second adult	0.46
Third adult	0.42
Subsequent adults	0.36
Dependant aged 0-1	0.09
Dependant aged 2-4	0.18
Dependant aged 5-7	0.21
Dependant aged 8-10	0.23
Dependant aged 11-12	0.25
Dependant aged 13-15	0.27
Dependant aged 16+	0.36

2. The equivalised income was derived as the annual household income divided by the McClements score.

3. This equivalised annual household income was attributed to all members of the household, including children.
4. Households were ranked by equivalised income, and quintiles q1- q5 were identified. Because income was obtained in banded form, there were clumps of households with the same income spanning the quintiles. It was decided not to split clumps but to define the quintiles as 'households with equivalised income up to q1', 'over q1 up to q2' etc.
5. All individuals in each household were allocated to the equivalised household income quintile to which their household had been allocated. Insofar as the mean number of persons per household may vary between tertiles, the numbers in the quintiles will be unequal. Inequalities in numbers are also introduced by the clumping referred to above, and by the fact that in any sub-group analysed the proportionate distribution across quintiles will differ from that of the total sample.

Reference: McClements, D. (1977). Equivalence scales for children. *Journal of Public Economics*. 8: 191-210.

### **Frankfort plane**

The Frankfort Plane is an imaginary line passing through the external ear canal and across the top of the lower bone of the eye socket, immediately under the eye. Informants' heads are positioned with the Frankfort Plane in a horizontal position when height is measured using a stadiometer as a means of ensuring that, as far as possible, the measurements taken are standardised.

### **GHQ12**

The General Health Questionnaire (GHQ12) is a scale designed to detect possible psychiatric morbidity in the general population. It was administered to informants aged 13 and above. The questionnaire contains 12 questions about the informant's general level of happiness, depression, anxiety and sleep disturbance over the past four weeks. Responses to these items are scored, with one point given each time a particular feeling or type of behaviour was reported to have been experienced 'more than usual' or 'much more than usual' over the past few weeks. These scores are combined to create an overall score of between zero and twelve. A score of four or more (referred to as a 'high' GHQ12 score) has been used in this report to indicate the presence of a possible psychiatric disorder.

Reference: Goldberg D, Williams PA. *User's Guide to the General Health Questionnaire*. NFER-NELSON, 1988.

### **Household**

A household was defined as one person or a group of people who have the accommodation as their only or main residence and who either share at least one meal a day or share the living accommodation.

<b>Household Reference Person</b>	The household reference person (HRP) is defined as the householder (a person in whose name the property is owned or rented) with the highest income. If there is more than one householder and they have equal income, then the household reference person is the oldest.
<b>Income</b>	See <b>Equivalised household income</b>
<b>Ischaemic heart disease</b>	Participants were classified as having ischaemic heart disease (IHD) if they reported ever having angina or a heart attack diagnosed by a doctor.
<b>Logistic regression</b>	<p>Logistic regression was used to investigate the effect of two or more independent or predictor variables on a two-category (binary) outcome variable. The independent variables can be continuous or categorical (grouped) variables. The parameter estimates from a logistic regression model for each independent variable give an estimate of the effect of that variable on the outcome variable, adjusted for all other independent variables in the model.</p> <p>Logistic regression models the log 'odds' of a binary outcome variable. The 'odds' of an outcome is the ratio of the probability of it occurring to the probability of it not occurring. The parameter estimates obtained from a logistic regression model have been presented as odds ratios for ease of interpretation.</p> <p>For <i>continuous</i> independent variables, the odds ratio gives the change in the odds of the outcome occurring for a one unit change in the value of the predictor variable.</p> <p>For <i>categorical</i> independent variables one category of the categorical variable has been selected as a baseline or reference category, with all other categories compared to it. Therefore there is no parameter estimate for the reference category and odds ratios for all other categories are the ratio of the odds of the outcome occurring between each category and the reference category, adjusted for all other variables in the model.</p> <p>The statistical significance of independent variables in models was assessed by the likelihood ratio test and its associated p value. 95% confidence intervals were also calculated for the odds ratios. These can be interpreted as meaning that there is a 95% chance that the given interval for the sample will contain the true population parameter of interest. In logistic regression a 95% confidence interval which does not include 1.0 indicates the given parameter estimate is statistically significant. Reference: Hosmer, D.W. Jr. and Lemeshow. S. (1989). <i>Applied logistic regression</i>. New York: John Wiley &amp; Sons.</p>

<b>Long-term conditions &amp; limiting long-term conditions</b>	Long-term conditions were defined as a physical or mental health condition or illness lasting, or expected to last 12 months or more. The wording of this question changed in 2012 and is now aligned with the harmonised questions for all large Scottish Government surveys. Between 2008 and 2011 participants were asked whether they had a long-standing physical or mental condition or disability that has troubled them for at least 12 months, or is likely to affect them for at least 12 months. Note that prior to 2008 these were described as long-standing illnesses. Long-term conditions were coded into categories defined in the International Classification of Diseases (ICD), but it should be noted that the ICD is used mostly to classify conditions according to the cause, whereas SHeS classifies according to the reported symptoms. A long-term condition was defined as limiting if the respondent reported that it limited their activities in any way.
<b>Mean</b>	Means in this report are <b>Arithmetic means</b> (the sum of the values for cases divided by the number of cases).
<b>Median</b>	The value of a distribution which divides it into two equal parts such that half the cases have values below the median and half the cases have values above the median.
<b>Morbid obesity</b>	See <b>Body mass index</b> .
<b>NHS Health Board</b>	The National Health Service (NHS) in Scotland is divided up into 14 geographically-based local NHS Boards and a number of National Special Health Boards. Health Boards in this report refers to the 14 local NHS Boards. (See Volume 2: Appendix C)
<b>Obesity</b>	See <b>Body mass index</b>
<b>Odds ratio</b>	See <b>Logistic regression</b>
<b>Overweight</b>	See <b>Body mass index</b>
<b>Percentile</b>	The value of a distribution which partitions the cases into groups of a specified size. For example, the 20th percentile is the value of the distribution where 20 percent of the cases have values below the 20th percentile and 80 percent have values above it. The 50th percentile is the median.
<b>p value</b>	A p value is the probability of the observed result occurring due to chance alone. A p value of less than 5% is conventionally taken to indicate a statistically significant result ( $p < 0.05$ ). It should be noted that the p value is dependent on the sample size, so that with large samples differences or associations which are very small may still be statistically significant. Results should therefore be assessed on the magnitude of the differences or associations as well as on the p value itself. The p values given

in this report take into account the clustered sampling design of the survey.

<b>Quintile</b>	Quintiles are percentiles which divide a distribution into fifths, i.e., the 20th, 40th, 60th and 80th percentiles.
<b>Scottish Index of Multiple Deprivation</b>	<p>The Scottish Index of Multiple Deprivation (SIMD) is the Scottish Government's official measure of area based multiple deprivation. It is based on 37 indicators across 7 individual domains of current income, employment, housing, health, education, skills and training and geographic access to services and telecommunications. SIMD is calculated at data zone level, enabling small pockets of deprivation to be identified. The data zones are ranked from most deprived (1) to least deprived (6505) on the overall SIMD index. The result is a comprehensive picture of relative area deprivation across Scotland.</p> <p>This report uses the SIMD 2012. <a href="http://www.gov.scot/Topics/Statistics/SIMD">www.gov.scot/Topics/Statistics/SIMD</a></p>
<b>Standard deviation</b>	The standard deviation is a measure of the extent to which the values within a set of data are dispersed from, or close to, the mean value. In a normally distributed set of data 68% of the cases will lie within one standard deviation of the mean, 95% within two standard deviations and 99% will be within 3 standard deviations. For example, for a mean value of 50 with a standard deviation of 5, 95% of values will lie within the range 40-60.
<b>Standard error</b>	The standard error is a variance estimate that measures the amount of uncertainty (as a result of sampling error) associated with a survey statistic. All data presented in this report in the form of means are presented with their associated standard errors (with the exception of the WEMWBS scores which are also presented with their standard deviations). Confidence intervals are calculated from the standard error; therefore the larger the standard error, the wider the confidence interval will be.
<b>Standard error of the mean</b>	See <b>Standard Error</b>
<b>Standardisation</b>	In this report, standardisation refers to standardisation (or 'adjustment') by age (see <b>Age standardisation</b> ).
<b>Unit of alcohol</b>	Alcohol consumption is reported in terms of units of alcohol. A unit of alcohol is 8 gms or 10ml of ethanol (pure alcohol). See Chapter 3 of volume 1 of this Report for a full explanation of how reported volumes of different alcoholic drinks were converted into units. The method for doing this has undergone significant



change since the report of the 2003 SHeS was published, these are also detailed in Chapter 3.

**Unweighted bases**

The unweighted bases presented in the report tables provide the number of individuals upon which the data in the table is based. This is the number of people that were interviewed as part of the SHeS and provided a valid answer to the particular question or set of questions. The unweighted bases show the number of people interviewed in various subgroups including gender, age and SIMD.

**Weighted bases**

See also **Unweighted bases**. The weighted bases are adjusted versions of the unweighted bases which involves calculating a weight for each individual so that their representation in the sample reflects their representation in the general population of Scotland living in private households. Categories within the table can be combined by using the weighted bases to calculate weighted averages of the relevant categories.

**WEMWBS**

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) was developed by researchers at the Universities of Warwick and Edinburgh, with funding provided by NHS Health Scotland, to enable the measurement of mental well-being of adults in the UK. It was adapted from a 40 item scale originally developed in New Zealand, the Affectometer 2. The WEMWBS scale comprises 14 positively worded statements with a five item scale ranging from '1 - None of the time' to '5 - All of the time'. The lowest score possible is therefore 14 and the highest is 70. The 14 items are designed to assess positive affect (optimism, cheerfulness, relaxation); and satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, mastery and autonomy).

References:

Kammann, R. and Flett, R. (1983). Sourcebook for measuring well-being with Affectometer 2. Dunedin, New Zealand: Why Not? Foundation.

The briefing paper on the development of WEMWBS is available online from:

[www.wellscotland.info/guidance/How-to-measure-mental-wellbeing/How-to-start-measuring-mental-wellbeing/The-Warwick-Edinburgh-Mental-Wellbeing-Scale](http://www.wellscotland.info/guidance/How-to-measure-mental-wellbeing/How-to-start-measuring-mental-wellbeing/The-Warwick-Edinburgh-Mental-Wellbeing-Scale)

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### **How to access background or source data**

The data collected for this statistical report:

will be made available via the UK Data Service

may be made available on request, subject to consideration of legal and ethical factors. Please contact [scottishhealthsurvey@gov.scot](mailto:scottishhealthsurvey@gov.scot) for further information.

Further breakdowns of the data:

are available via the Scottish Health Survey website

[www.scotland.gov.uk/Topics/Statistics/Browse/Health/scottish-health-survey](http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/scottish-health-survey)

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