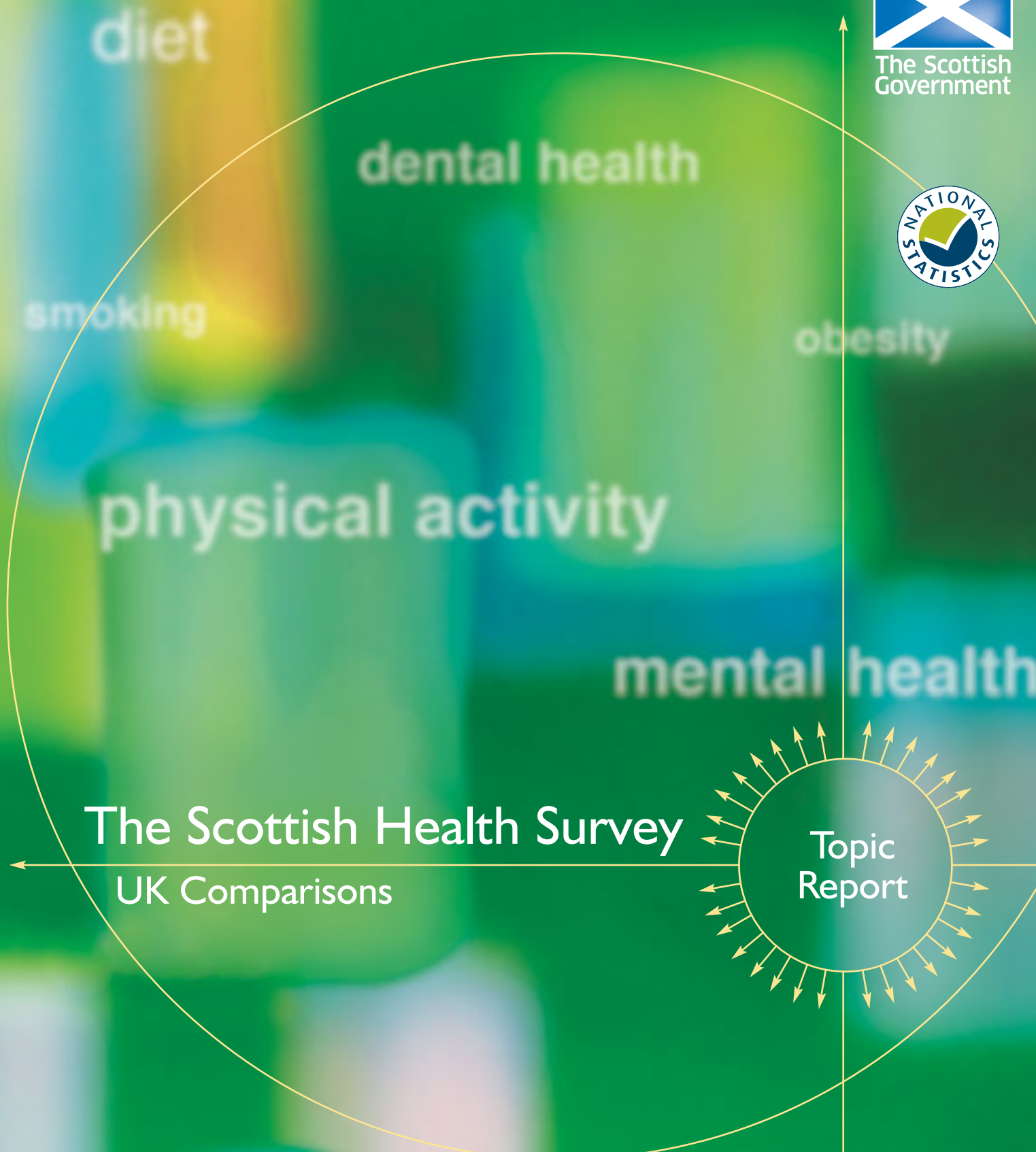




The Scottish Government



The Scottish Health Survey

UK Comparisons

Topic Report

alcohol

cardiovascular disease





# The Scottish Health Survey

UK Comparisons

Topic  
Report

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*Catherine Bromley, Nicola Shelton*



## **SUMMARY**

### **INTRODUCTION**

This report draws on data from the most recently published health surveys conducted in the four countries in the UK:

- The 2008 Scottish Health Survey (SHeS)
- The 2008 Health Survey for England (HSE) (2006 for the CVD data)
- The 2008 Welsh Health Survey (WHS)
- The 2005/6 Northern Ireland Health and Social Wellbeing Survey (NIHWS)

The report has two aims. Firstly, to update the information from previous SHeS reports about how Scotland fares relative to its nearest and largest neighbour, England. Secondly, it expands on these previous analyses by also comparing Scotland with Wales and Northern Ireland. The report looks at three broad areas: general health and wellbeing, including long-term conditions; smoking and alcohol consumption; diet, physical activity and obesity for the adult population aged 16 and over.

Responsibility for public health and NHS services is devolved to the administrations in Scotland, Wales and Northern Ireland. Health services therefore differ between the countries in many important respects. For example, policies relating to waiting times, patient choice, prescription charges, social care costs and governance arrangements all vary. However, advice on healthy living does not vary to the same extent. Uniform advice exists about sensible alcohol consumption, the recommended amount of physical activity and fruit and vegetable consumption, and the dangers of smoking.

It is therefore particularly interesting to compare the prevalence of health behaviours and outcomes in all countries in relation to the advice and recommendations in place across the UK. This summary highlights the aspects of adult health where Scotland's results were different to those in one or more of the other three countries in the UK.

### **GENERAL HEALTH AND WELL-BEING**

Self-assessed general health was very similar in Scotland, England, and Northern Ireland. Women in Scotland were more likely to have a limiting long-term condition than women in England. Men in Wales were more likely to have a limiting long-term condition than men in Scotland. Mental health was similar in Scotland and England, but better in Scotland than in Northern Ireland for men and women. The prevalence of any cardiovascular disease (CVD) or diabetes (combined) was higher in women in Scotland than in Northern Ireland, and was also higher in women in Scotland than in England. Other examples of cardiovascular disease were also higher among women in Scotland than in England.

### **Key findings:**

- The prevalence of limiting long-term conditions in women was higher in Scotland (28%) than in England (25%). Men in Wales (26%) had higher rates of limiting long-term conditions than men in Scotland (23%). These differences were marginally significant.
- 12% of men and 17% of women in Scotland had a high GHQ12 score (indicating possible psychiatric disorder), the rates in Northern Ireland were significantly higher (16% for men and 21% for women). Scotland and England had similar rates of high GHQ12.
- Conversely, having a GHQ12 score of zero (indicating psychological wellbeing) was significantly more likely in Scotland (64% of men and 58% of women) than in Northern Ireland (60% of men and 51% of women).
- The difference between the rates of ischaemic heart disease (IHD) among men in Scotland (6.9%) and Northern Ireland (8.3%) was marginally significant.
- The prevalence of any CVD condition or diabetes among women in Scotland (15.5%) was higher than the comparable rates for women in England (13.0%) or Northern Ireland (12.8%). This was also true of any CVD condition.
- IHD was also slightly higher among women in Scotland (6.2%) than in England (4.0%), as was the rate of IHD or stroke combined.

### **ALCOHOL CONSUMPTION AND SMOKING**

Alcohol consumption and smoking rates were higher in Scotland than England for both men and women. More women in Scotland smoked than in Wales.

### **Key findings:**

- Men in Scotland (25%) were less likely than those in England (30%) to have drunk within the Government guidelines on their heaviest drinking day in the last week. The same was true for women (21% in Scotland versus 26% in England).
- A slightly higher proportion of men in Scotland than England drank more than 4 units of alcohol on their heaviest drinking day in the last week (44% versus 41%). This difference was marginally significant.
- A significantly higher proportion of women in Scotland than England drank more than 3 units on their heaviest drinking day in the last week (36% versus 32%), or more than 6 units (18% versus 15%).
- Mean daily unit consumption was higher among men in Scotland (6.2 units) than men in England (4.3 units), the same was true for women (3.5 units versus 2.2).
- 27% of men in Scotland smoked compared with 24% in England. The equivalent figures for women were 25% and 20%. Women in Scotland were also more likely to smoke than women in Wales (25% versus 22%).
- The proportion of men who had never smoked was similar in Scotland (45%), Wales (45%) and England (44%). In contrast, it was significantly lower in Northern Ireland (38%).

- The rates of women never having smoked were 48% in both Scotland and Northern Ireland, compared with significantly higher rates in England (53%) and Wales (52%).

## **DIET AND OBESITY**

Fruit and vegetable consumption was significantly lower in Scotland than in England for both men and women. A higher proportion of men and women were overweight including obese in Scotland than in England or Northern Ireland. A higher proportion of women were obese in Scotland than in England or Northern Ireland but there were no significant differences in the prevalence of obesity among men.

### **Key findings:**

- Men in Scotland consumed 3.1 portions of fruit and vegetables a day compared with 3.5 in England. The corresponding figures for women were 3.4 and 3.8 portions, respectively.
- 20% of men and 24% of women in Scotland ate the recommended five or more portions a day compared with 25% of men and 29% of women in England.
- The prevalence of overweight including obesity (BMI 25 or more) in men was significantly higher in Scotland (68.5%) than in Northern Ireland (64.1%).
- In women, overweight including obesity prevalence was significantly higher in Scotland (61.8%) than in England (56.9%) or Northern Ireland (54.0%).
- Obesity prevalence (BMI 30 or more) in women was also significantly higher in Scotland (27.5%) than in England (24.9%) or Northern Ireland (23.5%).

## **CONCLUSION**

This summary has drawn out the key aspects that differed between Scotland and other countries in the UK. It should also be noted that there were aspects where there were few or no differences between the countries. For example, rates of physical activity in Scotland and England were the same. In addition, where differences were found, many tended to be small. However, some of the biggest differences were found in relation to smoking, diet and alcohol consumption. This suggests that Scotland's comparably poorer health outcomes, for example its lower levels of life expectancy, can in part be attributed to factors that are amenable to interventions. Finally, as readers of the Appendix will note, although the four countries in the UK collect similar information about their populations' health status, minor differences in question wording, and some major differences in survey format, make it quite difficult to conduct a comparative study such as this on a very comprehensive scale. The health and behaviours of people in the four countries of the UK may well be more similar – or even more diverse – than this report shows.

## **INTRODUCTION AND METHODOLOGY**

### **BACKGROUND TO THIS REPORT**

This report draws on data from the most recently published health surveys conducted in the four countries in the UK:

- The 2008 Scottish Health Survey (SHeS)<sup>1</sup>
- The 2008 Health Survey for England (HSE) (2006 for the CVD data)<sup>2</sup>
- The 2008 Welsh Health Survey (WHS)<sup>3</sup>
- The 2005/6 Northern Ireland Health and Social Wellbeing Survey (NIHWS)<sup>4</sup>

Prior to the 2008 report, the Scottish Health Survey reports have all presented comparisons between Scotland and England where available. Space constraints in 2008, and the fact that the two surveys now have different reporting timetables, meant that cross-country comparisons were not included. This report has two aims. Firstly, to update the information from previous SHeS reports about how Scotland fares relative to its nearest and largest neighbour, England. Secondly, it takes advantage of the opportunity to look more widely and include information about the other countries in the UK, Wales and Northern Ireland. The report looks at three broad areas: general health and wellbeing, including long-term conditions; smoking and alcohol consumption; and diet, physical activity and obesity. As the principal aim of the report is to compare Scotland with the rest of the UK, topics were only included if data existed for Scotland. Few of the topics were measured in all four surveys in a directly comparable way. However, most were included in at least three of them. Three topics (alcohol consumption, diet and physical activity) only draw on data from two countries (Scotland and England).

Other sources of health data exist in the UK. For example, each country maintains administrative records of hospital admissions and disease registers for certain conditions. In addition, the General Lifestyle Survey (GLF)<sup>5</sup> conducted by the Office for National Statistics collects data in Great Britain (England, Wales and Scotland) on a range of topics including health and health behaviours. Although some of the measures in the GLF are similar to those in the four dedicated health surveys, its scope is less extensive, and the sample in Scotland and Wales is much smaller, so cross-national comparisons based on the GLF are more limited.

The following sections outline why an exercise comparing the four countries is useful, and describe the methodological similarities and differences between the four countries' surveys.

### **WHY A GEOGRAPHIC PERSPECTIVE IS USEFUL**

Responsibility for public health and NHS services is devolved to the administrations in Scotland, Wales and Northern Ireland. Although many aspects of health are truly national in that they cover the whole UK, health service delivery in each of the four countries differs in many important respects. For example, policies relating to waiting times, patient choice, prescription charges, social care costs and governance arrangements all vary. Many of

these differences reflect the new arrangements in place post devolution to Scotland and Wales in 1999, and to Northern Ireland to varying degrees since 2000. However, it should also be noted that many of the structural differences in health service delivery, particularly so in Scotland and Northern Ireland, pre-date devolution by many years.<sup>6</sup> To take just one example of post-devolution policy divergence, prescription charges were abolished in Wales in 2007 and in Northern Ireland in 2010. Scotland is committed to doing the same by 2011. In contrast, England has no plans for universal free provision of this kind. Public health policy has seen similar variations in both the policies adopted and the approaches being followed. For example, Scotland was first in the UK to implement a ban on smoking in public places in March 2006, followed by Wales and Northern Ireland in April 2007, and England in July 2007. In a similar vein, all four Chief Medical Officers in the UK support minimum pricing for alcohol to help tackle excessive drinking, and Ministers in all countries support some form of alcohol pricing measures. For example, the UK Government's coalition agreement<sup>7</sup> includes commitments to ban the sale of alcohol below cost and to review alcohol taxation and pricing. However, the current Scottish Government is so far alone in its attempt to try and bring in legislation for minimum pricing of alcohol (though note that the Welsh Assembly Government does not have the power to do this).

While notable differences exist between the ways in which health services are delivered, and public health policy is implemented across the UK, there is a high degree of convergence when it comes to the advice given to each population about healthy lifestyles. For example, uniform advice exists about sensible alcohol consumption, the recommended amount of physical activity and fruit and vegetable consumption, and the dangers of smoking. Health behaviours, such as smoking, drinking, physical activity and diet form the core of the survey content in all four countries. It is therefore particularly interesting to compare the prevalence of unhealthy behaviours in all countries in relation to the advice and recommendations in place across the UK. This interesting combination of varying policy levers alongside identical advice is further complicated by a wide range of environmental, economic, social and cultural differences at the individual, regional and national levels, all of which could potentially affect health behaviours including diet, smoking, alcohol consumption and physical activity participation. In turn, these could directly or indirectly affect health outcomes, including those explored in this report (self-assessed health, long-term conditions, psychosocial health and cardiovascular disease).

It is also worth noting that the demographics of the four countries of the UK are very different. In 2008 Scotland's population was just over 5 million people, Northern Ireland's just over 1.7 million, and Wales' just under 3 million. In contrast, England's population of over 51 million exceeds the other countries by at least ten times.<sup>8</sup> The table below shows that Scotland has the lowest life expectancy for both men and women in the UK.

	Life expectancy at birth in years (2006-8) <sup>9</sup>	
	Men	Women
Scotland	75.0	79.9
England	77.7	81.9
Wales	76.9	81.2
Northern Ireland	76.3	81.2

Improvements in health have been slower in Scotland than in many other comparable countries. In 1930, Scotland's life expectancy for men was ranked 9<sup>th</sup>, and women's was 11<sup>th</sup>, among 17 Western European countries. By the mid-1990s its position had fallen to 16<sup>th</sup> for men (only slightly ahead of Portugal) and 17<sup>th</sup> for women.<sup>10</sup> In contrast, while the rankings for England and Wales, and Northern Ireland, were similar to Scotland's in 1930 and had also declined by 1995, the decline in these countries was less sharp. In particular, Scotland continues to have the highest death rates from heart disease and lung cancer and the second highest death rates for stroke in Western Europe.<sup>10</sup>

This report looks at country-level variation in health outcomes and behaviours, it does not consider any geographic inequalities in the social determinants of health or other factors which might underlie these. Although, as discussed further below, there is a significant body of evidence which suggests that socio-economic circumstances alone do not explain country-level differences in health outcomes.

A significant amount of analysis has explored why many health outcomes are found to be worse in Scotland than in England. Research in the 1980s initially linked this disadvantage to Scotland's area level deprivation. However, even when matched with deprivation quintiles in England, Scotland's relative health disadvantage remained.<sup>11</sup> Analysis of the 2001 Census found that the health divide within the same social class across Scotland, England and Wales was widest in Scotland and London.<sup>12</sup> This evidence suggests that there are factors at work, other than poverty alone, affecting health in Scotland. This unexplained difference has been termed the "Scottish effect".<sup>13,14,15</sup> It has also been suggested that this unexplained "Scottish effect" associated with Scotland's relative mortality disadvantage has both endured over time and worsened.<sup>16,17</sup> Of relevance to the factors explored in this report, previous analysis showed that significant geographic variation remained in smoking, fruit and vegetable consumption, diabetes and obesity between areas in Scotland and England once individual economic status was taken into account.<sup>18</sup> However, the relationship was complex and varied depending upon the risk factor involved and by gender. In some cases, the geographic variation was not between countries; some areas within both England and Scotland had better or worse outcomes than would be predicted by deprivation alone. Obesity in women stood out as the cardiovascular risk factor that demonstrated the strongest "Scottish effect", with the difference between Scotland and England the most pronounced of the factors analysed.

More recently, work has suggested that much of the excess between Scotland's morbidity and mortality rates, and what would be expected given its socio-economic characteristics, is located in the west of Scotland.<sup>19</sup> One question now being explored is whether the "Scottish effect" is in fact more localised and is more accurately a "Glasgow effect". This phenomenon is not unique to

Scotland, however. A study that found certain regions in the north of England and Wales also had significantly worse health outcomes than would be expected by deprivation alone, has likened this to the “Scottish effect”.<sup>20</sup>

## **SURVEY METHODS IN THE FOUR COUNTRIES**

### **Background and comparability**

This section presents a brief overview of the methods of data collection used in each of the four surveys. Further details can be found in each of their respective published reports (see references). Appendix 1 includes details of all the questions that this report draws on and highlights any key differences in either the wording or data collection method used. Items where the question wording or collection method were very different to that used in the Scottish Health Survey were omitted from the report at an earlier scoping stage. For example, the self-reported measures of height and weight in Wales have not been compared with the direct measures taken in the other three countries. In some cases a pragmatic judgement had to be made about whether the differences between the surveys still meant that the data were functionally equivalent, even if they were not completely identical. Such examples are highlighted in the text.

Health surveys make use of many standardised scales and measures so the extent to which the surveys are alike is partly a reflection of this. In addition, the design and content of both the Scottish Health Survey and the Northern Ireland Health and Wellbeing Survey were modelled on the Health Survey for England series which began in 1991.<sup>21,22</sup> However, each survey was also developed to suit the needs of the populations and health providers in each specific setting and variations in content and design reflect this. As will become clear, the surveys in Scotland,<sup>23</sup> England<sup>24</sup> and Northern Ireland<sup>25</sup> are closest in terms of their content and study design. In contrast, Wales<sup>26</sup> uses a different data collection method and its questionnaire content is more distinct.

### **Sample design and response**

The sample in each country was designed to provide data at the national level about the adult population aged 16 and over living in private households. All surveys also provide estimates for children. Three of the surveys also provide regional estimates that relate to their specific sub-geographies and administrative arrangements for delivering health care in each country (the 14 Health Boards in Scotland, 10 Strategic Health Authorities in England, and 22 local authorities in Wales). The sample frame in each country was a list of private households (Royal Mail’s Postcode Address File for Scotland, England and Wales, and the Valuation and Lands Agency list in Northern Ireland).

The Scottish, English and Welsh surveys used a multi-stage, stratified sample design (the stratifiers used were specific to each country). The

addresses selected in Wales were unclustered. In contrast, Scotland and England clustered the addresses by selecting them from small geographic units to help maximise fieldwork efficiency.<sup>27</sup> The Northern Irish Survey used a stratified unclustered simple random sample. In each country, all adults aged 16 and over in each selected household were eligible for inclusion in the survey.<sup>28</sup>

The response rates, based on the proportion of households in which at least one adult participated, differed in each country, as set out below. This variation will in part reflect differences in the burdens associated with each data collection method; as described below, the Welsh Health Survey is largely based on short self-completion questionnaires.

- Scotland 61%
- England 64%
- Wales 74%
- Northern Ireland 66%

Non-response weighting was used to reduce bias in all four surveys. Each survey used calibration weighting to match the distribution of the achieved sample to mid-year population estimates drawn from the Census.

### **Fieldwork and data collection**

As noted above, the data presented in this report are based on the most recently conducted surveys in each of the four countries for which data are publicly available. Fieldwork in Scotland, England and Wales took place in the 2008 calendar year; fieldwork in Northern Ireland was conducted between February 2005 and February 2006.<sup>29</sup>

The survey administration was very similar in Scotland, England and Northern Ireland. Each of these surveys used face to face interviews complemented by self-completion questionnaires and direct measurements of height and weight. The main difference between them was that Northern Ireland used a computer-assisted self-completion questionnaire whereas paper questionnaires were used in Scotland and England. Data collection was very different in Wales and this has implications for the interpretation of some of the data in this report. A face to face interview was used to collect information for each participating household but the main data collection from individuals used self-completion questionnaires. There were no direct measurements of adult height or weight.

In 2006 the London Health Observatory commissioned a separate parallel study based on the Health Survey for England. This study used self-completion methods instead of face to face interviews to help reduce costs. A comparison of the HSE survey data for London (collected via interviews), and the self-completion data from the parallel study in London, drew a number of conclusions of relevance to this report.<sup>30</sup> Firstly, measures such as general health, long-term conditions and smoking prevalence were comparable across survey types and



therefore the mode of data collection did not appear to bias the results. Secondly, there were significant differences between some estimates, including the number of units of alcohol consumed on the heaviest drinking day (which is reported in Chapter 3). While it is not possible to state definitively which estimate is the more accurate in each case, it is likely that self-completion reports of sensitive behaviours such as alcohol consumption volume are more accurate than those obtained via direct interviews. The likely impact of mode effects such as these are therefore discussed further in each section of this report, where applicable.

## **Details of each country's survey**

### ***Scotland***

The 2008 Scottish Health Survey was commissioned by the Scottish Government Health Directorates. It was the fourth of a series of surveys aimed at monitoring health in Scotland (the previous surveys were conducted in 1995, 1998 and 2003). The principal focus of the 2008 survey was cardiovascular disease (CVD) and related risk factors. The Survey consists of two stages, all those sampled are invited to take part in the first stage interview while a sub-sample is invited to also complete a second stage visit from a nurse. The interview includes questions on general health, mental health, cardiovascular disease, respiratory symptoms, eating habits, smoking, drinking, and physical activity, as well as height and weight measurements. This report only draws on data collected in the main interview. In future years, when the sample is larger, it will be possible to compare the data collected in the nurse visit with the equivalent HSE data (the Welsh and Northern Irish surveys do not include nurse visits). The study is conducted by a consortium led by the Scottish Centre for Social Research, including the MRC/CSO Social and Public Health Sciences Unit in Glasgow, and the Department of Epidemiology and Public Health at the UCL (University College London) Medical School.

### ***England***

The Health Survey for England is a series of annual surveys that began in 1991. The 2008 survey was the eighteenth and was commissioned by the NHS Information Centre for health and social care. The survey's main focus changes every year. The 2008 survey's primary focus was physical activity, in 2006 the focus was cardiovascular disease (data from both these years are presented in this report). Each year the survey also includes a number of measures of key health outcomes and behaviours, such as general health, smoking and drinking, fruit and vegetable consumption, and height and weight measures. As noted above, the HSE also uses a two stage design involving a first stage interview and a second stage nurse visit. Unlike SHeS, all participants at the first stage are eligible to proceed to the second. The study is conducted by the Joint Health Surveys unit of the National Centre for

Social Research and the Department of Epidemiology and Public Health at the UCL (University College London) Medical School.

### ***Wales***

The Welsh Health Survey is commissioned by the Welsh Assembly Government and has been carried out annually since 2003. Prior to 2003 two health surveys were conducted in Wales, dating back to 1985, and the WHS was designed to replace these two sources. Its topics include key health behaviours such as smoking, drinking, fruit and vegetable consumption and physical activity, as well as illness burden and use of NHS services. As noted above, the study design differs to the one used in the other three countries in the UK, although the topics are broadly similar. The study is conducted by the National Centre for Social Research.

### ***Northern Ireland***

The Northern Ireland Health and Wellbeing survey has been conducted three times so far, in 1997, 2001 and 2005/6. It is commissioned by the Department of Health, Social Services and Public Safety in Northern Ireland. As noted above, the topics and data collection methods are similar to those used in Scotland and England, however the 2005/6 survey did not include a second stage nurse visit. Its principal topics include cardiovascular disease, general and mental health, physical activity, smoking, drinking and height and weight measures. The study was conducted by the Northern Ireland Statistics and Research Agency.

### **Data analysis**

#### ***Interpreting differences between countries***

The statistical significance of the differences between the figures for Scotland and the other countries presented in this report has been tested. In addition, confidence intervals for the differences have been calculated to help assess the precision of the estimates. These help to identify instances where the large samples in each country suggest that the differences in populations are statistically significant even though the size of the true population difference could be very small. Although statistical significance has long been the standard way of assessing the probability that a finding is real, precision estimates are a better way of judging the substantive importance of results of analyses such as these.<sup>31</sup> Using a hypothetical example, a difference between two countries of four percentage points (pp), with a confidence interval of 1.2-7.5, means that the difference between the two populations might be as small as just 1.2 pp, or as large as 7.5 pp. It would be unwise to place too much importance on a difference between countries as small as 1.2 pp, without additional information to support the interpretation, such as confirmation from other studies that the difference has important consequences. The conventional threshold for significance testing uses the 5% level, which means that something significant at this level has a one in twenty chance of not being real. As the samples in each country are quite large, and the number of tests being

conducted was also quite high, a more conservative approach was used for this report.<sup>32</sup> Only differences significant at the 1% level are described as significant, while those at the 5% level are described as “marginally significant”. Table A1 at the end of the tables for all the chapters presents the differences between estimates highlighted in the text and the associated confidence interval and the p value.

### ***Data availability***

Some of the data presented in this report have been taken directly from published sources. All of the figures for Scotland and Wales have been taken from the 2008 reports of those surveys, or from tables published on the web.<sup>33,34</sup> Some of the data for England are taken from the 2006<sup>35</sup> and 2008<sup>36</sup> HSE reports. The figures for England in the following tables are based on re-analysis by the authors and do not therefore match similar tables in the main HSE publication series: Table 1.4 (only the any CVD or diabetes row), Table 2.1 (all figures), Table 3.2 (all figures). Details of these re-analyses are provided in the Appendix. All of the figures presented for Northern Ireland are based on re-analysis by the authors using the data from the UK Data Archive.

The data for all four surveys presented in this report (and for all previous years) are available from the UK Data Archive: [www.data-archive.ac.uk/](http://www.data-archive.ac.uk/).

## References and notes

- <sup>1</sup> Details of the SHeS can be found here:  
[www.scotland.gov.uk/Topics/Statistics/Browse/Health/scottish-health-survey](http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/scottish-health-survey)
- <sup>2</sup> Details of the HSE can be found here: [www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england](http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england)
- <sup>3</sup> Details of the WHS can be found here: [new.wales.gov.uk/topics/statistics/theme/health/health-survey/results/?lang=en](http://new.wales.gov.uk/topics/statistics/theme/health/health-survey/results/?lang=en)
- <sup>4</sup> Details of the NIHSW can be found here: [www.csu.nisra.gov.uk/survey.asp46.htm](http://www.csu.nisra.gov.uk/survey.asp46.htm)
- <sup>5</sup> Details of the GLF can be found here:  
[www.statistics.gov.uk/statbase/product.asp?vlnk=5756](http://www.statistics.gov.uk/statbase/product.asp?vlnk=5756)
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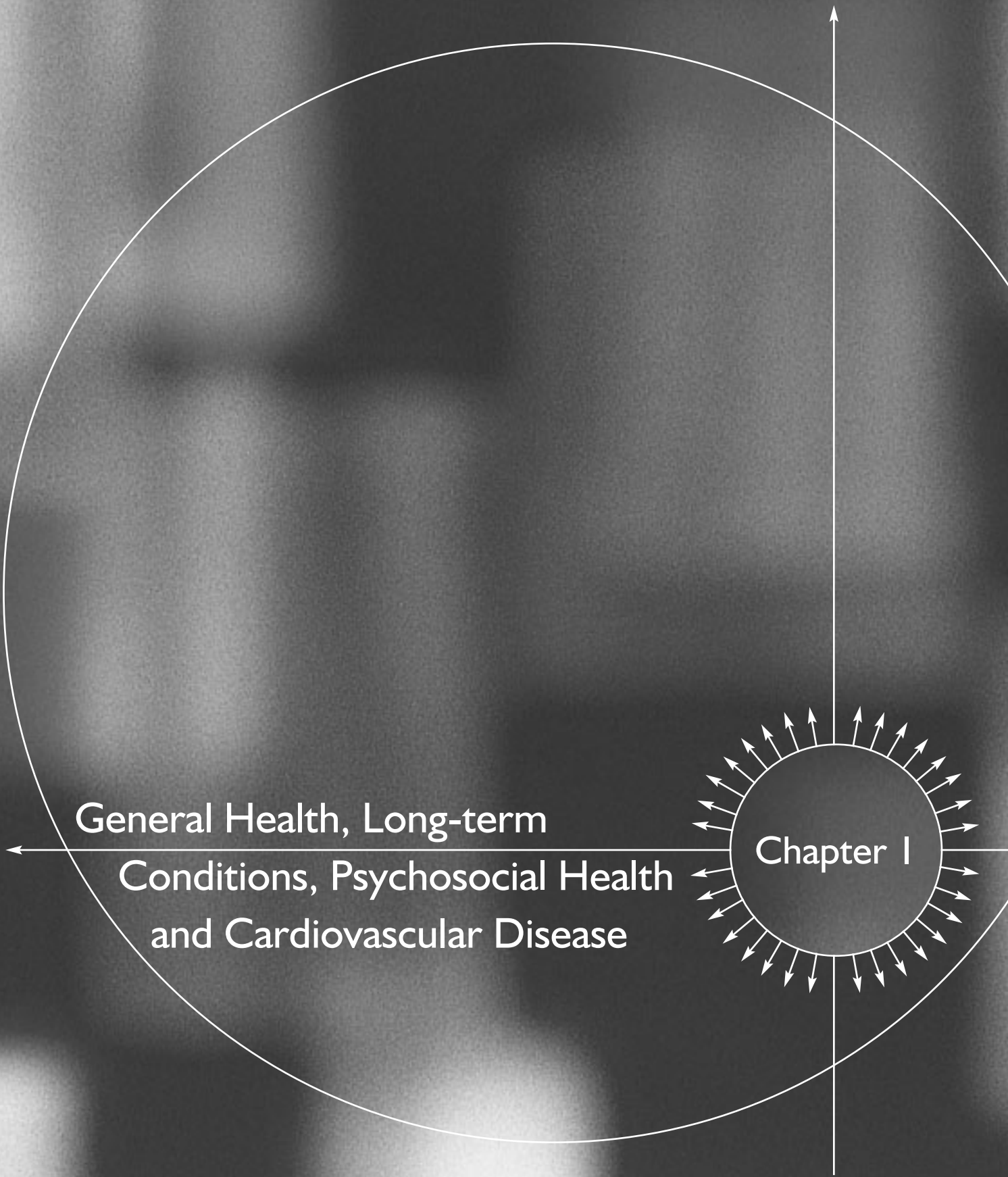
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## Notes to tables

- 1 The following conventions have been used in tables:
  - no observations (zero value)
  - 0 non-zero values of less than 0.5% and thus rounded to zero
- 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 Error 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 99% level), and 'marginally significant' refers to the 95% level. Neither is intended to imply substantive importance.







General Health, Long-term  
Conditions, Psychosocial Health  
and Cardiovascular Disease

Chapter I

# 1 GENERAL HEALTH, LONG-TERM CONDITIONS, PSYCHOSOCIAL HEALTH AND CARDIOVASCULAR DISEASE

## 1.1 INTRODUCTION

This chapter reports self-assessed general health, long-term conditions, psychosocial health and cardiovascular disease. Adults were asked to rate their own health in general and whether they had any long-standing illness or condition. They also completed a module of 12 questions about psychosocial health in the last month and were asked to report any cardiovascular diseases. Responses are based on subjective assessments and will therefore be prone to some recall bias.

The Scottish Government has set several targets for general and mental health in recent years. The National Performance Framework launched in 2007<sup>1</sup> includes a target to match average European (EU15) population growth over the period from 2007 to 2017, supported by increased healthy life expectancy in Scotland over this period. This target is underpinned by a strategic objective to: help people to sustain and improve their health, especially in disadvantaged communities, ensuring better, local and faster access to health care.

The 2008 report of the Ministerial Taskforce on Health Inequalities, *Equally Well*, highlighted the significant inequalities associated with general and mental health and stated that "enhancing mental health, wellbeing and resilience" was one of its key priorities.<sup>2</sup> A new policy and action plan for mental health improvement in Scotland was launched in 2009: *Towards a Mentally Flourishing Scotland* (TAMFS).<sup>3</sup> This plan outlined six strategic priorities 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 illness.

In England, specific Public Service Agreement (PSA) Targets were set for the Department of Health in 2007. These included increasing overall life expectancy at birth to 78.6 years for men and 82.5 years for women by 2010.<sup>4</sup> The actions to deliver this involve continuing to increase life expectancy in England by tackling the biggest killer diseases, with an emphasis on ill health prevention and promotion of good health, and sustaining the drive to promote equality and to reduce inequalities in health. For mental health the PSA target covers improving the wellbeing and inclusion of people with depression and / or anxiety disorders through improved access to psychological therapies.

In Wales, the Welsh Assembly Government's *Mental Health Promotion Action Plan for Wales*, devised in 2002 and revised in 2005, aims to improve the mental health and wellbeing of the population of Wales.<sup>5</sup> The 2010 *Our healthy future* strategic framework for public health in Wales includes an action area on health and wellbeing through the life course with key priority tasks to reduce inequities in health and to improve people's mental wellbeing.<sup>6</sup> For example, there is a target to increase the mean Mental Component Summary Score for Wales to 50 by 2012 (this is measured via the SF-36 questionnaire<sup>7</sup> included in the Welsh Health Survey). There is also a target to reduce the EASR<sup>8</sup> from

suicide at all ages (including undetermined deaths) by at least 10 per cent by 2012.

In Northern Ireland, a target was set in 2002 to improve levels of life expectancy towards the levels of the best EU countries, by increasing life expectancy by at least 3 years for men and 2 years for women between 2000 and 2010. Life expectancy at birth for men and women born in Northern Ireland in 1998-2000 was 74.5 and 79.6 years respectively. A psychosocial health target was set to promote mental health and emotional well-being at individual and community level by reducing the proportion of people with a potential psychiatric disorder (as measured by the GHQ12 scale) by a tenth by 2010.<sup>9</sup>

Scotland, England and Wales also have targets relating to cardiovascular (CVD) mortality (there are no equivalent targets in Northern Ireland). In Scotland, the latest targets (revised in 2004) included a 60% reduction in CHD mortality and a 50% reduction in stroke mortality in the under 75s between 1995 and 2010.<sup>10</sup> England set a target in 1999 to reduce the death rate from CHD, stroke and related diseases in the under 75s by 40% by 2010.<sup>11</sup> The target in Wales is to reduce CHD mortality in those aged 65-74 from 600 to 400 per 100,000 by 2012, with a health inequalities target to improve CHD mortality in all groups and at the same time aim for a more rapid improvement in the most deprived groups.<sup>12</sup>

## 1.2 SELF ASSESSED GENERAL HEALTH

### 1.2.1 General health

The surveys in Scotland, England and Northern Ireland included a question that asked participants to assess their health in general as either very good, good, fair, bad, or very bad. Wales also measured this aspect of health via the SF-36 questionnaire but it uses a different question format that is not comparable. Self-assessed health is a useful measure of how an individual regards their own condition generally and is known to be related to the incidence of chronic and acute disease, as well as being a good predictor of hospital admission and mortality.<sup>13,14</sup>

The proportion of men reporting their health as either good or very good was very similar in all three countries (76% in Scotland and England, 75% in Northern Ireland). The same was true for women (75% in Scotland and England, 73% in Northern Ireland). Good or very good self-assessed general health was highest in younger men and women in all three countries and decreased steadily with age. **Table 1.1**

These findings are similar to those in most previous years. The reports of the 2003<sup>15</sup> and 1998<sup>16</sup> Scottish Health Surveys showed that the prevalence of good or very good self-assessed general health did not differ between Scotland and England for either sex. In contrast, the 1995<sup>17</sup> report showed that adults in Scotland aged 16-64<sup>18</sup> had slightly lower levels of good or very good self-assessed health than their counterparts in England (77% and 81%, respectively).

Given that many health outcomes are worse in Scotland than in England the similar levels of reporting good self-assessed health could be due to the cultural norms and expectations of what is considered good health being different in the two countries. It is also worth noting that some of the difference in life expectancy and health outcomes might be explained by higher rates in Scotland of premature deaths from substance misuse, violence and suicide (among men particularly).<sup>19</sup> Many people at risk of these kinds of outcomes are from the most disadvantaged groups in society, who are also the least likely to participate in population health surveys.

### 1.3 LONG-TERM CONDITIONS

#### 1.3.1 Long-term conditions

All four countries asked questions about long-term conditions but the question wording varied somewhat. Full details are provided in Appendix 1, but the key differences are set out here. The question in Scotland asked about long-standing physical or mental conditions, or disabilities, that had lasted, or were likely to last, for at least 12 months. In England and Northern Ireland the question referred to long-standing illness, disability or infirmity lasting for a period of time. In these three countries participants were also asked to say whether their condition or conditions limited their daily activities in any way (conditions could therefore be further classified as limiting or non-limiting). In contrast, Wales asked a single question about long-term illnesses, health problems or disabilities which limit daily activities or work. As the nature of the question differed between countries any differences between them shown here should be treated with caution as they may be due to differences in wording rather than genuine population differences.

The prevalence of limiting long-term conditions among men in Scotland (23%) was not significantly different to the rate found in England (21%) or Northern Ireland (25%). The rate in Wales (26%) was significantly higher, but only marginally so. The corresponding pattern for women was different. The rates in Scotland (28%), Wales (29%) and Northern Ireland (28%) were almost identical. However, the difference between the prevalence of limiting long-term conditions in women in Scotland (28%) and England (25%) was marginally statistically significant.

#### **Table 1.2, Table A1**

There have been changes over time in the way these measures have differed between Scotland and England. In 2003, men in Scotland reported lower levels of long-standing illness than in England while there were no significant differences between the countries for women. In 1998, as in 2003, the prevalence of long-standing illness was lower in men aged 16-74 in Scotland than in England, but also lower in women in Scotland. As the question wording changed in 2008 in Scotland the differences in these patterns over time must be treated with caution.

## 1.4 PSYCHOSOCIAL HEALTH

### 1.4.1 GHQ12 Scores

The General Health Questionnaire was included in the surveys in Scotland, England and Northern Ireland (a similar, but not comparable instrument was used in the Welsh Health Survey). GHQ12 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. As the GHQ12 measures deviations from people's usual functioning in the previous few weeks it cannot, therefore, be used to detect chronic conditions. Furthermore, estimates cannot be made of the duration of any incidence of recent psychological ill-health and as such it is simply a measure of ill-health at a particular point in time. However, the strength of the GHQ12 is that it enables comparisons between groups and trends over time to be investigated.

Responses to the GHQ12 items were 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 here to indicate the presence of a possible psychiatric disorder. A score of zero on the GHQ12 questionnaire can, in contrast, be considered to be an indicator of psychological wellbeing.

The proportion of men in Scotland (12%) and England (11%) with a high GHQ12 was very similar. In contrast, the rate in Northern Ireland (16%) was significantly higher than in Scotland. The proportion of men with a GHQ12 score of zero was significantly higher in Scotland (64%) than in Northern Ireland (60%). The figure in England (66%) was not significantly different to that in Scotland. **Table 1.3, Table A1**

The pattern for women was the same. The proportion of women with a high GHQ12 score was significantly lower in Scotland (17%) than in Northern Ireland (21%), but similar to the rate in England (15%). The proportion of women with a GHQ12 score of zero was significantly higher in Scotland (58%) than in Northern Ireland (51%), and was marginally lower than in England (60%). **Table 1.3, Table A1**

There have been changes over time in the proportion of high GHQ12 scores comparing Scotland and England. The 2003 survey (based on all aged 16 and over) and 1995 survey (aged 16-64 only) reported no significant differences between Scotland and England for men or women. However, in 1998 the prevalence of high GHQ scores were the same in men aged 16-74 in Scotland and England, but lower in women in Scotland than in England.

## 1.5 CARDIOVASCULAR DISEASE

### 1.5.1 CVD and diabetes

As noted in the Introduction, the surveys in Scotland, England and Northern Ireland have many common features one of which is their focus on cardiovascular (CVD) conditions. While the questions in Scotland and England for this topic are identical, the format in Northern Ireland is slightly different and is worth mentioning briefly (full details are in Appendix 1). Participants in Scotland and England were asked if they had ever had any of a number of cardiovascular and circulatory conditions, or diabetes (excluding women with diabetes or heart murmur which only occurred during pregnancy). They were then asked if their condition was confirmed by a doctor. In Northern Ireland the conditions were not asked about separately and participants were instead presented with a card and asked if a doctor had ever told them they had had any of them. Diabetes which only occurred in pregnancy was excluded, but, unlike Scotland and England, heart murmur confined to pregnancy was not. Finally, Scotland and England asked directly about abnormal heart rhythm whereas this was not on the card used in Northern Ireland. It is assumed for this report that it would have been reported as “other kind of heart trouble.” Comparisons with Northern Ireland should therefore be treated with caution due to the different question formats. The Welsh Health Survey asks about cardiovascular conditions (current treatment for angina, heart failure, hypertension, other heart condition and diabetes, and whether ever treated for heart attack or stroke) but uses different methodology so the information is not comparable and is therefore not included in this report.

Based on participants’ answers, conditions were grouped as follows:

- Any CVD (angina, heart attack, stroke, heart murmur, abnormal heart rhythm, ‘other’ heart trouble);
- Any CVD or diabetes (the preceding category plus diabetes);
- IHD<sup>20</sup> (angina, heart attack); and
- IHD or stroke (the preceding category plus stroke).

Among men, the prevalence of any CVD in Scotland (15.1%) was not significantly different to that in England (13.6%) or in Northern Ireland (13.7%). The prevalence of any CVD or diabetes was not significantly different in Scotland (18.2%), England (17.1%) or Northern Ireland (16.1%). The prevalence of IHD was higher in Northern Ireland (8.3%) than Scotland (6.9%), though rates of IHD and stroke, did not differ significantly between the three countries. For example, the rates for IHD and stroke were 8.7% in Scotland, 8.1% in England and 9.3% in Northern Ireland.

**Table 1.4, Table A1**

Women in Scotland had a higher prevalence of all four condition types than those in England, and higher rates of CVD and CVD or diabetes than women in Northern Ireland. The prevalence of any CVD among women in Scotland (15.5%) was slightly higher than the comparable rates for women in England (13.0%) or Northern Ireland (12.8%). The pattern was the same for any CVD or diabetes (18.2% in Scotland, 16.0% in England, and 14.9% in Northern Ireland). The difference between Scotland and England was marginally significant.

The prevalence of IHD in women was similar in all three countries (Scotland 5.6%, England 4.0%, and Northern Ireland 6.2%) though the small difference between Scotland and England was statistically significant. The prevalence of IHD or stroke was significantly higher in women in Scotland (7.5%) than in England (5.6%), while the rate in Northern Ireland (7.0%) was very similar to that in Scotland.

Although all these differences were significant at the 1% level their size was generally small. As noted in the introduction, small differences with large samples can often be statistically significant even though they represent little substantive importance (and it is worth noting that the sample size for women in Scotland is larger than it is for men). However, it is also possible that true population differences between these conditions also exist for men but that the differences are very small so the samples are not big enough to detect them.

**Table 1.4, Table A1**

The prevalence of CVD in Scotland compared with England has changed over time. In 2003 CVD prevalence in adults aged 16 and over was not significantly different in Scotland and England. In 1998 (comparing adults aged 16-74) and 1995 (comparing adults aged 16-64) CVD prevalence was significantly higher in men but not in women in Scotland compared with England. The caveats about the large sample sizes and relatively small differences between Scotland and England in 2008 suggest that these changes over time in the difference between the countries' rates are unlikely to signify a change of any clinical importance.

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**Table 1.1 Self-assessed general health, Scotland, England and Northern Ireland, by age and sex**

*Aged 16 and over*

*S & E 2008; NI 2005/6*

Self-assessed general health	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Men</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
Very good	54	48	39	35	30	24	17	37
Good	34	40	44	43	36	37	38	39
Fair	12	9	12	14	21	28	27	16
Bad	1	2	5	7	9	9	14	6
Very bad	-	1	1	2	4	2	4	2
<i>Very good/good</i>	88	88	82	78	66	61	55	76
<i>Bad/very bad</i>	1	3	5	8	13	12	17	7
<b>England</b>								
Very good	47	43	37	34	27	22	16	35
Good	41	43	45	43	41	39	37	42
Fair	11	12	14	18	23	26	35	18
Bad	1	2	3	4	7	10	10	4
Very bad	0	1	0	2	3	3	3	1
<i>Very good/good</i>	88	86	82	77	68	61	52	76
<i>Bad/very bad</i>	1	2	3	6	10	13	13	6
<b>Northern Ireland</b>								
Very good	45	43	36	29	25	20	14	34
Good	45	46	45	40	37	37	32	42
Fair	10	8	14	21	23	28	37	17
Bad	-	3	4	8	11	12	14	6
Very bad	-	1	1	2	4	3	2	2
<i>Very good/good</i>	90	89	81	69	62	57	46	75
<i>Bad/very bad</i>	-	3	5	10	15	15	17	8
<i>Bases (weighted):</i>								
<i>Men Scotland</i>	464	481	563	555	480	327	218	3087
<i>Men England</i>	1137	1212	1414	1209	1086	726	539	7324
<i>Men Northern Ireland</i>	278	270	301	254	209	142	95	1549
<i>Bases (unweighted):</i>								
<i>Men Scotland</i>	246	317	460	535	525	453	304	2840
<i>Men England</i>	774	954	1221	1100	1183	875	648	6755
<i>Men Northern Ireland</i>	153	278	345	305	275	237	152	1745

*Continued...*

**Table 1.1 - Continued**

*Aged 16 and over*

*S & E 2008; NI 2005/6*

Self-assessed general health	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Women</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
Very good	41	45	42	36	29	26	18	35
Good	45	40	41	39	40	37	34	40
Fair	12	12	14	18	20	26	36	19
Bad	2	3	3	5	8	8	10	5
Very bad	-	0	0	2	4	3	3	2
<i>Very good/good</i>	86	85	82	75	69	64	51	75
<i>Bad/very bad</i>	2	3	3	7	11	11	13	7
<b>England</b>								
Very good	37	41	39	34	30	20	14	33
Good	51	45	42	41	40	42	35	43
Fair	10	11	14	17	20	25	37	18
Bad	2	2	3	5	8	9	11	5
Very bad	0	1	1	2	2	4	4	2
<i>Very good/good</i>	88	86	82	76	70	62	49	75
<i>Bad/very bad</i>	2	3	4	8	10	13	14	7
<b>Northern Ireland</b>								
Very good	43	45	45	34	28	18	16	35
Good	45	40	36	38	34	35	34	38
Fair	10	10	13	19	24	32	36	18
Bad	2	3	6	7	12	10	10	7
Very bad	-	1	1	2	3	4	3	2
<i>Very good/good</i>	88	86	81	72	62	53	51	73
<i>Bad/very bad</i>	2	4	7	9	15	14	13	8
<i>Bases (weighted):</i>								
<i>Women Scotland</i>	444	487	616	591	504	384	350	3376
<i>Women England</i>	1091	1215	1433	1233	1123	800	785	7681
<i>Women Northern Ireland</i>	280	291	331	272	233	175	172	1754
<i>Bases (unweighted):</i>								
<i>Women Scotland</i>	333	451	648	632	632	516	410	3622
<i>Women England</i>	920	1219	1514	1374	1366	1000	947	8340
<i>Women Northern Ireland</i>	254	428	501	417	334	312	251	2497

Note: No data are presented for Wales because the Welsh Health Survey's question on self-assessed health uses different answer categories that are not comparable with the Scottish, English and Northern Irish surveys.

**Table 1.2 Prevalence of long-term conditions, Scotland, England, Wales and Northern Ireland, by age and sex**

*Aged 16 and over*

*S, E & W 2008; NI 2005/6*

Long-term conditions and limiting long-term conditions	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Men</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
No long-term conditions	84	79	67	61	46	38	33	62
Limiting long-term conditions	7	10	20	22	34	43	50	23
Non-limiting long-term conditions	10	12	14	17	20	19	17	15
<i>Total with conditions</i>	<i>16</i>	<i>21</i>	<i>33</i>	<i>39</i>	<i>54</i>	<i>62</i>	<i>67</i>	<i>38</i>
<b>England</b>								
No long-term conditions	81	78	67	60	43	33	27	60
Limiting long-term conditions	6	10	17	20	29	37	49	21
Non-limiting long-term conditions	13	13	16	19	28	30	24	19
<i>Total with conditions</i>	<i>19</i>	<i>22</i>	<i>33</i>	<i>40</i>	<i>57</i>	<i>67</i>	<i>73</i>	<i>40</i>
<b>Wales<sup>a</sup></b>								
No long-term conditions	-	-	-	-	-	-	-	-
Limiting long-term conditions	6	10	15	23	39	51	58	26
Non-limiting long-term conditions	-	-	-	-	-	-	-	-
<i>Total with conditions</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<b>Northern Ireland</b>								
No long-term conditions	88	82	71	59	43	28	32	64
Limiting long-term conditions	4	12	18	29	41	53	59	25
Non-limiting long-term conditions	8	6	11	12	16	18	9	11
<i>Total with conditions</i>	<i>12</i>	<i>17</i>	<i>28</i>	<i>41</i>	<i>57</i>	<i>72</i>	<i>68</i>	<i>36</i>
<i>Bases (weighted):</i>								
<i>Men Scotland</i>	<i>464</i>	<i>481</i>	<i>563</i>	<i>555</i>	<i>480</i>	<i>327</i>	<i>218</i>	<i>3087</i>
<i>Men England</i>	<i>1136</i>	<i>1212</i>	<i>1414</i>	<i>1209</i>	<i>1086</i>	<i>726</i>	<i>539</i>	<i>7323</i>
<i>Men Wales</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<i>Men Northern Ireland</i>	<i>278</i>	<i>269</i>	<i>300</i>	<i>254</i>	<i>209</i>	<i>142</i>	<i>95</i>	<i>1547</i>
<i>Bases (unweighted):</i>								
<i>Men Scotland</i>	<i>246</i>	<i>317</i>	<i>460</i>	<i>535</i>	<i>525</i>	<i>453</i>	<i>304</i>	<i>2840</i>
<i>Men England</i>	<i>773</i>	<i>954</i>	<i>1221</i>	<i>1100</i>	<i>1183</i>	<i>875</i>	<i>648</i>	<i>6754</i>
<i>Men Wales</i>	<i>714</i>	<i>670</i>	<i>966</i>	<i>1000</i>	<i>1177</i>	<i>945</i>	<i>647</i>	<i>6119</i>
<i>Men Northern Ireland</i>	<i>153</i>	<i>277</i>	<i>344</i>	<i>305</i>	<i>275</i>	<i>237</i>	<i>152</i>	<i>1743</i>

*Continued...*

**Table 1.2 - Continued**

*Aged 16 and over*

*S, E & W 2008; NI 2005/6*

Long-term conditions and limiting long-term conditions	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Women</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
No long-term conditions	82	71	70	58	45	34	29	58
Limiting long-term conditions	8	17	19	25	39	44	54	28
Non-limiting long-term conditions	10	11	11	17	16	22	17	15
<i>Total with conditions</i>	18	29	30	42	55	66	71	42
<b>England</b>								
No long-term conditions	77	71	67	56	44	32	25	56
Limiting long-term conditions	12	13	16	25	33	41	54	25
Non-limiting long-term conditions	12	16	17	19	23	27	21	19
<i>Total with conditions</i>	23	29	33	44	56	68	75	44
<b>Wales<sup>a</sup></b>								
No long-term conditions	-	-	-	-	-	-	-	-
Limiting long-term conditions	7	12	14	26	39	48	68	29
Non-limiting long-term conditions	-	-	-	-	-	-	-	-
<i>Total with conditions</i>	-	-	-	-	-	-	-	-
<b>Northern Ireland</b>								
No long-term conditions	86	78	66	55	45	35	29	60
Limiting long-term conditions	10	13	24	29	41	48	58	28
Non-limiting long-term conditions	5	9	10	16	15	17	13	12
<i>Total with conditions</i>	14	22	34	44	55	65	70	40
<i>Bases (weighted):</i>								
<i>Women Scotland</i>	445	487	616	591	504	384	350	3377
<i>Women England</i>	1091	1214	1433	1233	1123	800	785	7678
<i>Women Wales<sup>b</sup></i>	-	-	-	-	-	-	-	-
<i>Women Northern Ireland</i>	279	291	331	272	233	175	172	1753
<i>Bases (unweighted):</i>								
<i>Women Scotland</i>	334	451	648	632	632	516	410	3623
<i>Women England</i>	920	1217	1514	1374	1366	1000	946	8337
<i>Women Wales</i>	793	838	1188	1126	1334	1029	886	7194
<i>Women Northern Ireland</i>	253	428	500	417	334	312	251	2495

a Long-term conditions are measured in different ways in the four countries, only the directly comparable figures have been presented here (see Appendix A for details).

b Weighted bases are not included in the published Welsh Health Survey tables.

**Table 1.3 GHQ12 scores, Scotland, England, Northern Ireland, by age and sex**

*Aged 16 and over*

*S & E 2008; NI 2005/6*

GHQ12 score <sup>a</sup>	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Scotland</b>								
0	62	58	63	64	71	69	69	64
1-3	26	29	24	21	17	20	25	23
4 or more	12	13	13	15	12	11	7	12
<b>England</b>								
0	65	63	66	67	70	71	60	66
1-3	25	27	22	21	18	20	25	23
4 or more	10	10	12	12	12	9	14	11
<b>Northern Ireland</b>								
0	63	67	62	57	51	59	59	60
1-3	24	18	22	25	29	27	26	24
4 or more	13	15	16	18	20	15	15	16
<b>Women</b>								
<b>Scotland</b>								
0	53	54	60	54	65	64	50	58
1-3	27	29	23	25	18	24	34	25
4 or more	20	16	17	21	17	11	16	17
<b>England</b>								
0	53	58	63	60	65	67	56	60
1-3	32	27	23	21	20	20	26	24
4 or more	15	15	14	19	15	13	17	15
<b>Northern Ireland</b>								
0	53	54	50	49	48	57	52	51
1-3	29	26	28	27	26	25	32	27
4 or more	18	21	23	24	26	18	16	21
<i>Bases (weighted):</i>								
<i>Men Scotland</i>	<i>431</i>	<i>438</i>	<i>523</i>	<i>510</i>	<i>434</i>	<i>293</i>	<i>189</i>	<i>2819</i>
<i>Men England</i>	<i>1062</i>	<i>1115</i>	<i>1311</i>	<i>1136</i>	<i>1033</i>	<i>691</i>	<i>502</i>	<i>6850</i>
<i>Men Northern Ireland</i>	<i>275</i>	<i>266</i>	<i>294</i>	<i>245</i>	<i>205</i>	<i>134</i>	<i>86</i>	<i>1505</i>
<i>Women Scotland</i>	<i>407</i>	<i>453</i>	<i>578</i>	<i>549</i>	<i>461</i>	<i>352</i>	<i>279</i>	<i>3079</i>
<i>Women England</i>	<i>1026</i>	<i>1159</i>	<i>1364</i>	<i>1179</i>	<i>1074</i>	<i>755</i>	<i>703</i>	<i>7260</i>
<i>Women Northern Ireland</i>	<i>274</i>	<i>288</i>	<i>323</i>	<i>268</i>	<i>226</i>	<i>165</i>	<i>159</i>	<i>1702</i>
<i>Bases (unweighted):</i>								
<i>Men Scotland</i>	<i>227</i>	<i>288</i>	<i>428</i>	<i>485</i>	<i>473</i>	<i>408</i>	<i>260</i>	<i>2569</i>
<i>Men England</i>	<i>722</i>	<i>881</i>	<i>1133</i>	<i>1031</i>	<i>1125</i>	<i>835</i>	<i>604</i>	<i>6331</i>
<i>Men Northern Ireland</i>	<i>151</i>	<i>274</i>	<i>337</i>	<i>295</i>	<i>269</i>	<i>223</i>	<i>139</i>	<i>1688</i>
<i>Women Scotland</i>	<i>304</i>	<i>419</i>	<i>606</i>	<i>589</i>	<i>579</i>	<i>475</i>	<i>329</i>	<i>3301</i>
<i>Women England</i>	<i>865</i>	<i>1166</i>	<i>1441</i>	<i>1317</i>	<i>1308</i>	<i>944</i>	<i>849</i>	<i>7890</i>
<i>Women Northern Ireland</i>	<i>248</i>	<i>422</i>	<i>489</i>	<i>410</i>	<i>324</i>	<i>294</i>	<i>232</i>	<i>2419</i>

<sup>a</sup> Scores range from 0 to 12

Note: No data for Wales is shown because the Welsh Health Survey uses the SF-36 questionnaire rather than GHQ12.

**Table 1.4 Prevalence of any CVD, any CVD or diabetes,<sup>a</sup> IHD,<sup>b</sup> IHD or stroke, Scotland, England and Northern Ireland, by age and sex**

*Aged 16 and over*

*S 2008; E 2006; NI 2005/6*

Any CVD/any CVD or diabetes/IHD/IHD or stroke	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Men</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
Any CVD	4.9	5.9	6.8	10.3	22.0	35.8	45.0	15.1
Any CVD or diabetes	5.7	6.0	7.3	13.3	29.1	42.2	52.5	18.2
IHD	-	-	0.5	3.0	13.1	21.9	26.8	6.9
IHD or stroke	-	-	1.8	3.8	15.8	25.9	35.9	8.7
<b>England</b>								
Any CVD	3.2	4.7	5.6	10.9	18.5	34.1	44.4	13.6
Any CVD or diabetes	4.0	5.8	7.9	15.1	23.6	43.7	50.4	17.1
IHD	0.1	0.2	0.6	3.6	10.6	20.8	28.6	6.5
IHD or stroke	0.1	0.2	1.0	4.6	12.5	25.1	37.1	8.1
<b>Northern Ireland</b>								
Any CVD	4.4	3.9	4.7	12.5	24.4	36.3	43.6	13.7
Any CVD or diabetes	4.4	3.9	5.9	15.5	29.1	40.7	53.1	16.1
IHD	0.7	0.9	0.5	7.3	17.4	26.7	31.7	8.3
IHD or stroke	0.7	0.9	0.5	8.3	19.2	28.8	37.1	9.3
<b>Women</b>								
<b>Scotland</b>								
Any CVD	6.4	5.7	8.8	12.9	18.9	30.9	35.5	15.5
Any CVD or diabetes	8.1	7.0	10.8	15.2	22.4	34.9	40.8	18.2
IHD	-	-	1.1	2.4	7.4	15.9	20.2	5.6
IHD or stroke	0.0	-	1.6	3.9	9.7	20.1	26.7	7.5
<b>England</b>								
Any CVD	4.5	5.7	7.8	10.3	15.2	21.2	36.9	13.0
Any CVD or diabetes	5.5	6.6	8.7	13.1	20.0	28.2	42.9	16.0
IHD	0.1	0.1	0.3	1.3	3.5	10.0	19.3	4.0
IHD or stroke	0.3	0.3	0.6	2.1	5.0	12.6	27.9	5.6
<b>Northern Ireland</b>								
Any CVD	2.1	5.1	7.1	10.0	14.8	27.8	40.3	12.8
Any CVD or diabetes	2.6	6.4	7.9	11.1	18.0	35.2	44.4	14.9
IHD	-	0.4	0.2	3.9	6.6	17.9	28.9	6.2
IHD or stroke	-	0.6	0.6	4.9	8.6	19.2	30.6	7.0

*Continued...*

**Table 1.4 - Continued***Aged 16 and over**S 2008; E 2006; NI 2005/6*

<b>Any CVD/any CVD or diabetes/IHD/IHD or stroke</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 Scotland</i>	464	481	564	554	480	327	217	3086
<i>Men England</i>	1041	1129	1354	1123	1015	694	495	6852
<i>Men Northern Ireland</i>	278	270	302	254	210	142	95	1550
<i>Women Scotland</i>	444	486	616	591	503	383	350	3372
<i>Women England</i>	1014	1160	1378	1138	1048	767	795	7299
<i>Women Northern Ireland</i>	280	291	331	272	234	175	172	1755
<i>Bases (unweighted):</i>								
<i>Men Scotland</i>	246	317	462	534	525	453	303	2840
<i>Men England</i>	650	862	1182	1050	1126	437	316	5623
<i>Men Northern Ireland</i>	153	278	346	305	276	237	152	1747
<i>Women Scotland</i>	333	450	648	632	631	514	410	3618
<i>Women England</i>	794	1148	1493	1276	1267	469	469	6916
<i>Women Northern Ireland</i>	254	428	501	417	335	312	251	2498

a Types 1 and 2 combined

b Ischaemic heart disease, reported as doctor-diagnosed heart attack or angina

Note: No data is presented for Wales because the Welsh Health Survey's method of measuring health conditions is not comparable with the Scottish, English and Northern Irish surveys.







Alcohol Consumption  
and Smoking

Chapter 2

## **2 ALCOHOL CONSUMPTION AND SMOKING**

### **2.1 INTRODUCTION**

Smoking and drinking are major modifiable risk factors for increased risk of mortality and chronic disease. As set out below, both behaviours have recently been the subject of major pieces of legislation in all parts of the UK and continue to be areas of major public health concern. This chapter discusses alcohol consumption in Scotland and England, and smoking prevalence in Scotland, England, Wales and Northern Ireland.

### **2.2 ALCOHOL CONSUMPTION**

#### **2.2.1 Policy context**

Most adults in Britain drink alcohol, at least occasionally. However, in recent years, concern has been growing about the damage caused by excessive drinking to individuals, communities and society as a whole. Misuse of alcohol contributes to a wide range of health problems, including high blood pressure, chronic liver disease and cirrhosis, pancreatitis, some cancers, mental ill-health, and accidents, as well as social problems such as antisocial behaviour including violent crime. Some of the alcohol-related adverse health outcomes, such as alcoholic liver disease, are associated most with sustained heavy drinking,<sup>1</sup> whereas some, such as injuries and cardiovascular events, may also be linked with excessive drinking on one or more occasion.<sup>2</sup>

Public health advice about alcohol consumption is based on sensible drinking guidelines.<sup>3</sup> The UK-wide recommended sensible drinking guideline is that women should not regularly drink more than 2-3 units per day and men should not regularly drink more than 3-4 units per day. In addition, people are advised to aim to have at least two alcohol free days per week. Men who regularly drink more than eight units a day (or 50 units a week) and women who regularly drink more than six units a day (or 35 units a week) are considered to be at particular risk of harm.<sup>4</sup> Pregnant women are advised to avoid alcohol altogether.<sup>5</sup> There is no standard definition of 'binge drinking' in the UK; however the Scottish, English and Welsh surveys use the binge drinking definitions which are also employed in the General Lifestyle Survey. These are: more than 6 units for women and more than 8 units for men (i.e. more than twice the daily maximum units).<sup>6</sup>

In the 1980s and 1990s, the sensible drinking message was coupled with the advice that one unit was equivalent to a half pint of ordinary beer or lager, a small (125ml) glass of wine or a single measure of spirits. Following concern that increases in both the typical strengths and serving size of alcohol products were resulting in systematic underreporting of unit consumption in all surveys, new conversion factors were published by the Office for National Statistics in 2007.<sup>7</sup> These new conversion factors were used in the Scottish, English and Welsh surveys in 2008.<sup>8</sup>

Estimates of alcohol consumption can be based on sales data or on personal reports. Neither measure is perfect, for example not all alcohol that is purchased is consumed, some will be consumed abroad, and not all consumption is reported. However, there is increasing recognition that data from multiple sources are essential to help build up as complete a picture as possible of alcohol consumption. Figures based on sales data from the alcohol industry in Scotland in 2009 estimated that 11.9 litres of pure alcohol were sold per person over the age of 16 in Scotland.<sup>9</sup> The estimate for England and Wales was considerably lower (9.6 litres per person). In unit terms the figures for Scotland equate to 1,190 units a year for every adult aged 16 and over, equivalent to an average weekly consumption of 22.9 units a week for all adults (the equivalent amount in England and Wales was 18.4 units). Consumption at this level exceeds the recommended weekly intake for men, which is particularly concerning given that not all adults drink alcohol and some do so only occasionally. It is therefore unsurprising that Scotland's death rates from chronic liver disease and cirrhosis are around twice as high as those in England and Wales, and (until very recently) were increasing at a time when the rates in many countries were declining.<sup>10,11</sup> In addition, the alcohol related death rate for women in Scotland exceeds the comparable rate for men in England.<sup>12</sup>

The cost of alcohol misuse to Scottish society in 2007 was estimated at around £3.56 billion.<sup>13</sup> This figure includes costs to NHS Scotland of £268 million. Concerns about excessive drinking in Scotland were outlined in the Scottish Executive's 2002 "Plan for Action on Alcohol",<sup>14</sup> its update in 2007,<sup>15</sup> and the Scottish Government's 2009 Framework for Action.<sup>11</sup> One of the Scottish Government's National Performance Framework national indicators,<sup>16</sup> relates directly to alcohol:

*Reduce alcohol related hospital admissions by 2011*

The Framework for Action includes around 40 initiatives designed to tackle Scotland's damaging relationship with alcohol. As well as a national programme of alcohol brief interventions and increased support for alcohol treatment services, the Framework includes a range of measures aimed at changing attitudes to alcohol. New regulatory measures, including limiting alcohol promotions in licensed premises, were introduced through the Licensing (Scotland) Act 2005, which came into force in September 2009. The Alcohol Etc. (Scotland) Bill, currently being considered by the Scottish Parliament, outlines a number of provisions aimed at reducing alcohol-related harm. These include further restrictions on off-sale promotions, a requirement for licensees to operate age verification policies, an enabling power for the introduction of a social responsibility levy and, of most controversy to date, minimum pricing for alcohol.

The annual cost to the NHS in England of alcohol misuse has been estimated as £2.7 billion in 2006/7 prices.<sup>17</sup> Hospital admissions for conditions specifically related to alcohol, and deaths attributed to

alcohol, increased substantially between 1991 and 2007.<sup>18</sup> Following a wide ranging review of the current extent and nature of alcohol-related harms, the then government published its “Alcohol Harm Reduction Strategy for England” in 2004, with a further report, “Safe. Sensible. Social. The next steps in the national alcohol strategy” in 2007.<sup>19,20,21</sup> The 2004 strategy included a number of actions, such as making the sensible drinking message easier for people to understand and apply, targeting messages at those most at risk, providing better information for consumers, and improving alcohol education in schools. The 2007 strategy update claimed some success for the actions identified in 2004, but acknowledged that more needed to be done. Among new initiatives proposed were the development of informal sources of support for people who wanted to drink less, the provision of authoritative guidance about what is safe for young people to drink, local alcohol strategies and a public consultation on alcohol pricing and promotion.<sup>22,23</sup>

Minimum pricing for units of alcohol became the focus of public debate in England when the Chief Medical Officer’s 2008 annual report highlighted the impact of what he called ‘passive drinking’ – how one person’s drinking affects others.<sup>24</sup> The CMO recommended a minimum price of 50 pence per unit, based on research suggesting this would have relatively little impact on moderate drinkers but would significantly reduce social harms caused by heavy drinking.<sup>23,24</sup> The coalition government formed in May 2010 has not yet developed formal policy on alcohol pricing.

## **2.2.2 Data collection issues**

The known weaknesses typically associated with surveys such as social desirability biases and recall errors on the part of respondents may be especially problematic for alcohol consumption. As described in the Introduction to this report, the health surveys in Scotland and England use a face to face questionnaire with only minor differences between questions<sup>25</sup> (see Appendix 1 for full details). In contrast, the Welsh Health Survey is a paper self-completion. As the reporting of alcohol consumption has been found to be influenced by the mode of questionnaire,<sup>26</sup> comparisons have therefore been restricted to Scotland and England.

## **2.2.3 Consumption in Scotland and England**

The proportion of men in Scotland (31%) and England (29%) who had not had an alcoholic drink in the last week was very similar.

A significantly lower proportion of men in Scotland (25%) drank alcohol within sensible drinking guidelines – i.e. up to 4 units - on their heaviest drinking day in the last week than in England (30%). In addition, there were marginally significant differences between the proportion of men in Scotland and England who had drunk more than 4 units of alcohol on

their heaviest drinking day (44% versus 41%). Though it should be noted that the confidence interval around the difference between daily unit consumption in Scotland and England indicates that this difference could be very small indeed.

Mean daily unit consumption on the heaviest drinking day was also higher among men in Scotland (6.2 units) than men in England (4.3 units), and considerably exceeded the recommended daily maximum for men (3 to 4 units), while the consumption level in England only did so slightly.

**Table 2.1, Table A1**

As with men, the proportion of women in Scotland and England who had not had an alcoholic drink in the last week was similar (42% and 43%, respectively).

Scotland had a significantly lower proportion of women (21%) drinking alcohol within sensible drinking guidelines – i.e. up to 3 units - on their heaviest drinking day in the last week than England (26%). The higher proportion of women in Scotland than England consuming more than 3 units was also statistically significant (36% versus 32%), and the difference for more than 6 units (18% versus 15%) was marginally significant.

Women in Scotland drank a significantly higher number of units of alcohol on their heaviest drinking day (3.5) than women in England (2.2 units per day). Unlike the equivalent finding for men, mean daily consumption for women in Scotland exceeded the recommended daily maximum units (2 to 3 units on heaviest day for women), but did not in England.

**Table 2.1**

The major changes introduced in 2008 to the methods of calculating unit consumption levels discussed above mean that the overall rates of drinking prior to that are not directly comparable over time. However, the nature of the patterns between the countries should not be affected by this. The findings in 2003 and 1998 both showed similar consumption levels for men in Scotland and England while in 1995 men in Scotland drank more. In contrast, while the 2003 findings for women confirm those presented above (with women in Scotland drinking more), in both 1998 and 1995 women's drinking was lower in Scotland than England.

## **2.3 SMOKING**

### **2.3.1 Policy context**

Smoking is acknowledged as the greatest contributor to inequalities in health and mortality in the UK.<sup>27</sup> The World Health Organisation (WHO) Tobacco Atlas estimates that in developed countries, smoking cigarettes kills between one third to one half of lifetime users.<sup>28</sup> In the United Kingdom, smoking is recognised to be the greatest single cause of preventable illness and premature death. Many of these smoking-related deaths are avoidable deaths, with the average years of life

gained by smokers who quit ranging from 10 years for those stopping at 30 to three years for those stopping at 60.<sup>29</sup> It is estimated that eradication of smoking would eliminate one-third of cancer deaths and one-sixth of deaths from other causes, including cardiovascular and chronic respiratory diseases.<sup>30</sup>

Action to reduce the prevalence of smoking has not been implemented uniformly across the UK, though it is mainly the timing rather than the specific policy that has varied. For example, the minimum age for the purchase of tobacco was raised from 16 to 18 in Scotland, England and Wales on 1 October 2007, and one year later in Northern Ireland. In contrast, health warnings with stark images (rather than just wording) were added to cigarette packets across the UK in October 2008. More recently, a ban on the sale of cigarettes through vending machines, and new restrictions on the promotion of cigarettes within shops, have followed similar legislative and implementation timetables throughout the UK<sup>31,32</sup> (though these measures are currently the subject of legal challenges in the English and Scottish courts).

The most notable variation in recent policy implementation was the smoke-free legislation introduced in Scotland in March 2006, Wales and Northern Ireland in April 2007, and England in July 2007. The impetus to introduce the ban in Scotland first came in part from the realisation that smoking posed a greater threat to public health in Scotland than elsewhere in the UK. Approximately 13,500 people are estimated to die every year from smoking-related illness in Scotland.<sup>33</sup> In addition, the financial burden of smoking on Scotland's economy as a whole has been estimated at £837 million per year, including the costs associated with treating ill-health, lost employee productivity and reduced consumer spending as a consequence of early death.<sup>34</sup> Smoking levels and related mortality are strongly socially patterned, and are highest among more socially disadvantaged groups.<sup>35</sup> Consequently, reducing smoking-related harm is a major component of the Scottish Government's agenda for improving health and reducing inequalities.

In 2008 the Scottish Government published its Action Plan *Scotland's Future is Smoke-Free*.<sup>36</sup> This document included a number of actions that would be undertaken in the coming years, and reported that an additional £9m over the 3 years 2008/09 to 2010/11 would support the actions outlined in the Plan, bringing the total dedicated resources for tobacco control to £42m over the same period. These various actions are intended to support the National Performance Framework national indicator<sup>16</sup> on smoking:

*Reduce the percentage of the adult population who smoke to 22% by 2010*

Figures from the report *Statistics on Smoking: England 2009*<sup>37</sup> showed that in England in 2008 around 83,900 deaths among adults aged 35 and over were estimated to be caused by smoking, accounting for 23% of deaths in men and 14% of deaths in women in this age group. These

included around 37,700 deaths from cancer, 23,200 from respiratory diseases, 21,600 from circulatory diseases and 1,400 from diseases of the digestive system. This report also estimates that around 5% (440,900) of all hospital admissions among adults aged 35 and over in England were attributable to smoking.

The previous UK government set a target to reduce the rate of smoking among adults in England to 21% or less by 2010, with a reduction in prevalence among routine and manual groups to 26% or less. This commitment to reduce smoking prevalence was emphasised in the revised PSA targets published in 2007.<sup>38</sup> The General Household Survey (now the General Lifestyle Survey), which monitors progress towards these PSA targets, showed that smoking prevalence in England had already fallen to 21% by 2007.

Furthermore, as in Scotland, it is widely recognised that levels of smoking vary between different socioeconomic groups in England. The 1998 white paper, "Smoking Kills", stated that reductions in levels of smoking in England should occur equitably among manual and non-manual groups.<sup>39</sup> In 2004, the then government set out its strategy for England to tackle smoking and its effects on other people in the white paper "Choosing Health: Making healthy choices easier".<sup>40</sup> Since then a number of proposed initiatives have been implemented, including the introduction of smoke-free legislation and the UK-wide measures mentioned above.

It is estimated that there are some 6,000 smoking-related deaths in Wales each year. Since 1999, the Welsh Assembly Government has implemented a comprehensive tobacco control programme with three main aims: discouraging children and young people from starting to smoke; encouraging adolescents and adults to quit; and reducing exposure to environmental tobacco smoke.<sup>41</sup>

Estimates in 2002 suggested that there were about 350,000 smokers aged 16 and over in Northern Ireland.<sup>42</sup> The same report noted that although smoking prevalence declined between 1983 and 2001, this was confined to men (a reduction from 39% to 26% compared with a stable rate in women of 29% and 28% in both years). Furthermore, smoking among women aged 16-19 increased in this period from 19% to 27%. Tobacco is responsible for about 18-20% of all deaths, claiming between 2,700 and 3,000 lives in Northern Ireland each year. The overall cost to the economy (in 2002) was estimated to be £3.1 billion.

### **2.3.2 Smoking prevalence**

Some minor differences in the wording of the questions about smoking are outlined in Appendix 1. The key point to mention is that the figures for Scotland, England, and Northern Ireland relate specifically to cigarette smoking whereas those in Wales cover all smoking so include cigar and pipe smokers as well. Also note that the HSE reports combine people who have never smoked at all with those who only smoked

occasionally; the data in this chapter combines ex-regular and ex-occasional smokers and reports the prevalence of never smoking on its own.

All self-reported estimates of smoking can be subject to mis-reporting but these can be validated using objective measures of tobacco consumption. The validation carried out in Scotland and England has shown a small tendency for younger smokers to conceal their behaviour.<sup>43</sup> Although the evidence outlined in the Introduction suggested that self-reported alcohol consumption levels are affected by questionnaire mode, reports of current smoking behaviour were not. We have therefore concluded that the smoking data collected in Wales is sufficiently comparable to be included in this discussion.

The prevalence of current smoking was significantly higher among men in Scotland (27%) than in England (24%). It was also higher than among men in Wales and Northern Ireland (25% in both countries), but this difference was not statistically significant.

The proportion of men who had never smoked was similar in Scotland (45%), Wales (45%) and England (44%). In contrast, it was significantly lower in Northern Ireland (38%).

The difference between the prevalence of current smoking among women in Scotland (25%) and England (20%) was statistically significant, and was marginally significant between Scotland and Wales (22%). In contrast, the rate in Northern Ireland (26%) was very similar to Scotland. The rates of never having smoked followed the same pattern: 48% of women in both Scotland and Northern Ireland had never smoked, compared with significantly higher rates in England (53%) and Wales (52%).

**Table 2.2, Table A1**

Smoking rates have been found to be consistently higher in Scotland than England, for both men and women, on each occasion that comparisons have been drawn (in 1995, 1998 and 2003). The confidence interval of the difference found in 2008 between men in Scotland and England suggests that the difference could be very small, however the finding for women was more conclusive. This is also consistent with the trend over time data that suggest the difference between Scotland and England's smoking rates is more pronounced among women. Action to further reduce the rate of smoking among women in Scotland would therefore go some way to close the gap between the countries.



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ANNEX B - ALCOHOL-RELATED HARM IN SCOTLAND  
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**Table 2.1 Estimated alcohol consumption level on heaviest drinking day in past week, Scotland and England, by age and sex**

*Aged 16 and over*

*S & E 2008*

Alcohol units per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Men</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
Did not drink in last week	37	27	30	25	29	32	44	31
Up to (& including) 4 units	13	20	22	25	29	39	43	25
Consumed over 4 units	49	53	48	50	42	29	14	44
Consumed over 8 units	37	37	30	31	21	11	2	27
Mean units	8.6	7.8	7.1	6.7	5.0	3.4	1.8	6.2
Standard error of the mean	0.77	0.53	0.49	0.37	0.28	0.21	0.15	0.19
<b>England</b>								
Did not drink in last week	41	28	27	24	24	32	35	29
Up to (& including) 4 units	16	25	26	29	37	39	50	30
Consumed over 4 units	43	48	47	46	39	30	14	41
Consumed over 8 units	32	33	30	28	18	10	3	25
Mean units	6.3	7.3	6.4	6.0	4.6	3.5	2.1	4.3
Standard error of the mean	0.53	0.32	0.24	0.22	0.15	0.16	0.10	0.11
<i>Bases (weighted):</i>								
<i>Men Scotland</i>	403	476	562	552	478	326	217	3015
<i>Men England</i>	1137	1213	1416	1211	1087	726	540	9152
<i>Bases (unweighted):</i>								
<i>Men Scotland</i>	221	313	458	532	524	450	303	2801
<i>Men England</i>	774	955	1222	1101	1184	875	649	8485

*Continued...*

**Table 2.1 - Continued**

*Aged 16 and over*

*S & E 2008*

Alcohol units per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Women</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
Did not drink in last week	38	39	38	36	40	51	66	42
Up to (& including) 3 units	8	15	18	23	27	34	28	21
Consumed over 3 units	54	47	45	41	34	15	6	36
Consumed over 6 units	41	27	22	17	11	2	1	18
Mean units	7.1	4.6	3.8	3.4	2.7	1.4	0.7	3.5
Standard error of the mean	0.84	0.30	0.18	0.18	0.13	0.10	0.07	0.14
<b>England</b>								
Did not drink in last week	49	43	37	34	36	53	58	43
Up to (& including) 3 units	14	20	24	26	31	33	35	26
Consumed over 3 units	37	36	39	40	33	14	7	32
Consumed over 6 units	27	21	19	16	12	3	1	15
Mean units	3.6	3.6	3.6	3.4	2.8	1.3	1.0	2.2
Standard error of the mean	0.26	0.15	0.13	0.11	0.10	0.07	0.06	0.05
<i>Bases (weighted):</i>								
<i>Women Scotland</i>	400	486	616	586	502	382	348	3320
<i>Women England</i>	1091	1216	1433	1233	1124	800	785	9423
<i>Bases (unweighted):</i>								
<i>Women Scotland</i>	303	450	648	627	630	513	408	3579
<i>Women England</i>	920	1220	1514	1374	1367	1000	947	10090

Note: No data is presented for Wales or Northern Ireland because the method of measuring alcohol consumption used in those two countries is not comparable with the Scottish and English surveys.

**Table 2.2 Self-reported cigarette<sup>a</sup> smoking status, Scotland, England, Wales and Northern Ireland, by age and sex**

*Aged 16 and over*

*S, E & W 2008; NI 2005/6*

Cigarette smoking status	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Men</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
Never smoked cigarettes	62	44	48	46	38	34	35	45
Used to smoke cigarettes	9	20	21	28	37	49	55	28
Current smoker	28	36	31	26	25	17	10	27
<b>England<sup>b</sup></b>								
Never smoked cigarettes	62	46	47	45	36	33	31	44
Used to smoke cigarettes	11	20	24	32	46	54	63	32
Current smoker	28	34	30	22	18	13	6	24
<b>Wales</b>								
Never smoked	68	46	46	46	35	31	32	45
Used to smoke	7	17	24	29	42	53	58	30
Current smoker	25	37	30	25	22	16	10	25
<b>Northern Ireland</b>								
Never smoked cigarettes	50	37	41	34	33	30	35	38
Used to smoke cigarettes	25	28	29	35	49	55	59	36
Current smoker	23	35	30	30	18	14	5	25
<i>Bases (weighted):</i>								
<i>Men Scotland</i>	444	479	563	554	480	327	218	3066
<i>Men England</i>	1084	1210	1407	1206	1085	725	539	7256
<i>Men Wales<sup>c</sup></i>	-	-	-	-	-	-	-	-
<i>Men Northern Ireland</i>	278	270	302	254	210	142	95	1550
<i>Bases (unweighted):</i>								
<i>Men Scotland</i>	237	316	460	534	525	453	304	2829
<i>Men England</i>	738	952	1215	1097	1182	874	648	6706
<i>Men Wales</i>	704	663	959	988	1162	932	625	6033
<i>Men Northern Ireland</i>	153	278	346	305	276	237	152	1747

*Continued...*

**Table 2.2 - Continued**

*Aged 16 and over*

*S, E & W 2008; NI 2005/6*

Cigarette smoking status	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Women</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
Never smoked cigarettes	59	46	49	45	44	41	50	48
Used to smoke cigarettes	10	25	22	27	33	42	40	28
Current smoker	30	29	29	28	23	17	11	25
<b>England<sup>b</sup></b>								
Never smoked cigarettes	63	53	50	53	48	50	54	53
Used to smoke cigarettes	13	23	25	27	36	37	38	28
Current smoker	25	25	25	20	16	13	8	20
<b>Wales</b>								
Never smoked	61	48	50	52	47	53	56	52
Used to smoke	12	23	22	23	33	34	35	25
Current smoker	27	30	28	25	21	13	9	22
<b>Northern Ireland</b>								
Never smoked cigarettes	49	42	47	44	47	56	64	48
Used to smoke cigarettes	20	24	23	24	28	27	27	25
Current smoker	31	34	29	31	24	16	8	26
<i>Bases (weighted):</i>								
<i>Women Scotland</i>	426	487	616	586	502	382	348	3348
<i>Women England</i>	1047	1212	1431	1233	1123	795	785	7626
<i>Women Wales<sup>c</sup></i>	-	-	-	-	-	-	-	-
<i>Women Northern Ireland</i>	280	291	331	272	234	175	172	1755
<i>Bases (unweighted):</i>								
<i>Women Scotland</i>	321	451	648	628	631	513	408	3600
<i>Women England</i>	883	1217	1512	1374	1366	994	946	8292
<i>Women Wales</i>	779	831	1181	1122	1322	1010	852	7097
<i>Women Northern Ireland</i>	254	428	501	417	335	312	251	2498

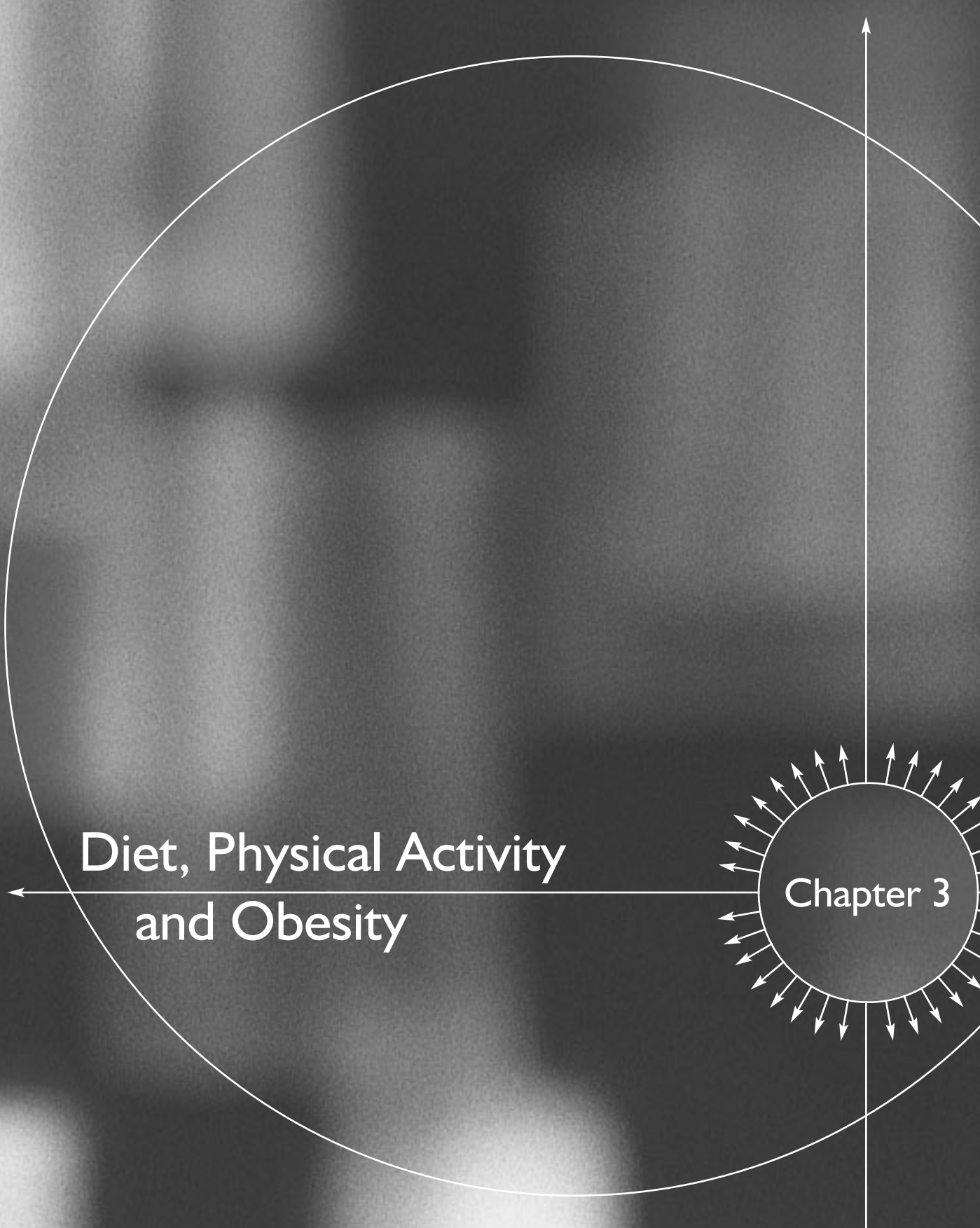
a The Welsh Health Survey asks about smoking, the other three countries ask specifically about cigarette smoking.

b The HSE 2008 report Table 11.1 presents figures for regular current and ex-cigarette smoking, the figures in this table are for all smoking (regular or occasional), so they differ to those in the HSE report. See Appendix A for further details.

c Weighted bases are not included in the published Welsh Health Survey tables.







Diet, Physical Activity  
and Obesity

Chapter 3

## 3 DIET, PHYSICAL ACTIVITY AND OBESITY

### 3.1 INTRODUCTION

This chapter presents findings for three important, and related, risk factors for poor health. Comparable figures exist for Scotland and England for physical activity and fruit and vegetable consumption.<sup>1</sup> In addition, Northern Ireland also has comparable height and weight data from which the body mass index (BMI) can be calculated. The Welsh Health Survey includes measures of all these aspects, however its data collection methods are very different (for example, height and weight is self-reported rather than measured directly). Because of these differences, Welsh figures are not reported in this chapter.

Physical inactivity, poor diet and obesity are all significant individual risk factors for numerous chronic diseases and mortality. For example, physical inactivity is associated with ischaemic heart disease,<sup>2</sup> diabetes,<sup>3</sup> osteoporosis,<sup>4</sup> and certain types of cancer.<sup>5,6</sup> Obesity is associated with other serious chronic diseases such as hyperlipidaemia (high levels of fats in the blood that can lead to narrowing and blockages of blood vessels), which is a major risk factor for cardiovascular disease<sup>7</sup> and also with cancer, disability, reduced quality of life, and can lead to premature death.<sup>8,9,10,11</sup> Obesity has also been shown to be associated with, but not necessarily a direct cause of, respiratory conditions, sleep disturbance, infertility and mental ill-health.<sup>12,13</sup> Of the many factors associated with the development of obesity, physical inactivity and poor diet are seen as the biggest causes and the two factors for which the evidence is most robust, hence this chapter addresses all three of these together.<sup>14,15</sup>

The estimated costs to society of the burdens associated with each risk factor run to billions (based on both the direct costs of treatment and lost productivity). For example, it was estimated that the cost of treating food-related ill health in England in 2007 was £7.7 billion;<sup>16</sup> the cost to the NHS in Scotland of obesity and obesity-related illnesses was estimated to be in excess of £175 million in 2007/8.<sup>17</sup>

As noted in the Introduction, the recommendations to eat 5 or more portions of fruit and vegetables a day,<sup>18</sup> and to be moderately physically active for at least 30 minutes on most days a week, apply UK wide. Similarly, the thresholds for classifying people's body mass index (BMI) as underweight, normal, overweight or obese are internationally defined (by the WHO) and are therefore used throughout the UK. The responsibility for these aspects of public health and sport policy are all devolved, so each country has developed its own specific approaches to improving diet, increasing activity and reducing obesity levels. Unlike the actions to tackle smoking and drinking discussed in the previous chapter, most of the actions to address poor diet, inactivity and obesity have been based on a public health promotion approach rather than legislation. While diet, activity and obesity have at times each been treated as distinct areas requiring policy responses, most of the countries now tend to integrate their policies in these three areas. For this reason, the following discussion highlights key policies and actions relating to diet, physical activity, obesity, or any combination of them, for each country in turn.

### 3.1.1 Scotland

Scotland's unhealthy eating habits have been the subject of concern for many years. The Scottish Office's 1993 working party on diet<sup>19</sup> led to the publication of the Scottish Diet Action Plan<sup>20</sup> in 1996. This outlined a series of targets for dietary improvement (the Scottish Dietary Targets). Originally intended to be achieved by 2005, the targets were reviewed in 2003 and a further commitment was made to seeing tangible outcomes by 2010.<sup>21</sup> A number of white papers and strategy documents throughout the years have outlined their support for the Scottish Diet Action Plan.<sup>22,23</sup> More recently, the Scottish Government's overall diet, physical activity and obesity strategy was set out in the 2008 publication *Healthy Eating, Active Living: An action plan to improve diet, increase physical activity and tackle obesity (2008-2011)*.<sup>24</sup> The document contains a commitment to the underlying principles of the original Diet Action Plan, but suggests that a more pragmatic set of longer term dietary goals to replace the existing ones that expire in 2010 should be considered. This was further reflected in the publication of the Government's National Food and Drink policy in 2009 (Recipe for Success).

Scotland's Physical Activity Task Force (PATF) was launched in 2001. The 2003 PATF publication *Let's Make Scotland More Active: A strategy for physical activity*<sup>25</sup> set out the following target, which still stands today:

*50% of adults should be meeting the current recommended levels of physical activity by the year 2022*

A number of the Scottish Government's National Performance Framework national indicators<sup>26</sup> aim to increase physical activity, for example:

*Increase the proportion of journeys to work made by public or active transport*

*Increase the proportion of adults making one or more visits to the outdoors per week*

The *Better Health, Better Care Action Plan (2007)*,<sup>27</sup> the Scottish Government's strategy for a healthier Scotland, also outlines how funding will be allocated to help address obesity through dietary and physical activity programmes. Although they were not in place at the time these data were collected, two key documents were published in 2010 - the new SIGN guidelines for management of obesity,<sup>28</sup> and the Scottish Government obesity route map.<sup>29</sup> This route map set out a commitment to developing a population-wide indicator of healthy weight, and a programme of investment across multiple sectors to reduce high calorie food and drink consumption and sedentary behaviour; increase physical activity in everyday life, including walking and cycling; to instill healthy habits in the early years; and encourage employers to promote their employees' health.

### 3.1.2 England

The public health white paper in England *Choosing Health: Making healthy choices easier*<sup>30</sup> set out the then government's commitments for action on obesity, increasing physical activity and improving diet. Two related action

plans, *Choosing a Better Diet*<sup>31</sup> and *Choosing Activity*<sup>32</sup> specified the steps that needed to be taken at national, regional and local level to combat obesity and improve people's health through better diet and nutrition and increasing physical activity. The 2008 cross-governmental obesity strategy for England highlighted the need for individuals to know more about healthy eating, lifestyle factors, and the causes and consequences of the rise in unhealthy weight.<sup>33</sup>

In 2006, the National Institute for Health and Clinical Excellence (NICE) published guidance about physical activity<sup>34</sup> and about obesity.<sup>35</sup> The first of these highlights the contribution of regular physical activity to promoting the health of communities. The second provides guidance for healthcare organisations (both within and external to the NHS in England) on the prevention, identification, assessment and management of overweight and obesity.

While the recommended level of physical activity for adults is the same in Scotland and England, the 2002 sport strategy *Game Plan*<sup>36</sup> set out more ambitious interim and long-term physical activity targets for England. These were for 50% of adults to meet the recommendations by 2011 and 70% to do so by 2020. These targets were replaced in 2009 by three new ones with a slightly different focus,<sup>37</sup> though the new coalition government elected in May 2010 has yet to publish any detailed strategies on these areas.

### **3.1.3 Northern Ireland**

The 2002 *Investing for Health Strategy* set out the commitment of 'working for a healthier people' in Northern Ireland.<sup>38</sup> The Fit Futures Taskforce was subsequently established in 2004 to examine options for preventing overweight and obesity in children and young people. The Taskforce reported in 2005.<sup>39</sup> It identified six priorities for action which included tackling barriers to eating healthy food, a nutritional signposting system and systematic surveillance of obesity levels, nutrition and activity levels.

A *Fit Futures Implementation Plan* was developed and published for consultation in 2007<sup>40</sup> and a Fit Futures Programme Board was established to oversee its implementation. A cross-sectoral Obesity Prevention Steering Group was established in 2008<sup>41</sup> to oversee the progress against the Fit Futures recommendations, and lead the development of an overarching policy to prevent obesity across the life course. To support the work of the Obesity Prevention Steering Group four policy advisory sub-groups were set up to deal with food and nutrition; physical activity; education, prevention and public information; and data and research.<sup>41</sup>

A Public Health Agency was established in 2009 which now has responsibility for public health initiatives in Northern Ireland. It incorporates the role of the former Health Promotion Agency including, Fit Futures.<sup>42</sup> A 10-year obesity prevention strategic framework has been developed and is due to be launched in 2010.

## **3.2 FRUIT AND VEGETABLE CONSUMPTION**

### **3.2.1 Number of portions consumed in Scotland and England**

The questionnaires in both countries were identical with one small exception that the question about fruit juice in Scotland referred to “pure fruit juice” rather than just “fruit juice”.

Most adults in Scotland and England did not consume enough fruit and vegetables to meet the recommended five portions a day. However, consumption was lower in Scotland than in England for both men and women; all differences between the countries were statistically significant. The mean number of portions consumed per day by men in Scotland was 3.1 compared with 3.5 in England. The corresponding figures for women were 3.4 and 3.8 portions, respectively. The proportion consuming five or more portions was also significantly lower in Scotland than in England. 20% of men in Scotland met the recommendation compared with 25% of men in England. The equivalent figures for women were 24% and 29%, respectively.

Fruit and vegetable consumption was also lower in Scotland than in England in 2003. The 1995 surveys measured weekly rather than daily fruit consumption, this was also found to be lower in Scotland than in England.

**Table 3.1, Table A1**

## **3.3 PHYSICAL ACTIVITY**

### **3.3.1 Data collection**

Self-reported physical activity measures are well known to have limitations.<sup>43</sup> For example, sports and exercise are typically carried out in a planned and organised manner and therefore are relatively easy to recall. However, routine activities such as domestic activity (housework, gardening, etc) and walking or cycling for travel rather than leisure, are more difficult to recall and report. As a result, there are a number of areas where error may be introduced in subjectively measured activities:<sup>44</sup>

Participants may experience difficulty in recalling all activities. This can lead to either under-reporting, if they omit activities, or over reporting, if they include activities beyond the recall period or over estimate their duration or intensity.

The kinds of physical activity included in this report are not limited to participation in sports and structured exercise, but also cover other forms of activity which people may engage in as part of their daily lives, for example walking, housework or a physical job. Full details of the questions asked in Scotland and England are provided in Appendix 1. The questions themselves are comparable, however it should be noted that, for historic reasons, Scotland and England use different methods to convert reported activities into minutes of participation. To make the

estimates comparable the English data has been re-analysed using the Scottish method. Further details of this are given in the Appendix.

### **3.3.2 Proportions meeting the physical activity recommendations in Scotland and England**

People who had participated in 30 minutes or more of at least moderate activity on five or more days a week were classified as meeting the physical activity recommendations. Activities were counted if they lasted at least 10 minutes. The proportion who met the recommendations was the same in both countries: 45% for men and 33% for women.

**Table 3.2**

Before 2008 the physical activity questionnaires in Scotland did not ask about activities under 15 minutes, and in some years the questions in England set a lower limit of 30 minutes. As a result of this, the trend data use a different definition of meeting the recommendations. However, the validity of the difference between the countries would only be affected if the prevalence of participating in short bouts of activity was different. This is unknown, so the following needs to bear this caveat in mind. Previous comparisons of physical activity in Scotland and England have found inconsistent patterns. In 2003 activity levels were higher in Scotland than England, in 1998 they were the same (as they are now), whereas in 1995 activity was lower in Scotland than England.

## **3.4 OVERWEIGHT AND OBESITY**

### **3.4.1 Measuring body mass index (BMI)**

Interviewers took direct measurements of height and weight in all three surveys using the same measurement protocols (details of these can be found in each of their corresponding technical reports).<sup>45,46,47</sup>

The Body Mass Index (BMI), defined as weight (kg)/height (m<sup>2</sup>), is a widely accepted measure that allows for differences in weight due to height. It has been measured in each of the Scottish and English surveys to date, and in the recent Northern Irish surveys. BMI has some limitations because it does not distinguish between mass due to body fat and mass due to muscular physique, nor does it not take account of the distribution of fat.<sup>48,49</sup> However, as these limitations apply equally to all surveys they do not affect the comparability of the estimates presented here.

Based on their BMI, adults were classified as being in one of the following groups:

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

The findings below compare mean BMI, the proportion classified as overweight or obese (BMI of 25 kg/m<sup>2</sup> or more), and the proportion who were obese (BMI of 30 kg/m<sup>2</sup> or more).

### **3.4.2 BMI in Scotland, England and Northern Ireland**

Mean BMI in Scotland was not significantly different to that in England or Northern Ireland for either sex. However, the patterns in the prevalence of overweight including obesity, and obesity were a little more complex. Among men, the prevalence of overweight including obesity (BMI  $\geq 25$ ) was significantly higher in Scotland (68.5%) than in Northern Ireland (64.1%). The difference between men in Scotland and England (65.9%) was not significant. The prevalence of obesity (BMI  $\geq 30$ ) in men in Scotland (26.0%) did not differ significantly to that in England (24.1%) or Northern Ireland (24.4%).

The picture was slightly clearer for women. Overweight including obesity prevalence was 61.8% in Scotland, this was significantly higher than in England (56.9%) and Northern Ireland (54.0%). The prevalence of obesity in women followed a similar pattern, though the difference between Scotland and England was only marginally significant in this instance. 27.5% of women in Scotland were obese compared with 24.9% in England and 23.5% in Northern Ireland. **Table 3.3, Table A1**

Trends over time have not followed a uniform pattern. In 2003, mean BMI was similar in Scotland and England in both men and women. Rates of overweight including obesity, and obesity were also similar for men in both countries. Women in Scotland had higher rates of both overweight including obesity, and obesity, than women in England. The 1998 and 1995 surveys found higher rates of obesity among men in Scotland than England, but rates for women were similar.

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**Table 3.1 Fruit and vegetable consumption, Scotland and England, by age and sex**

*Aged 16 and over*

*S & E 2008*

Portions per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Men</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
None	15	10	13	9	10	7	6	10
Less than 1 portion	4	5	5	5	4	5	5	5
1 portion or more but less than 2	26	22	21	18	16	17	19	20
2 portions or more but less than 3	17	19	20	17	19	17	22	18
3 portions or more but less than 4	16	13	14	17	15	16	17	15
4 portions or more but less than 5	8	11	9	13	13	13	14	11
5 portions or more	14	20	19	20	24	25	18	20
Mean	2.5	3.0	3.1	3.2	3.4	3.4	3.1	3.1
Standard error of the mean	0.17	0.16	0.24	0.11	0.14	0.13	0.13	0.07
Median	2.0	2.3	2.3	3.0	3.0	3.0	2.8	2.7
<b>England</b>								
None	12	7	7	6	5	3	3	7
Less than 1 portion	3	3	3	3	3	3	2	3
1 portion or more but less than 2	20	20	16	16	11	13	14	16
2 portions or more but less than 3	21	18	18	16	17	17	19	18
3 portions or more but less than 4	14	14	17	16	18	20	21	17
4 portions or more but less than 5	12	12	15	17	15	15	18	15
5 portions or more	18	26	23	26	32	30	23	25
Mean	2.9	3.4	3.5	3.6	4.0	4.0	3.6	3.5
Standard error of the mean	0.07	0.07	0.07	0.07	0.08	0.10	0.10	0.03
Median	2.5	3.0	3.0	3.3	3.7	3.7	3.3	3.0
<i>Bases (weighted):</i>								
<i>Men Scotland</i>	464	481	563	555	480	327	218	3087
<i>Men England</i>	1136	1212	1414	1211	1087	726	540	7325
<i>Bases (unweighted):</i>								
<i>Men Scotland</i>	920	1220	1514	1374	1367	1000	947	8342
<i>Men England</i>	246	317	460	535	525	453	304	2840

*Continued...*

**Table 3.1 - Continued**

*Aged 16 and over*

*S & E 2008*

Portions per day	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Women</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
None	9	9	8	7	7	4	4	7
Less than 1 portion	7	3	5	4	3	5	5	5
1 portion or more but less than 2	25	19	15	14	11	14	20	17
2 portions or more but less than 3	17	17	19	16	17	19	23	18
3 portions or more but less than 4	16	14	17	15	17	16	18	16
4 portions or more but less than 5	12	11	14	15	15	16	14	14
5 portions or more	15	26	22	29	29	26	17	24
Mean	2.9	3.3	3.3	3.7	3.8	3.6	3.1	3.4
Standard error of the mean	0.17	0.13	0.10	0.13	0.12	0.12	0.12	0.06
Median	2.2	3.0	3.0	3.3	3.3	3.3	2.8	3.0
<b>England</b>								
None	9	6	6	6	4	2	3	6
Less than 1 portion	4	3	3	2	2	2	4	3
1 portion or more but less than 2	19	14	15	11	11	13	13	14
2 portions or more but less than 3	18	18	16	14	14	17	20	16
3 portions or more but less than 4	17	17	17	17	16	20	19	17
4 portions or more but less than 5	12	13	14	17	15	16	17	15
5 portions or more	21	28	30	33	36	29	24	29
Mean	3.1	3.7	3.8	4.0	4.3	3.9	3.6	3.8
Standard error of the mean	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.03
Median	2.8	3.3	3.3	3.8	4.0	3.7	3.3	3.5
<i>Bases (weighted):</i>								
<i>Women Scotland</i>	444	487	616	591	504	383	350	3375
<i>Women England</i>	1091	1216	1433	1233	1124	800	785	7682
<i>Bases (unweighted):</i>								
<i>Women Scotland</i>	333	451	648	632	632	515	410	3621
<i>Women England</i>	920	1220	1514	1374	1367	1000	947	8342

Note: No data is presented for Wales or Northern Ireland because the methods of measuring fruit and vegetable consumption used in those surveys are not comparable with the Scottish survey.

**Table 3.2 Summary activity levels, Scotland and England,<sup>a</sup> by age and sex**

*Aged 16 and over*

*S & E 2008*

Summary activity levels <sup>b</sup>	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
<b>Men</b>	%	%	%	%	%	%	%	%
<b>Scotland</b>								
Low	13	12	18	27	40	51	66	28
Medium	29	25	29	30	23	27	21	27
High	58	63	53	43	37	21	13	45
<b>England</b>								
Low	13	14	20	23	34	44	66	26
Medium	26	28	29	31	31	34	24	29
High	61	58	52	46	35	22	10	45
<b>Women</b>								
<b>Scotland</b>								
Low	25	21	20	27	35	46	78	33
Medium	33	37	37	36	35	33	17	34
High	42	42	43	37	29	20	4	33
<b>England</b>								
Low	24	22	23	29	34	49	75	34
Medium	33	37	37	35	36	32	18	33
High	42	42	40	36	30	19	7	33
<i>Bases (weighted):</i>								
<i>Men Scotland</i>	464	481	561	555	480	327	218	3085
<i>Men England</i>	1134	1211	1411	1207	1087	725	539	7314
<i>Women Scotland</i>	445	487	615	590	503	383	346	3369
<i>Women England</i>	1090	1216	1432	1230	1124	800	785	7678
<i>Bases (weighted):</i>								
<i>Men Scotland</i>	245	317	459	534	525	453	304	2837
<i>Men England</i>	772	953	1218	1098	1184	874	648	6747
<i>Women Scotland</i>	334	451	647	631	631	515	406	3615
<i>Women England</i>	919	1220	1513	1371	1367	1000	947	8337

a The figures presented here for England include bouts of activity of 10-29 minutes duration. The published figures for England in the 2008 HSE report only counted activities if they were of at least 30 minutes duration. Employment activity and other sports were also classified differently, full details of these differences can be found in Appendix A.

b Low= fewer than 30 minutes of moderate or vigorous activity a week; Medium= 30 minutes or more on 1 to 4 days a week; High= 30 minutes or more on at least 5 days a week (this group represents those who meet the current physical activity target). Activities could be accumulated in bouts of 10 minutes or more.

Note: No data is presented for Wales or Northern Ireland because the methods of measuring physical activity used in those surveys are not comparable with the Scottish survey.

**Table 3.3 Body mass index (BMI), Scotland, England and Northern Ireland, by age and sex**

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

*S & E 2008; NI 2005/6*

BMI (kg/m <sup>2</sup> )	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Men</b>								
<b>Scotland</b>								
Less than 18.5	8.2	1.3	0.8	1.0	0.0	0.9	-	2.0
18.5 to less than 25	57.0	37.4	24.7	21.7	18.2	17.2	24.9	29.6
25 to less than 30	26.9	44.2	44.1	47.0	43.7	45.5	51.6	42.4
30 to less than 40	8.0	16.6	28.5	28.8	34.8	34.6	23.5	24.7
40+	-	0.5	1.8	1.5	3.3	1.8	-	1.4
<i>All 25 and over (overweight, including obese)</i>	34.9	61.3	74.5	77.3	81.8	81.9	75.1	68.5
<i>All 30 and over (obese)</i>	8.0	17.1	30.3	30.3	38.1	36.4	23.5	26.0
Mean	23.9	26.4	28.1	28.2	29.0	28.9	27.7	27.4
Standard error of the mean	0.35	0.25	0.29	0.23	0.26	0.25	0.27	0.12
<b>England</b>								
Less than 18.5	7.4	0.6	0.7	0.2	0.4	0.5	0.4	1.6
18.5 to less than 25	59.8	41.2	26.7	25.3	21.4	16.6	27.5	32.5
25 to less than 30	25.0	40.6	46.5	43.7	44.3	49.9	49.4	41.8
30 to less than 40	7.3	16.6	24.4	30.0	32.2	31.4	22.3	23.0
40+	0.5	1.0	1.8	0.8	1.7	1.6	0.4	1.1
<i>All 25 and over (overweight, including obese)</i>	32.8	58.2	72.6	74.5	78.3	82.9	72.1	65.9
<i>All 30 and over (obese)</i>	7.8	17.6	26.1	30.8	33.9	33.0	22.7	24.1
Mean	23.7	26.5	27.8	28.1	28.5	28.7	27.4	27.2
Standard error of the mean	0.18	0.17	0.14	0.15	0.14	0.17	0.18	0.07
<b>Northern Ireland</b>								
Less than 18.5	2.0	0.9	0.3		0.5		1.6	0.7
18.5 to less than 25	69.3	36.4	28.7	19.9	18.1	22.9	43.7	35.1
25 to less than 30	16.7	39.4	42.5	48.2	52.0	49.6	39.1	39.7
30 to less than 40	10.4	21.0	25.8	30.7	27.6	27.4	15.6	22.7
40+	1.6	2.3	2.8	1.3	1.8			1.7
<i>All 25 and over (overweight, including obese)</i>	28.7	62.8	71.0	80.1	81.4	77.1	54.7	64.1
<i>All 30 and over (obese)</i>	12.0	23.3	28.5	31.9	29.4	27.4	15.6	24.4
Mean	24.3	27.1	28.0	28.5	28.7	27.8	26.1	27.2
Standard error of the mean	0.31	0.34	0.36	0.31	0.56	0.35	0.46	0.15

*Continued...*

**Table 3.3 - Continued**

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

*S & E 2008; NI 2005/6*

BMI (kg/m <sup>2</sup> )	Age							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<b>Women</b>								
<b>Scotland</b>								
Less than 18.5	4.7	4.0	1.0	0.8	0.5	1.0	1.9	1.9
18.5 to less than 25	53.8	46.0	37.8	33.7	23.4	25.9	31.1	36.3
25 to less than 30	23.2	30.9	34.1	36.5	39.1	38.0	39.9	34.3
30 to less than 40	15.4	16.8	23.5	25.2	32.2	32.7	23.9	24.1
40+	2.9	2.3	3.6	3.8	4.7	2.5	3.2	3.4
<i>All 25 and over (overweight, including obese)</i>	41.5	50.0	61.2	65.5	76.0	73.1	67.0	61.8
<i>All 30 and over (obese)</i>	18.3	19.1	27.1	29.0	36.9	35.1	27.1	27.5
Mean	25.3	26.0	27.6	28.0	29.0	28.4	27.6	27.4
Standard error of the mean	0.42	0.30	0.27	0.29	0.28	0.29	0.35	0.13
<b>England</b>								
Less than 18.5	5.4	2.1	1.6	0.7	0.8	0.8	2.4	2.0
18.5 to less than 25	60.3	52.6	42.0	35.3	30.6	27.4	31.9	41.1
25 to less than 30	20.3	26.5	31.2	35.1	37.7	38.5	39.8	32.0
30 to less than 40	12.7	15.9	21.5	25.5	27.9	29.7	24.8	22.1
40+	1.2	2.9	3.7	3.4	3.0	3.6	1.0	2.8
<i>All 25 and over (overweight, including obese)</i>	34.2	45.3	56.4	64.0	68.6	71.8	65.7	56.9
<i>All 30 and over (obese)</i>	13.9	18.8	25.2	28.9	31.0	33.3	25.8	24.9
Mean	24.3	25.8	27.1	27.7	28.0	28.5	27.2	26.9
Standard error of the mean	0.19	0.17	0.17	0.17	0.16	0.18	0.20	0.07
<b>Northern Ireland</b>								
Less than 18.5	8.0	1.6	1.9	0.3	2.1	0.5	3.5	2.7
18.5 to less than 25	59.6	44.3	42.6	39.8	38.5	31.0	38.0	43.4
25 to less than 30	19.0	30.8	28.3	33.4	31.1	42.9	38.7	30.5
30 to less than 40	11.3	18.2	23.4	22.9	23.4	23.5	18.6	20.0
40+	2.1	5.0	3.9	3.7	5.0	2.0	1.3	3.5
<i>All 25 and over (overweight, including obese)</i>	32.4	54.1	55.5	59.9	59.5	68.5	58.5	54.0
<i>All 30 and over (obese)</i>	13.4	23.2	27.2	26.6	28.3	25.5	19.8	23.5
Mean	24.3	27.3	27.0	27.6	27.6	27.9	26.6	26.8
Standard error of the mean	0.45	0.50	0.37	0.42	0.49	0.53	0.53	0.18

*Continued...*

**Table 3.3 - Continued***Aged 16 and over with both valid height and weight measurements**S & E 2008; NI 2005/6*

<b>BMI (kg/m<sup>2</sup>)</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 Scotland</i>	430	432	481	483	412	285	166	2689
<i>Men England</i>	1029	1068	1243	1059	968	610	409	6385
<i>Men Northern Ireland</i>	233	226	246	208	164	104	65	1246
<i>Women Scotland</i>	378	407	536	509	426	322	249	2828
<i>Women England</i>	935	1020	1241	1057	985	663	549	6450
<i>Women Northern Ireland</i>	221	217	266	207	163	117	111	1302
<i>Bases (unweighted):</i>								
<i>Men Scotland</i>	225	281	396	468	452	401	231	2454
<i>Men England</i>	695	848	1071	959	1053	737	490	5853
<i>Men Northern Ireland</i>	129	235	284	248	216	172	104	1388
<i>Women Scotland</i>	281	374	554	550	534	440	286	3019
<i>Women England</i>	787	1026	1309	1176	1196	828	661	6983
<i>Women Northern Ireland</i>	201	320	401	317	230	209	163	1841

Note: No data is presented for Wales because the Welsh Health Survey does not conduct direct height and weight measurements (BMI based on self-reported measures is available in that survey).



**Table A1 Confidence intervals and p values for selected differences between Scotland and England, Wales and Northern Ireland**

*Aged 16 and over*

*S, E & W 2008; NI 2005/6*

	Scotland % / mean	2 <sup>nd</sup> country % / mean	Differ- ence	95% CI of difference	99% CI of difference	P value
<b>Chapter 1</b>						
<b>Men</b>						
Limiting long-term conditions: Scotland Vs Wales	23.3	25.7	2.4	0.2 - 4.6	-0.5 - 5.3	0.031
GHQ12 4+: Scotland Vs Northern Ireland	12.4	16.0	3.6	1.4 - 5.8	0.8 - 6.5	0.001
GHQ12 0: Scotland Vs Northern Ireland	64.4	60.0	4.4	1.2 - 7.6	0.2 - 8.6	0.006
IHD: Scotland Vs Northern Ireland	6.9	8.3	1.4	0.1 - 2.7	-0.3 - 3.1	0.033
<b>Women</b>						
Limiting long-term conditions: Scotland Vs England	27.9	25.4	2.5	0.5 - 4.5	-0.1 - 5.1	0.013
GHQ12 4+: Scotland Vs Northern Ireland	17.1	21.0	3.9	2.0 - 5.9	1.3 - 6.5	<0.001
GHQ12 0: Scotland Vs Northern Ireland	57.7	51.0	6.7	3.9 - 9.5	3.0 - 10.4	<0.001
GHQ12 0: Scotland Vs England	57.7	60.3	2.6	0.3 - 4.9	-0.4 - 5.6	0.025
Any CVD: Scotland Vs England	15.5	13.0	2.5	0.9 - 4.1	0.4 - 4.6	0.003
Any CVD: Scotland Vs Northern Ireland	15.5	12.8	2.7	1.1 - 4.3	0.6 - 4.8	0.001
Any CVD or diabetes: Scotland Vs England	18.2	16.0	2.2	0.5 - 3.9	-0.1 - 4.5	0.012
Any CVD or diabetes: Scotland Vs Northern Ireland	18.2	14.9	3.3	1.6 - 5.0	1.0 - 5.6	<0.001
IHD: Scotland Vs England	5.6	4.0	1.6	0.6 - 2.6	0.3 - 2.9	0.001
IHD or stroke: Scotland Vs England	7.5	5.6	1.9	0.8 - 3.0	0.5 - 3.3	0.001
<b>Chapter 2</b>						
<b>Men</b>						
Consumes >4 units: Scotland Vs England	44.0	41.2	2.8	0.2 - 5.5	-0.7 - 6.3	0.039
Current cigarette smoker: Scotland Vs England	26.8	23.7	3.1	0.7 - 5.5	-0.1 - 6.3	0.012
<b>Women</b>						
Consumes >3 units: Scotland Vs England	36.4	31.6	4.8	1.7 - 7.9	2.4 - 7.2	<0.001
Consumes >6 units: Scotland Vs England	17.8	15.4	2.4	0.5 - 4.3	-0.1 - 4.9	0.013
Current cigarette smoker: Scotland Vs England	24.7	19.9	4.8	2.9 - 6.8	2.2 - 7.4	<0.001
Current cigarette smoker: Scotland Vs Wales	24.7	22.4	2.3	0.3 - 4.3	-0.3 - 4.9	0.026
<b>Chapter 3</b>						
<b>Men</b>						
Consumes ≥5 portions: Scotland Vs England	20.0	25.1	5.1	2.8 - 7.4	2.1 - 8.1	<0.001
Mean portions: Scotland Vs England	3.1	3.5	0.4	0.3 - 0.6	0.2 - 0.6	<0.001
BMI ≥25: Scotland Vs Northern Ireland	68.5	64.1	4.4	1.1 - 7.7	0.1 - 8.7	0.009
<b>Women</b>						
Consumes ≥5 portions: Scotland Vs England	23.8	29.0	5.2	3.1 - 7.3	2.5 - 7.9	<0.001
Mean portions: Scotland Vs England	3.4	3.8	0.4	0.3 - 0.5	0.2 - 0.6	<0.001
BMI ≥25: Scotland Vs England	61.8	56.9	4.9	2.4 - 7.4	1.6 - 8.2	<0.001
BMI ≥30: Scotland Vs England	27.5	24.9	2.6	0.2 - 5.0	-0.6 - 5.8	0.035
BMI ≥25: Scotland Vs Northern Ireland	61.8	54.0	7.8	4.8 - 10.8	3.8 - 11.8	<0.001
BMI 25-<30: Scotland Vs Northern Ireland	34.3	30.5	3.8	1.0 - 6.7	0.1 - 7.6	0.009
BMI ≥30: Scotland Vs Northern Ireland	27.5	23.5	4.0	1.3 - 6.7	0.4 - 7.6	0.004

## APPENDIX A: QUESTIONNAIRE WORDING

This documents sets out the question wording for the data presented in each of the tables in the report. It highlights important differences between the countries in either the wording used or the way in which data are usually presented in the respective countries' reports. For based on very long sections of the questionnaire a summary description of the data collection method is given instead. The full questionnaires are available in each of the countries' Technical Reports.<sup>1,2,3,4</sup>

### Table 1.1 Self-assessed general health, Scotland, England and Northern Ireland

- Scotland, England and Northern Ireland

How is your health in general? Would you say it was ...READ OUT...

- 1 ...very good,
- 2 good,
- 3 fair,
- 4 bad, or
- 5 very bad?

### Table 1.2 Prevalence of long-term conditions, Scotland, England, Wales and Northern Ireland

- Scotland

Do you have a long-standing physical or mental condition or disability that has troubled you for at least 12 months, or that is likely to affect you for at least 12 months?

- 1 Yes
- 2 No

Does (*name of condition*) limit your activities in any way?

- 1 Yes
- 2 No

- England and Northern Ireland

Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time, or that is likely to affect you over a period of time?

- 1 Yes
- 2 No

Does this illness or disability/do any of these illnesses or disabilities limit your activities in any way?

- 1 Yes
- 2 No

- Wales

Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do? (Include problems which are due to old age)

**Table 1.3 GHQ12 scores, Scotland, England, Northern Ireland**

The General Health Questionnaire is a standardised 12 item instrument administered via self-completion. In Scotland and England it is part of the paper self-completion, in Northern Ireland it is a computer-administered self-completion. The question wording, and answer categories, are shown below.

**GENERAL HEALTH OVER THE LAST FEW WEEKS**

**Please read this carefully:**

We should like to know how your health has been in general over **the past few weeks**.

Please answer ALL the questions by ticking the box below the answer which you think most applies to you.

**HAVE YOU RECENTLY:**

		Tick ONE box <sup>189</sup>			
		Better than usual	Same as usual	Less than usual	Much less than usual
<b>Q1</b>	Been able to concentrate on whatever you're doing?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		Tick ONE box <sup>190</sup>			
		Not at all	No more than usual	Rather more than usual	Much more than usual
<b>Q1</b>	Lost much sleep over worry?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		Tick ONE box <sup>191</sup>			
		More so than usual	Same as usual	Less useful than usual	Much less useful
<b>Q3</b>	Felt you were playing a useful part in things?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		Tick ONE box <sup>192</sup>			
		More so than usual	Same as usual	Less so than usual	Much less capable
<b>Q4</b>	Felt capable of making decisions about things?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		Tick ONE box <sup>193</sup>			
		Not at all	No more than usual	Rather more than usual	Much more than usual
<b>Q5</b>	Felt constantly under strain?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		Tick ONE box <sup>194</sup>			
		Not at all	No more than usual	Rather more than usual	Much more than usual
<b>Q6</b>	Felt you couldn't overcome your difficulties?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

**HAVE YOU RECENTLY:**

		<b>Tick ONE box</b> <sup>195</sup>			
		<b>More so than usual</b>	<b>Same as usual</b>	<b>Less so than usual</b>	<b>Much less than usual</b>
<b>Q7</b>	Been able to enjoy your normal day-to-day activities?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		<b>Tick ONE box</b> <sup>196</sup>			
		<b>More so than usual</b>	<b>Same as usual</b>	<b>Less able than usual</b>	<b>Much less able</b>
<b>Q8</b>	Been able to face up to your problems?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		<b>Tick ONE box</b> <sup>197</sup>			
		<b>Not at all</b>	<b>No more than usual</b>	<b>Rather more than usual</b>	<b>Much more than usual</b>
<b>Q9</b>	Been feeling unhappy and depressed?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		<b>Tick ONE box</b> <sup>198</sup>			
		<b>Not at all</b>	<b>No more than usual</b>	<b>Rather more than usual</b>	<b>Much more than usual</b>
<b>Q10</b>	Been losing confidence in yourself?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		<b>Tick ONE box</b> <sup>199</sup>			
		<b>Not at all</b>	<b>No more than usual</b>	<b>Rather more than usual</b>	<b>Much more than usual</b>
<b>Q11</b>	Been thinking of yourself as a worthless person?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
		<b>Tick ONE box</b> <sup>200</sup>			
		<b>More so than usual</b>	<b>About same as usual</b>	<b>Less so than usual</b>	<b>Much less than usual</b>
<b>Q12</b>	Been feeling reasonably happy, all things considered?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

General Health Questionnaire (GHQ-12)  
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## Table 1.4 Prevalence of any CVD, any CVD or diabetes, IHD, IHD or stroke, Scotland, England and Northern Ireland

### *Data presentation*

The data presented in Table 1.4 are based on a number of questions about various CVD conditions. The reports of the Scottish and English surveys each include the following summary measures:

- Any CVD (angina, heart attack, stroke, heart murmur, abnormal heart rhythm, 'other' heart trouble);
- Ischaemic heart disease - IHD - (angina, heart attack); and
- IHD or stroke (the preceding category plus stroke).

In addition, Scotland also reports:

- Any CVD or diabetes (the any CVD category plus diabetes).

Table 1.4 therefore includes a row of data for England reporting any CVD or diabetes that is not included in HSE reports. This variable is called CVDDef2. The syntax to derive it is published in the SHeS 2008 derived variable documentation available from the UK Data Archive (or on request from the authors of his report). All other items in the table are identical to those already reported for England.

### *Question wording*

In Scotland and England each condition is asked about separately and follow-up questions are used to establish: 1) if the condition was confirmed by a doctor, and 2) if the condition was only present during pregnancy (for heart murmurs and diabetes).

- Scotland and England

Have you ever had angina?

- 1 Yes
- 2 No

Have you ever had a heart attack (including myocardial infarction or coronary thrombosis)?

- 1 Yes
- 2 No

And do you now have, or have you ever had...READ OUT ...a heart murmur?

- 1 Yes
- 2 No

...an abnormal heart rhythm?

- 1 Yes
- 2 No

...any other heart trouble?

- 1 Yes
- 2 No

Have you ever had a stroke?

- 1 Yes
- 2 No

- Do you now have, or have you ever had diabetes?
- 1 Yes
  - 2 No

(If had angina)

- You said that you had angina. Were you told by a doctor that you had angina?
- 1 Yes
  - 2 No

(If had a heart attack)

- Were you told by a doctor that you had a heart attack (including myocardial infarction or coronary thrombosis)?
- 1 Yes
  - 2 No

(If had abnormal heart rhythm)

- Were you told by a doctor that you had abnormal heart rhythm?
- 1 Yes
  - 2 No

(If had other heart trouble)

- Were you told by a doctor that you had (*name of 'other heart condition'*)?
- 1 Yes
  - 2 No

(If had a stroke)

- Were you told by a doctor that you had a stroke?
- 1 Yes
  - 2 No

(If had diabetes)

- Were you told by a doctor that you had diabetes?
- 1 Yes
  - 2 No

(Women who have had diabetes)

- Can I just check, were you pregnant when you were told that you had diabetes?
- 1 Yes
  - 2 No

(Women who had diabetes when pregnant)

- Have you ever had diabetes apart from when you were pregnant?
- 1 Yes
  - 2 No

(If had a heart murmur)

- You mentioned that you have had a heart murmur. Were you told by a doctor that you had a heart murmur?
- 1 Yes
  - 2 No

(Women who have had a heart murmur)

- Can I just check, were you pregnant when you were told that you had a heart murmur?
- 1 Yes
  - 2 No

(Women who had a heart murmur when pregnant)

Have you ever had a heart murmur apart from when you were pregnant?

- 1 Yes
- 2 No

- Northern Ireland

In Northern Ireland the conditions were not asked about separately and were instead presented on a card. Diabetes only during pregnancy is excluded from the data in the table (people who mentioned this were followed up to confirm whether they had had diabetes at any other time). Unlike Scotland and England, heart murmur only during pregnancy was not excluded. Northern Ireland did not ask about abnormal heart rhythm, it is assumed that participants reported this as “other kind of heart trouble”.

Have you ever been told by a doctor that you had any of the conditions on this card?

ANGINA

HEART ATTACK

HEART MURMUR

OTHER KIND OF HEART TROUBLE

STROKE

DIABETES (DURING PREGNANCY)

DIABETES (NOT DURING PREGNANCY)

ASTHMA

COPD OR CHRONIC OBSTRUCTIVE PULMONARY DISEASE E.G. CHRONIC

BRONCHITIS / EMPHYSEMA OR BOTH DISORDERS

NONE "NONE OF THESE

### **Table 2.1 Estimated alcohol consumption level on heaviest drinking day in past week, Scotland and England**

The data reported in Table 2.1 are based on a large number of questions and a complex method for converting alcohol types and volumes into units (which is summarised below and documented in full the technical reports of the 2008 Scottish and English Health Surveys). The two surveys use very similar questions. Wales also includes very similar questions about alcohol consumption but the method of administration is very different. In Scotland and England the questions are asked as part of the face to face interview (with the exception of all 16 and 17 year olds, and some 18-19 year olds in Scotland and some 18-24 year olds in England who use a self-completion booklet at the interviewers' discretion). In Wales, all the questions are administered via a self-completion booklet. Under-reporting of alcohol consumption in social surveys is known to be a problem and the Welsh data appear to show much higher levels of reported consumption in Wales than in Scotland and England. We judged that this was likely to result from the different method of data collection in Wales, rather than objective differences between the populations in the three countries.

Some other differences between Scotland and England are as follows:

- Scotland asks a section of questions about weekly drinking before asking about daily drinking.
- Scotland records consumption of alcopops in small cans or bottles, and bottles of 700ml. England and Wales do not include 700ml bottles.
- Both countries ask participants to report their wine consumption in glass sizes (125ml, 175ml or 250ml). In addition, Scotland uses pictures of wine glasses to help participants estimate this.

- The Scottish data uses a slightly different method of categorising people as either drinkers or non-drinkers. To make the base consistent between the two countries the HSE data were recoded using the SHeS convention (the syntax is available on request). As a result, there is a very slight difference in the percentages presented in this report compared with those in the main 2008 HSE report (Table 12.6). Note that the figures in this report are based on all adults aged 16 and over, the HSE report tables mainly present figures for all adults aged 16 and over who drank alcohol in the previous week.

### **Data collection in the Scottish and English surveys**

The way in which the surveys estimate alcohol consumption changed significantly in recent years (from 2006 in England and from 2008 in Scotland). The following outlines the methods now used to collect and analyse the alcohol consumption data.

Both surveys measure daily consumption on the heaviest drinking day in the previous week. Scotland also measures usual weekly drinking and indicators of problem drinking.

Daily consumption was measured by asking about drinking in the week preceding the interview, and looked at actual consumption on the heaviest drinking day in that week. Participants aged 16 and over were asked whether 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. In each case, the questions asked for details of the amounts consumed for each of the following six types of alcohol drink:

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

A follow-up question asked how much of each drink type they had drunk on that day. These data were converted into units of alcohol and multiplied by the amount they said they drank on that day (see below for discussion of this process).

### **Unit calculations and conversion factors**

In the UK, a standard unit of alcohol is 10 millilitres or around 8 grams of ethanol. Information was collected about the volumes of alcohol participants had drunk on their heaviest drinking day in the week preceding the survey. The volumes reported were not validated but in response to growing concerns about the reliability of consumption estimates from studies such as this, and the increasing consumption of wine – especially amongst women – extra efforts were made to measure wine glass sizes. This was done in two ways. Firstly, participants who reported drinking any wine were asked directly what size of glass they had been drinking from. Secondly, in Scotland, showcards depicting glasses with 125ml, 175ml and 250mls of liquid were used to help people make more accurate judgements.

The following table outlines how the volumes of alcohol reported in the survey were converted into units (the 2008 Scottish health Survey Report provides full information about how this process has changed over time).



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

**Table 2.2 Self-reported cigarette smoking status, Scotland, England, Wales and Northern Ireland**

*Data presentation*

The HSE report presents figures for regular cigarette smoking, this report has used the SHeS convention of presenting figures for all cigarette smoking (occasional or regular). The figures for ex and never smokers in England in Table 2.2 do not therefore match those presented in the HSE 2008 report Table 11.1.

*Question wording*

There are some differences between the ways these questions are asked in each country. The questions about current cigarette smoking in Scotland, England and Northern Ireland arrive at the same information but via a slightly different route. In Scotland, whether people have ever smoked cigarettes, cigars or pipes is coded directly at the first question. Ex-cigarette smokers are then asked how often they used to smoke. England asks a specific follow-up question to establish if ex-smokers were cigarette smokers, and if so how often they smoked them. Northern Ireland just asks all ex-smokers if they have ever smoked cigarettes, but does not ask how often.

As the questions asked of participants do not differ greatly this is unlikely to affect the comparability of the data collected. In particular, from the participants' perspective, the estimate of current cigarette smoking is arrived at in exactly the same way.

In Northern Ireland it is not possible to distinguish between regular and occasional ex-smokers. It is therefore possible that ex-occasional cigarette smokers in Northern Ireland will have been classified as never having smoked cigarettes, whereas in Scotland and England they would have been classified as ex-cigarette smokers.

Unlike the other three countries, the question in Wales asks about smoking in general rather than cigarette smoking in particular. People in Wales who only smoke pipes or cigars cannot be excluded from the estimate. The evidence from the other countries suggests that this group (of pipe and cigar smokers who do not smoke cigarettes) is likely to be very small.

- Scotland

May I just check, have you ever smoked a cigarette, a cigar or a pipe?

CODE ALL THAT APPLY.

- 1 Yes: cigarette
- 2 Yes: cigars
- 3 Yes: pipe
- 4 No

(If has ever smoked cigarettes, cigars or a pipe)

Do you smoke cigarettes at all nowadays?

- 1 Yes
- 2 No

(If smoked cigarettes in the past, but not a current cigarette smoker)

Did you smoke cigarettes regularly, that is at least one cigarette a day, or did you smoke them only occasionally?

- 1 Smoked cigarettes regularly, at least 1 per day
- 2 Smoked them only occasionally
- 3 SPONTANEOUS: Never really smoked cigarettes, just tried them once or twice

- England

May I just check, have you ever smoked a cigarette, a cigar or a pipe?

- 1 Yes
- 2 No

(If has ever smoked cigarettes, cigars or a pipe)

Do you smoke cigarettes at all nowadays?

- 1 Yes
- 2 No

(If smoked in the past, but not a current cigarette smoker)

Have you ever smoked cigarettes?

- 1 Yes
- 2 No

(If has smoked cigarettes in the past)

Did you smoke cigarettes regularly, that is at least one cigarette a day, or did you smoke them only occasionally?

- 1 Smoked cigarettes regularly, at least 1 per day
- 2 Smoked them only occasionally
- 3 SPONTANEOUS: Never really smoked cigarettes, just tried them once or twice

- Northern Ireland

Have you ever smoked a cigarette, a cigar or a pipe?

- 1 Yes
- 2 No

(If has ever smoked cigarettes, cigars or a pipe)

Do you smoke cigarettes at all nowadays?

- 1 Yes
- 2 No

(If smoked in the past, but not a current cigarette smoker)

Have you ever smoked cigarettes regularly?

- 1 Yes
- 2 No

- Wales

Which one of these best describes you?

Tick one only

I smoke daily

I smoke occasionally but not every day

I used to smoke daily but do not smoke at all now

I used to smoke occasionally but do not smoke at all now

I have never smoked

### **Table 3.1 Fruit and vegetable consumption, Scotland and England**

The data reported in Table 3.1 are based on a large number of questions which are used to establish how many portions of fruit and vegetables were consumed on the previous day. The module was originally designed for use in the Health Survey for England and has been included in the Scottish Health Survey since 2003. The only difference between the countries is that SHeS asks about consumption of “pure fruit juice” whereas HSE asks about “fruit juice”.

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

To determine the total number of portions that had been consumed in the 24 hours preceding the interview, the fruit and vegetable modules in both surveys asked about 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; and fruit in composites (e.g. apple pie). A portion was defined as the conventional 80g of a fruit or vegetable. As 80g is difficult to visualise, a ‘portion’ was described using more everyday terms, such as tablespoons, cereal bowls and slices. Examples were 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 surveys:

<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 plum	2 fruits
<b>Food item</b>	<b>Portion size</b>
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 five a day policy stresses both volume and variety, the number of portions of fruit juice, pulses and dried fruit was capped so that no more than one portion could contribute to the total number of portions consumed. Interviewers recorded full or half portions, but nothing smaller.

### **Table 3.2 Summary activity levels, Scotland and England**

The data presented in Table 3.2 are based on a large number of questions which are asked in both countries. The only difference between the countries is that the HSE question about work based activity includes voluntary and paid work. In SHeS only paid work activity is asked about.

However, the way the data are reported is very different. Adults are recommended to do at least 30 minutes of moderate activity on most days of the week, in bouts of at least 10 minutes at a time. The Scottish Health Survey includes bouts of 10-29 minutes in its summary measure of activity using a method first adopted in 2003 to count activities of 15-29 minutes. The Health Survey for England also measures activities that have lasted at least 10 minutes, but its summary measure excludes any activities below 30 minutes.<sup>5</sup>

To make the data comparable between Scotland and England for this report, the HSE summary activity measure was re-derived using the SHeS method. This involved three changes:

- activity bouts of 10-29 minutes duration were included,
- employment activity levels were based on SOC90 rather than SOC2000 codes, and
- the exertion levels of other sporting activities were classified using the SHeS codeframe.

For these reasons the figures for England in this report differ to those published in the 2008 HSE report. Full details of how these changes were implemented are available on request.

## The adult physical activity questionnaire

The adult physical activity module included in the Scottish and English surveys is based on the Allied Dunbar National Fitness Survey, a major study of physical activity among the adult population in England conducted in 1990.<sup>6</sup> The module examined:

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

### Adult physical activity definitions

#### *Types of activity covered*

Four main types of physical activity were asked about:

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

For the first three categories, participants were asked to report any activities lasting at least 10 minutes and to say on how many days in the past four weeks they had taken part in such activities. For walking, they were also asked on how many days they had taken more than one walk of at least 10 minutes. Where they had taken more than one walk, the total time spent walking for that day was calculated as twice the average reported walk time.

Those in full or part-time employment were also asked about activity at work. They were asked to rate how physically active they were in their job (options were: very physically active, fairly physically active, not very physically active and not at all physically active). Occupational activity was counted as 20 days in the last 4 weeks for full-time workers and 12 days for part-time workers. As noted above, in England these questions also covered voluntary work.

#### *Intensity level*

Each of the activities mentioned were classified into according to their intensity level in. The four categories of 'intensity' of physical activity were:

- Vigorous
- Moderate
- Light, and
- Inactive.

The physical activity recommendations for adults focus on engaging in at least moderate levels of physical activity for at least 30 minutes on most days of the week. The data reported here therefore focus on **moderate** and **vigorous** intensity activities.

Home-based activities were classified as either 'moderate' or 'light' depending on their nature. Participants were given examples of types of housework, gardening, building work and DIY which were described as either 'heavy' or 'light'. All cases of 'heavy' home-based activity were classified as being of 'moderate' physical intensity. Light gardening, building work and DIY were all classified as 'light' physical intensity. Due to its very low intensity, light housework was not included in the calculations of physical activity in this report.<sup>7</sup>

For walking, participants were asked to assess their usual walking pace as 'slow', 'steady average', 'fairly brisk' or 'fast – at least 4mph'. Walks of 10 minutes or more at a brisk or fast pace were classified as being of 'moderate' intensity. Walks at slow or steady average pace were classified as 'light'.

The intensity levels of different sports and exercises were determined according to a combination of the nature of the activity and the participant's assessment of the amount of effort it involved. For example, all instances of playing squash or running/jogging were counted as 'vigorous' intensity. However, other activities, like swimming or cycling, were counted as 'vigorous' only if the participant reported that the effort involved was enough to make them 'out of breath or sweaty'; if not, they were classified as 'moderate' intensity. Similarly, other activities, like dancing, counted as 'moderate' if they made the participant out of breath or sweaty, but 'light' if not.<sup>8</sup>

Activities at work were classified using a combination of (a) the participant's assessment of how active they are in their job (described above), and (b) the Standard Occupational Classification (SOC) code assigned to their job type. For example, if participants' jobs were among a short list of particularly strenuous occupations (including, for example, miners and construction workers) and they described themselves as 'very physically active' at work, then their jobs were classified as involving 'vigorous' activity. Otherwise, those who described their jobs as 'very physically active' were classified as 'moderately active' at work, as were those who considered themselves 'fairly physically active' but whose occupations were classed as involving heavy or moderate work (for example, shipwrights or refuse collectors).<sup>9</sup>

## References and notes

- <sup>1</sup> Bromley, C., Bradshaw, P. and Given, L. [eds.] (2009). The Scottish Health Survey 2008 – Volume 2: Technical Report. Edinburgh: Scottish Government. Available from: <http://www.scotland.gov.uk/Publications/2009/09/28102003/0>
- <sup>2</sup> Craig, R., Mindell, J., and Hirani, V. [Eds.] Health Survey for England 2008 – Volume 2: Methodology and Documentation. London: National Centre for Social Research. Available from: <http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england/health-survey-for-england--2008-physical-activity-and-fitness>
- <sup>3</sup> No technical report of the 2005/6 survey has been published, however methodological information can be found in the User Guide that accompanies the archived data, available from <http://www.data-archive.ac.uk/findingdata/snDescription.asp?sn=5710&key=northern+ireland+health+and+social+wellbeing>
- <sup>4</sup> Sadler, K., Doyle, M. Sanchez, M. and Hussey, D. (2009). Welsh Health Survey 2008 Technical Report. [Web only] Available from: <http://wales.gov.uk/topics/statistics/publications/publication-archive/healthsurvey2008tech/?lang=en> [Accessed 5 July 2010]
- <sup>5</sup> For a more detailed explanation of this see: Roth, M. (2010). Self-reported physical activity in adults. In Craig, R., Mindell, J., and Hirani, V. [Eds.] *Health Survey for England 2008 – Volume 1: Physical activity and fitness*. London: National Centre for Social Research. Available from: <http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england/health-survey-for-england--2008-physical-activity-and-fitness>
- <sup>6</sup> *Allied Dunbar National Fitness Survey*. London: Health Education Authority and Sports Council, 1992.

### <sup>7</sup> **Home activities:**

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

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

Examples of 'heavy' housework classified as *moderate* intensity:

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

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

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

### <sup>8</sup> **Sports and Exercise activities – Intensity:**

*Vigorous:*

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

*Moderate:*

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

*Light:*

a) See 'moderate' category c).

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

9

**Work activities:**

*Vigorous:*

Considers self very physically active in job and is in one of a small number of occupations defined as involving heavy work including:

fishermen/women, furnace operators, rollerman, smiths and forge workers, faceworking coal-miners, other miners, construction workers and forestry workers.

*Moderate:*

Considers self very physically active in job and is not in occupation groups listed above OR considers self fairly physically active in job and is one of a small number of occupations involving heavy or moderate work including:

any listed above OR fire service officers, metal plate workers, shipwrights, riveters, steel erectors, benders, fitters, galvanisers, tin platers, dip platers, plasterers, roofers, glaziers, general building workers, road surfacers, stevedores, dockers, goods porters, refuse collectors.

*Light:*

Considers self fairly physically active in job and is not in one of the occupation groups listed above.



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