

# Coronary heart disease statistics

## 2007 edition

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# Foreword

The British Heart Foundation is proud to present the 2007 edition of *Coronary heart disease statistics*.

Despite the gratifying, continued, downwards trend in deaths due to diseases of the heart and circulation, cardiovascular disease remains the major cause of death and disability in the UK. The economic impact of premature deaths and the ever rising cost of caring for the increasing numbers of people surviving into old age with cardiovascular problems impose a huge burden on our health and social services.

One of the most striking features of this year's statistics is the marked difference in prevalence of cardiovascular disease between and within communities. For example, men and women living in the West of Scotland are nearly six times more likely to die prematurely from coronary heart disease (CHD) than men and women living in the South West of England. There are striking differences even within short distances, such as in London, where inhabitants of Tower Hamlets have three times more risk of dying prematurely from CHD than their counterparts in Kensington and Chelsea.

There are a number of reasons for these inequalities, many of which are implied by the statistics. Social deprivation, smoking, poor diets and infrequent exercise are all reflected in the distribution of disease. These are compounded by ethnic differences in prevalence of, and susceptibility to, risk factors for cardiovascular disease such as hypertension, obesity and diabetes. It follows therefore that the greatest gains in public cardiovascular health will be made by focussing on the particular needs of the communities most at risk. This will require a diversity of approaches to ensure the behavioural changes that have benefited the more affluent sectors of our society start to have a similar effect on cardiovascular health in those most in need.

The BHF has recently adopted a new Prevention and Care strategy aimed at addressing the inequalities that underlie today's statistics. By working closely with communities that are at greatest risk we aim to beat heart disease together.

*Prof Peter Weissberg*  
Medical Director

# Introduction

This is the fifteenth edition of *Coronary heart disease statistics* produced by the British Heart Foundation.

*Coronary heart disease statistics* is designed for health professionals, medical researchers and anyone else with an interest in coronary heart disease (CHD). It aims to provide the most recent statistics related to the incidence, causes and effects of the disease.

It is divided into 13 sections. The first two chapters on mortality and morbidity deal with demographic trends in CHD and related diseases of the circulatory system. Following a section on treatment on CHD there are chapters on the main modifiable risk factors for the disease: smoking, an unhealthy diet, lack of physical activity, a high alcohol consumption, poor psychosocial wellbeing, raised blood pressure, raised blood cholesterol, obesity and diabetes. The final chapter provides information about the economic costs of CHD.

Each chapter contains a set of tables<sup>1</sup> and figures to illustrate key points and a brief review of the data presented. Where appropriate it contains tables showing the public health targets for England, Wales, Scotland and Northern Ireland.

All data in *Coronary heart disease statistic* are also available on the British Heart Foundation's [www.heartstats.org](http://www.heartstats.org) website. Further copies of this publication can be downloaded from the website, as well as copies of recent supplements on diet, physical activity and obesity, congenital heart disease, smoking and European cardiovascular disease.

The [www.heartstats.org](http://www.heartstats.org) website aims to be the most comprehensive and up-to-date source of statistics on cardiovascular disease in the UK. The website is updated on an ongoing basis, and contains a wider range of tables and figures than available in the *Coronary heart disease statistics* compendia and associated supplements.

1. Throughout the *Coronary heart disease statistics*, table column and/or row percentages may not add up to 100% because of rounding.

# 1. Mortality

## *Total mortality*

Diseases of the heart and circulatory system (cardiovascular disease or CVD) are the main cause of death in the UK and account for over 208,000 deaths each year. More than one in three people (36%) die from CVD each year. The main forms of CVD are coronary heart disease (CHD) and stroke. About half (48%) of all deaths from CVD are from CHD and more than a quarter (28%) are from stroke (Table 1.2).

CHD by itself is the most common cause of death in the UK. Around one in five men and one in six women die from the disease. CHD causes around 101,000 deaths in the UK each year (Table 1.3 and Figures 1.3a and 1.3b).

Other forms of heart disease cause around 32,000 deaths in the UK each year so in total there were just over 133,000 deaths from heart disease in the UK in 2005 (Table 1.3).

## *Premature mortality*

CVD is one of the main causes of premature death in the UK (death before the age of 75). 31% of premature deaths in men and 23% of premature deaths in women were from CVD in 2005 (Figures 1.3c and 1.3d). CVD caused just under 57,000 premature deaths in the UK in 2005 (Table 1.3).

CHD, by itself, is the most common cause of premature death in the UK (Figures 1.3c and 1.3d). About one fifth (20%) of premature deaths in men and one in ten (11%) premature deaths in women were from CHD (Figures 1.3c and 1.3d). CHD caused almost 33,000 premature deaths in the UK in 2005 (Table 1.3).

Other forms of heart disease cause almost 8,000 premature deaths in the UK each year. In total there were around 40,000 premature deaths from heart disease in the UK in 2005 – over one fifth of all premature deaths.

## *Recent trends in death rates in the UK*

Death rates from CVD have been falling in the UK since the early 1970s. For people under 75 years, they have fallen by 24% in the last ten years (Figure 1.1a).

Death rates from CHD have been falling in the UK since the late 1970s (Figures 1.1c and 1.1d). For people under 65 years, they have fallen by 46% in the last ten years (Figure 1.1c).

In recent years, CHD death rates have been falling slower in younger age groups and fastest in those aged 55 and over. For example, between 1995 and 2005 there was a 50% fall in the CHD death rate for men aged 55 to 64 in the UK, compared to a 27% fall in men aged 35 to 44 years. In women there was a 56% fall in those aged 55 to 64 years and a 20% fall in those aged 35 to 44 years (Table 1.4 and Figures 1.4a and 1.4b).

Death rates from stroke fell throughout the latter part of the twentieth century<sup>1</sup>. For people under 65 they have fallen by 23% in the last ten years (Figure 1.1e). Recently rates have declined at a slower rate than previously, particularly in the younger age groups (Figures 1.1e and 1.1f).

A recent study aimed to explain the decline in mortality from CHD over the last two decades of the twentieth century in Britain. Combining and analysing data on uptake and effectiveness of cardiological treatments and risk factor trends, the authors examined how much of the decline in CHD mortality in England and Wales between 1981 and 2000 could be attributed to medical and surgical treatments and how much to changes in cardiovascular risk factors. They concluded that more than half (58%) of the CHD mortality decline in Britain during the 1980s and 1990s was attributable to reductions in major risk factors, principally smoking. Treatments to individuals, including secondary prevention, explained the remaining two-fifths (42%) of the mortality decline<sup>2</sup>.

## *International differences*

Despite recent improvements, internationally the death rate from CHD in the UK is relatively high (Table 1.5 and Figure 1.5a). In countries of Eastern and Central Europe - where death rates have been rising rapidly recently - the death rates are generally higher than in the UK but among more developed countries only Ireland and Finland have a higher rate than the UK (Figure 1.5a).

While the death rate from CHD has been falling in the UK it has not been falling as fast as in some other countries. For example, the death rate for men aged 35 to 74 fell by 42% between 1990 and 2000 in the UK, but it fell by 48% in Australia and 54% in Norway. For women the death rate fell by 44% in the UK but in Australia and New Zealand the rate fell by 51% and 48% respectively (Figure 1.5b).

Over the same period, the death rates from CHD in countries of Eastern and Central Europe (most notably countries of the former USSR) have experienced substantial increases. In the Ukraine, for example, between 1990 and 2000 death rates rose by over 60% in both men and women (Figure 1.5b).

## *National and regional differences*

Death rates from CHD are highest in Scotland, and the North of England, lowest in the South of England, and intermediate in Wales and Northern Ireland. The premature death rate for men living in Scotland is 70% higher than in the South West of England and 88% higher for women. For more than 25 years these rates have been consistently highest in Scotland (Table 1.6).

Maps of CHD mortality by local authority in the UK demonstrate this North-South gradient and show that the highest mortality rates are also concentrated in urban areas (Table 1.7 and Figures 1.7a and 1.7b).

## *Socio-economic differences*

Since the 1970s the premature death rate has fallen across all social groups for both men and women. However for men the death rate has fallen faster in non-manual workers than in manual workers and the difference in death rates increased between these groups (Figure 1.8). At the end of the 1980s the premature death rate from CHD for male manual workers was 58% higher than for male non-manual workers. The premature death rate from CHD for female manual workers

was more than twice as high as that for female non-manual workers. Towards the end of the 1990s the premature death rate was 50% higher for manual male workers compared with their non-manual counterparts. During the same period the premature death rate for female manual workers was 73% higher than their non-manual counterparts (Table 1.8).

In 1997 it was estimated that each year 5,000 lives and 47,000 working years are lost in men aged 20 to 64 years due to social class inequalities in CHD death rates. Just under one in three of all deaths under 65 years resulting from social class inequalities are due to CHD. In England and Wales there is a strong positive relationship between deaths from circulatory diseases and levels of deprivation (Table 1.9). This pattern is clear in CHD and stroke for both men and women (Figure 1.9).

To help reduce these socio-economic inequalities, CVD inequalities targets have been introduced in England, Scotland and Wales (Table 1.1). Data from the Central Health Monitoring Unit show that in England there has been clear progress towards this target: the absolute gap in CVD mortality between the fifth most deprived areas and the population as a whole, in people aged under 75, has fallen by just over 20% since the mid-1990s (Figure 1.1b).

## *Ethnic differences*

South Asians living in the UK (Indians, Bangladeshis, Pakistanis and Sri Lankans), have a higher premature death rate from CHD than average. Data from the early 1990s show that the death rate for these groups was 46% higher for men and 51% higher for women (Table 1.10 and Figure 1.10a). Premature death rates from CHD for people born in the Caribbean and West Africa were much lower than average – around half the rate found in the general population for men and two-thirds of the rate found in women (Table 1.10 and Figure 1.10a).

The difference in the death rates between those born in South Asia and the general population increased in the 1970s and 1980s. This is because the death rate from CHD was not falling as fast in South Asian groups as it was in the rest of the population. From 1971 to 1991 the mortality rate for 20 to 69 year olds for the whole population fell by 29% for men and 17% for women whereas in people born in South Asia it fell by 20% for men and 7% for women<sup>3</sup>.

People born in South Asia also have a premature death rate from stroke which, in the 1990s, was 55% higher than average for men and 41% higher for women but for those born in West Africa and the Caribbean premature death rates for stroke were even higher. For those born in West Africa the rate was nearly three times higher for men and 81% higher for women. For those born in the Caribbean it was 68% higher for men and 57% higher for women (Table 1.10 and Figure 1.10b).

## *Excess winter mortality*

In the UK more people die of CHD in the winter months. In 2004/05, just under 7,000 people died from CHD in England and Wales each month in June and July, compared to around 9,000 in December and January (Table 1.11 and Figure 1.11).

Excess winter mortality is the mortality that occurs in winter above that which occurs in the rest of the year<sup>4</sup>. In 2004/05, in England and Wales, during the winter months there were around 19% more deaths than would be expected on the basis of the underlying mortality throughout

the year. This percentage is higher in older age groups, with excess winter mortality more than twice as high in the over 85s compared to the under 65s (Table 1.12).

The amount of excess winter mortality varies considerably by region – it is highest in the West Midlands and lowest in the North East of England. Excess winter mortality also varies from year to year. In 1999/2000, there were nearly twice as many excess winter deaths from CHD than in 2004/05 (8,960 compared to 5,450 deaths)<sup>5</sup>.

## *Public health targets*

Recent trends indicate that the *Our Healthier Nation* target to reduce the death rate from CHD, stroke and related diseases in people under 75 years by at least two fifths by 2010 will be met (Figure 1.1a).

Progress towards the CVD inequalities target in England is also steady. If this continues, the target to reduce the inequalities gap in premature death rates from CVD between the areas with the worst health and deprivation indicators and the population as a whole by 40% by 2010 will also be met (Figure 1.1b).

1. Office for National Statistics (1997) *The Health of Adult Britain*. The Stationery Office: London.
2. Unal B, Critchley JA, Capewell S (2004) *Explaining the decline in coronary heart disease mortality in England and Wales between 1981 and 2000*. *Circulation* 109: 1101-1107.
3. Wild S, McKeigue P (1997) *Cross sectional analysis of mortality by country of birth in England and Wales, 1970-92*. *BMJ* 314: 705-710.
4. *Excess winter deaths are calculated by subtracting the actual number of deaths in winter (usually December to March), from the number of deaths which would have been expected for this period, calculated on the basis of the actual number of deaths occurring in the surrounding non-winter months. It is postulated that excess winter mortality is partially preventable through improvements to cold damp housing – see Olsen N (2001) Prescribing warmer, healthier homes. BMJ 322: 748-749.*
5. Office for National Statistics (2006), personal communication.

**Table 1.1 CVD mortality targets for the United Kingdom**

|                                       |                                                                                                                                                                                                                                       |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>England<sup>1,2</sup></b>          |                                                                                                                                                                                                                                       |
| CVD - <i>Target</i>                   | To reduce the death rate from CHD, stroke and related diseases in people under 75 years by at least two fifths by 2010 – saving up to 200,000 lives in total                                                                          |
| CVD - <i>Milestone</i>                | To reduce the death rate from CHD, stroke and related diseases in people under 75 years by at least one quarter by 2005                                                                                                               |
| CVD - <i>Inequalities target</i>      | To reduce the inequalities gap in death rates from CHD, stroke and related diseases between the fifth of areas with the worst health and deprivation indicators and the population as a whole in people under 75 years by 40% by 2010 |
| <b>Wales<sup>3,4</sup></b>            |                                                                                                                                                                                                                                       |
| CHD – <i>Health outcome target</i>    | To reduce CHD mortality in 65-74 year olds from 600 per 100,000 in 2002 to 400 per 100,000 in 2012                                                                                                                                    |
| CHD – <i>Health inequality target</i> | To improve CHD mortality in all groups and at the same time aim for a more rapid improvement in the most deprived groups                                                                                                              |
| Stroke                                | To reduce stroke mortality in 65-74 year olds by 20% by 2012                                                                                                                                                                          |
| <b>Scotland<sup>5</sup></b>           |                                                                                                                                                                                                                                       |
| CHD - <i>Target</i>                   | To reduce mortality rates from CHD among people under 75 years by 60% between 1995 and 2010, from the 1995 baseline of 124.6 to 49.8 per 100,000 population                                                                           |
| CHD - <i>Inequalities target</i>      | To reduce the rate of CHD mortality (for people aged under 75) for the most deprived communities, by 27% between 2003 and 2008, from the 2003 baseline of 112.0 to 81.7 per 100,000 population                                        |
| Stroke – <i>Target</i>                | To reduce mortality rates from stroke among people under 75 years by 50% between 1995 and 2010, from the 1995 baseline of 37.5 to 18.8 per 100,000 population (standardised to the European Standard Population)                      |
| <b>Northern Ireland<sup>6</sup></b>   |                                                                                                                                                                                                                                       |
|                                       | No target set                                                                                                                                                                                                                         |

1. Department of Health (1999) *Our Healthier Nation*. DH: London.

2. Department of Health (2004) *National Standards, Local Action: Health and Social Care Standards and Planning Framework 2005/06 and 2007/08*. DH: London.

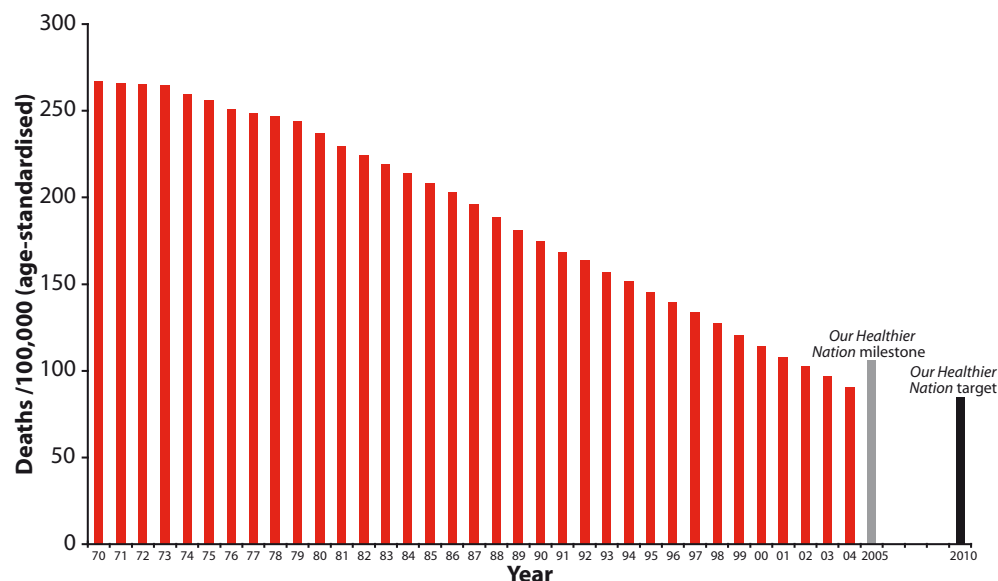
3. Welsh Assembly Government (2005) See Chief Medical Officer Wales website [www.cmo.wales.gov.uk/content/work/health-gain-targets/the-targets-e.htm#chd](http://www.cmo.wales.gov.uk/content/work/health-gain-targets/the-targets-e.htm#chd)

4. Welsh Assembly Government (2005) See Chief Medical Officer Wales website [www.cmo.wales.gov.uk/content/work/health-gain-targets/the-targets-e.htm#olderpeople](http://www.cmo.wales.gov.uk/content/work/health-gain-targets/the-targets-e.htm#olderpeople)

5. The Scottish Executive (2004) *Building a better Scotland. Spending proposals 2005-2008: Enterprise, Opportunity, Fairness*. The Scottish Executive: Edinburgh.

6. New strategies for CVD in Northern Ireland are currently being developed by the Department of Health, Social Services and Public Safety.

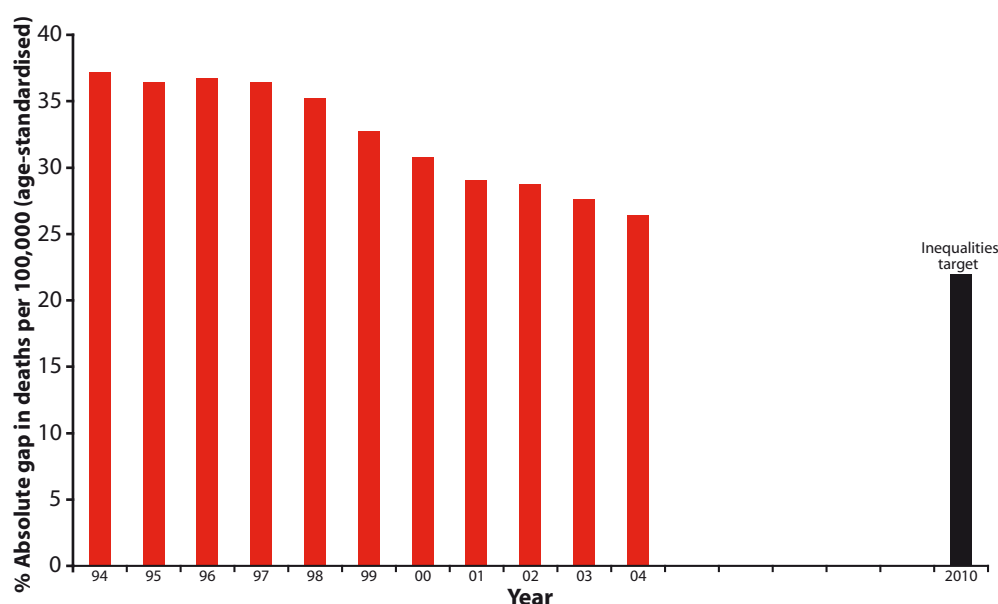
*Figure 1.1a Death rates from CHD, stroke and all other diseases of the circulatory system, people aged under 75, 1969 to 2005, England, with “Our Healthier Nation” milestone and target*



Notes: Data are three year moving averages plotted against middle year. ICD9 data have been adjusted to be comparable with ICD10 data.

Source: Data from Office for National Statistics; analysis by Central Health Monitoring Unit, Department of Health. Data from 1984-1992 have been adjusted due to the effects of coding medical enquiries and WHO Rule 3.

*Figure 1.1b Absolute gap in death rates from CHD, stroke and all other diseases of the circulatory system, between the fifth most deprived areas and the population as a whole, people aged under 75, 1993 to 2005, England, with inequalities target*

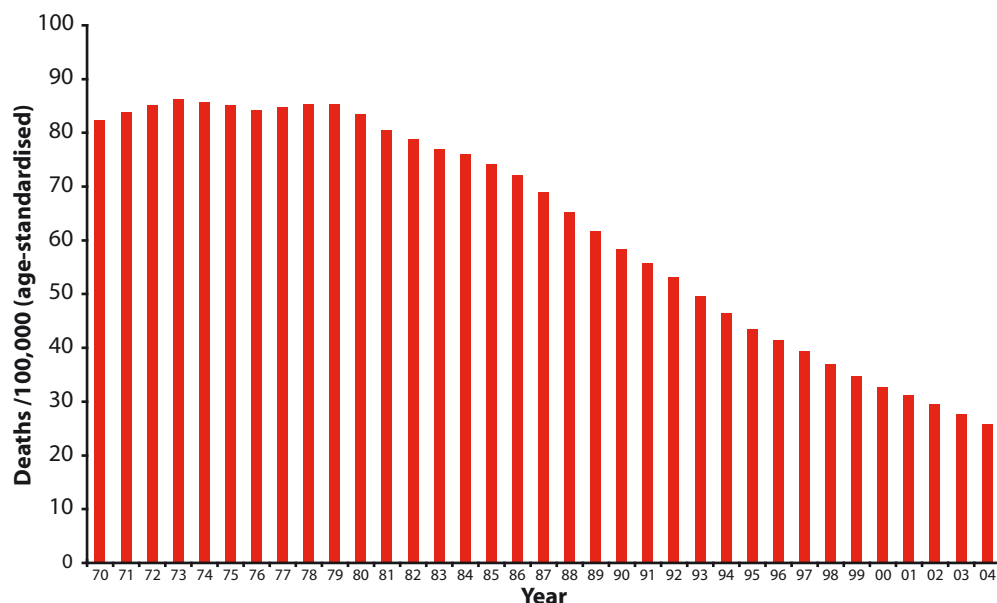


Notes: Data are three year moving averages plotted against middle year.

There is a discontinuity in the data around year 2000 due to the change to the 10th revision of the WHO International Classification of Diseases.

Source: Data from Office for National Statistics; analysis by Central Health Monitoring Unit, Department of Health.

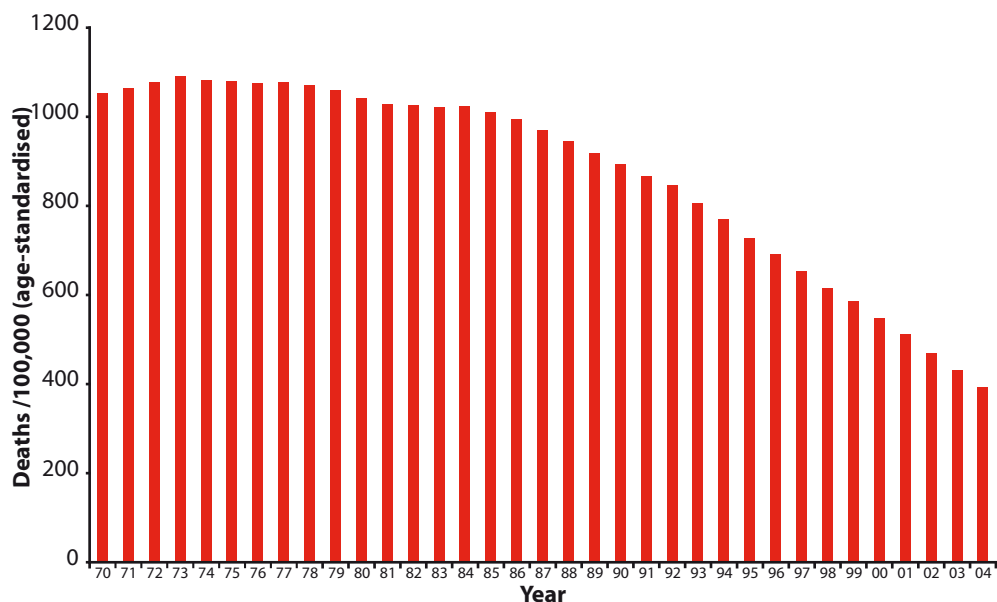
*Figure 1.1c Death rates from CHD for people aged under 65, 1969 to 2005, England*



Notes: Data are three year moving averages plotted against middle year. There is a discontinuity in the data around year 2000 due to the change to the 10th revision of the WHO International Classification of Diseases. Data from 1984-1992 have been adjusted due to the effects of coding medical enquiries and WHO Rule 3.

Source: Data from the Office for National Statistics; analysis by Central Health Monitoring Unit, Department of Health.

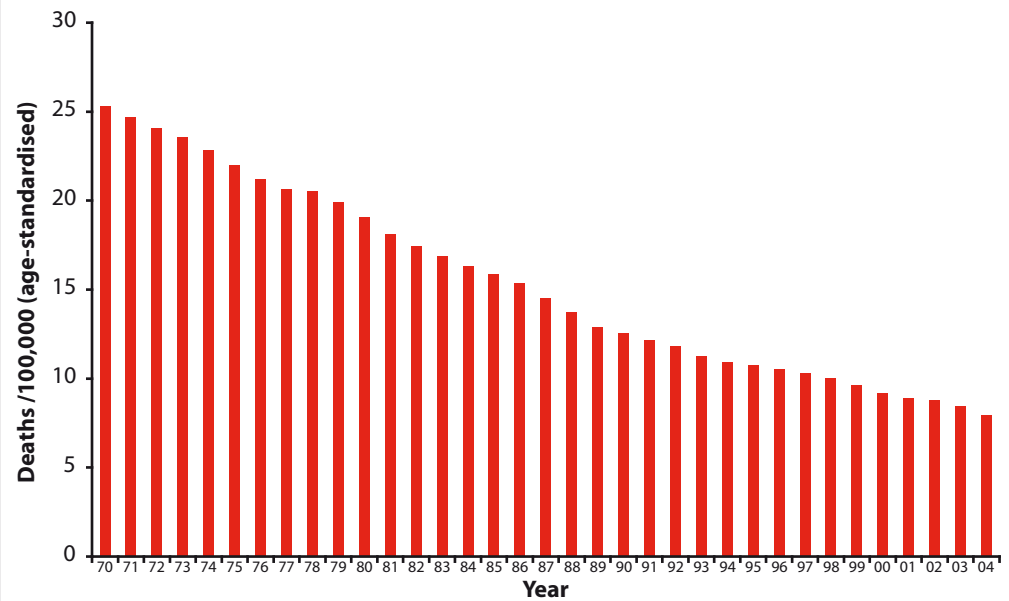
*Figure 1.1d Death rates from CHD, for people aged 65 to 74, 1969 to 2005, England*



Notes: Data are three year moving averages plotted against middle year. See Figure 1.1c for other notes.

Source: Data from Office for National Statistics; analysis by Central Health Monitoring Unit, Department of Health.

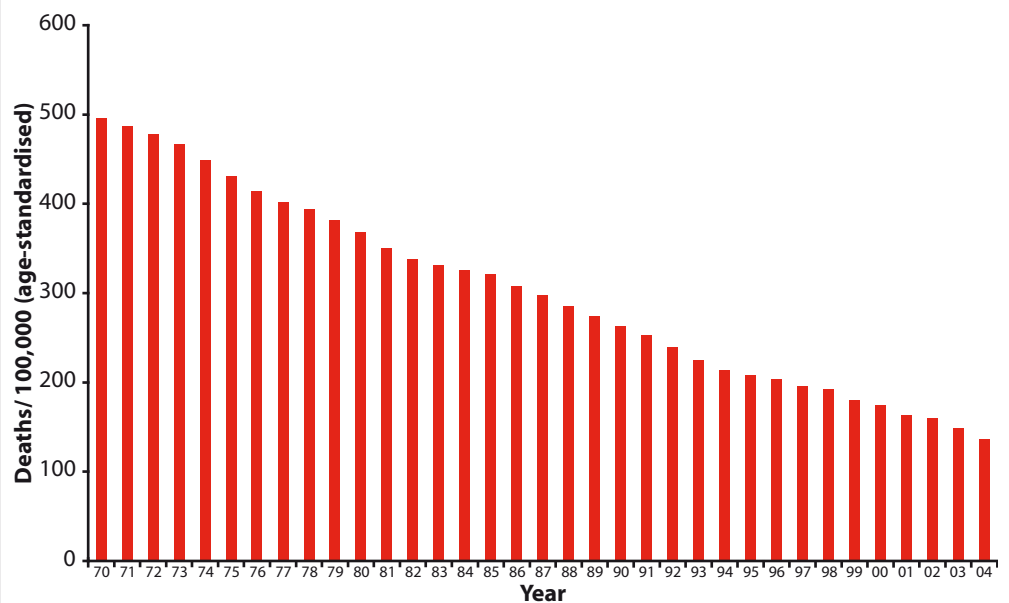
*Figure 1.1e Death rates from stroke for people aged under 65, 1969 to 2005, England*



Notes: Data are three year moving averages plotted against middle year. See Figure 1.1c for other notes.

Source: Data from Office for National Statistics; analysis by Central Health Monitoring Unit, Department of Health.

*Figure 1.1f Death rates from stroke for people aged 65 to 74, 1969 to 2005, England*



Notes: Data are three year moving averages plotted against middle year. See Figure 1.1c for other notes.

Source: Data from Office for National Statistics; analysis by Central Health Monitoring Unit, Department of Health.

**Table 1.2 Deaths by cause, sex and age, 2005, United Kingdom**

|                                                  |       | All ages | Under 35 | 35-44  | 45-54  | 55-64  | 65-74   | 75+     |
|--------------------------------------------------|-------|----------|----------|--------|--------|--------|---------|---------|
| All causes                                       | Men   | 276,644  | 8,990    | 7,408  | 14,140 | 31,497 | 58,674  | 155,935 |
|                                                  | Women | 305,167  | 4,816    | 4,406  | 9,448  | 20,576 | 41,749  | 224,172 |
|                                                  | Total | 581,811  | 13,806   | 11,814 | 23,588 | 52,073 | 100,423 | 380,107 |
| All diseases of the circulatory system (I00-I99) | Men   | 99,614   | 523      | 1,604  | 4,209  | 10,383 | 21,147  | 61,748  |
|                                                  | Women | 108,615  | 286      | 646    | 1,577  | 3,983  | 12,198  | 89,925  |
|                                                  | Total | 208,229  | 809      | 2,250  | 5,786  | 14,366 | 33,345  | 151,673 |
| Coronary heart disease (I20-I25)                 | Men   | 56,127   | 104      | 878    | 2,790  | 7,046  | 13,331  | 31,978  |
|                                                  | Women | 44,809   | 30       | 186    | 623    | 1,939  | 5,983   | 36,048  |
|                                                  | Total | 100,936  | 134      | 1,064  | 3,413  | 8,985  | 19,314  | 68,026  |
| Stroke (I60-I69)                                 | Men   | 21,861   | 107      | 258    | 572    | 1,360  | 3,570   | 15,994  |
|                                                  | Women | 35,785   | 87       | 215    | 506    | 1,013  | 3,073   | 30,891  |
|                                                  | Total | 57,646   | 194      | 473    | 1,078  | 2,373  | 6,643   | 46,885  |
| Diabetes (E10-E14)                               | Men   | 3,080    | 48       | 69     | 155    | 284    | 717     | 1,807   |
|                                                  | Women | 3,532    | 25       | 50     | 68     | 195    | 559     | 2,635   |
|                                                  | Total | 6,612    | 73       | 119    | 223    | 479    | 1,276   | 4,442   |
| Cancer (C00-D48)                                 | Men   | 81,313   | 679      | 1,247  | 4,114  | 12,725 | 22,963  | 39,585  |
|                                                  | Women | 75,749   | 699      | 1,813  | 4,689  | 11,064 | 17,569  | 39,915  |
|                                                  | Total | 157,062  | 1,378    | 3,060  | 8,803  | 23,789 | 40,532  | 79,500  |
| Colo-rectal cancer (C18-C21)                     | Men   | 8,637    | 31       | 88     | 414    | 1,347  | 2,519   | 4,238   |
|                                                  | Women | 7,455    | 24       | 107    | 312    | 828    | 1,628   | 4,556   |
|                                                  | Total | 16,092   | 55       | 195    | 726    | 2,175  | 4,147   | 8,794   |
| Lung cancer (C33, C34)                           | Men   | 19,457   | 12       | 167    | 947    | 3,476  | 6,150   | 8,705   |
|                                                  | Women | 14,008   | 11       | 121    | 723    | 2,254  | 4,074   | 6,825   |
|                                                  | Total | 33,465   | 23       | 288    | 1,670  | 5,730  | 10,224  | 15,530  |
| Breast cancer (C50)                              | Women | 12,417   | 87       | 656    | 1,400  | 2,380  | 2,364   | 5,530   |
|                                                  | Total | 12,417   | 87       | 656    | 1,400  | 2,380  | 2,364   | 5,530   |
| Respiratory disease (J00-J99)                    | Men   | 36,707   | 255      | 260    | 746    | 2,435  | 6,451   | 26,560  |
|                                                  | Women | 44,633   | 176      | 167    | 507    | 1,701  | 5,081   | 37,001  |
|                                                  | Total | 81,340   | 431      | 427    | 1,253  | 4,136  | 11,532  | 63,561  |
| Injuries and poisoning (V01-Y89)                 | Men   | 12,556   | 3,666    | 2,129  | 1,604  | 1,320  | 1,099   | 2,738   |
|                                                  | Women | 7,926    | 1,029    | 612    | 648    | 587    | 627     | 4,423   |
|                                                  | Total | 20,482   | 4,695    | 2,741  | 2,252  | 1,907  | 1,726   | 7,161   |
| All other causes                                 | Men   | 43,374   | 3,819    | 2,099  | 3,312  | 4,350  | 6,297   | 23,497  |
|                                                  | Women | 64,712   | 2,601    | 1,118  | 1,959  | 3,046  | 5,715   | 50,273  |
|                                                  | Total | 108,086  | 6,420    | 3,217  | 5,271  | 7,396  | 12,012  | 73,770  |

Notes: ICD codes in parentheses.

Source: England and Wales, Office for National Statistics (2006) personal communication.

Scotland, General Register Office (2006) personal communication.

Northern Ireland, General Register Office Statistics and Research Agency (2006) personal communication.

**Table 1.3** *All deaths and deaths under 75 by cause and sex, 2005, England, Wales, Scotland, Northern Ireland and United Kingdom*

|                                                       |       | All ages |        |          |                  |                | Under 75 |        |          |                  |                |
|-------------------------------------------------------|-------|----------|--------|----------|------------------|----------------|----------|--------|----------|------------------|----------------|
|                                                       |       | England  | Wales  | Scotland | Northern Ireland | United Kingdom | England  | Wales  | Scotland | Northern Ireland | United Kingdom |
| All causes                                            | Men   | 227,956  | 15,209 | 26,522   | 6,957            | 276,644        | 97,528   | 6,582  | 13,248   | 3,351            | 120,709        |
|                                                       | Women | 251,722  | 16,953 | 29,225   | 7,267            | 305,167        | 65,148   | 4,502  | 9,193    | 2,152            | 80,995         |
|                                                       | Total | 479,678  | 32,162 | 55,747   | 14,224           | 581,811        | 162,676  | 11,084 | 22,441   | 5,503            | 201,704        |
| All diseases of the circulatory system (I00-I99)      | Men   | 81,977   | 5,773  | 9,434    | 2,430            | 99,614         | 30,555   | 2,218  | 4,123    | 970              | 37,866         |
|                                                       | Women | 89,044   | 6,373  | 10,626   | 2,572            | 108,615        | 14,874   | 1,107  | 2,207    | 502              | 18,690         |
|                                                       | Total | 171,021  | 12,146 | 20,060   | 5,002            | 208,229        | 45,429   | 3,325  | 6,330    | 1,472            | 56,556         |
| All heart disease (I00-I52)                           | Men   | 56,554   | 4,090  | 6,655    | 1,781            | 69,080         | 23,019   | 1,671  | 3,207    | 754              | 28,651         |
|                                                       | Women | 52,259   | 3,943  | 6,335    | 1,625            | 64,162         | 9,420    | 720    | 1,473    | 346              | 11,959         |
|                                                       | Total | 108,813  | 8,033  | 12,990   | 3,406            | 133,242        | 32,439   | 2,391  | 4,680    | 1,100            | 40,610         |
| Rheumatic heart disease (I00-I09)                     | Men   | 311      | 23     | 27       | 7                | 368            | 143      | 9      | 14       | 3                | 169            |
|                                                       | Women | 737      | 66     | 108      | 23               | 934            | 227      | 19     | 42       | 11               | 299            |
|                                                       | Total | 1,048    | 89     | 135      | 30               | 1,302          | 370      | 28     | 56       | 14               | 468            |
| Hypertensive disease (I10-I15)                        | Men   | 1,450    | 117    | 151      | 28               | 1,746          | 604      | 47     | 71       | 13               | 735            |
|                                                       | Women | 2,012    | 147    | 219      | 45               | 2,423          | 370      | 31     | 45       | 15               | 461            |
|                                                       | Total | 3,462    | 264    | 370      | 73               | 4,169          | 974      | 78     | 116      | 28               | 1,196          |
| Coronary heart disease (I20-I25)                      | Men   | 45,620   | 3,375  | 5,629    | 1,503            | 56,127         | 19,278   | 1,437  | 2,772    | 662              | 24,149         |
|                                                       | Women | 36,181   | 2,721  | 4,702    | 1,205            | 44,809         | 6,813    | 527    | 1,157    | 264              | 8,761          |
|                                                       | Total | 81,801   | 6,096  | 10,331   | 2,708            | 100,936        | 26,091   | 1,964  | 3,929    | 926              | 32,910         |
| Other heart disease including heart failure (I26-I52) | Men   | 8,958    | 575    | 848      | 243              | 10,624         | 2,994    | 178    | 350      | 76               | 3,598          |
|                                                       | Women | 13,491   | 1,009  | 1,306    | 352              | 16,158         | 2,010    | 143    | 229      | 56               | 2,438          |
|                                                       | Total | 22,449   | 1,584  | 2,154    | 595              | 26,782         | 5,004    | 321    | 579      | 132              | 6,036          |
| Stroke (I60-I69)                                      | Men   | 18,013   | 1,215  | 2,134    | 499              | 21,861         | 4,759    | 332    | 627      | 149              | 5,867          |
|                                                       | Women | 29,379   | 1,943  | 3,655    | 808              | 35,785         | 3,924    | 278    | 580      | 112              | 4,894          |
|                                                       | Total | 47,392   | 3,158  | 5,789    | 1,307            | 57,646         | 8,683    | 610    | 1,207    | 261              | 10,761         |
| Other diseases of the circulatory system (I70-I99)    | Men   | 7,410    | 468    | 645      | 150              | 8,673          | 2,777    | 215    | 289      | 67               | 3,348          |
|                                                       | Women | 7,406    | 487    | 636      | 139              | 8,668          | 1,530    | 109    | 154      | 44               | 1,837          |
|                                                       | Total | 14,816   | 955    | 1,281    | 289              | 17,341         | 4,307    | 324    | 443      | 111              | 5,185          |
| Diabetes (E10-E14)                                    | Men   | 2,448    | 188    | 347      | 97               | 3,080          | 991      | 65     | 179      | 38               | 1,273          |
|                                                       | Women | 2,795    | 212    | 398      | 127              | 3,532          | 678      | 44     | 144      | 31               | 897            |
|                                                       | Total | 5,243    | 400    | 745      | 224              | 6,612          | 1,669    | 109    | 323      | 69               | 2,170          |
| Cancer (C00-D48)                                      | Men   | 67,196   | 4,389  | 7,782    | 1,946            | 81,313         | 34,088   | 2,265  | 4,328    | 1,047            | 41,728         |
|                                                       | Women | 62,057   | 4,186  | 7,626    | 1,880            | 75,749         | 29,122   | 1,999  | 3,799    | 914              | 35,834         |
|                                                       | Total | 129,253  | 8,575  | 15,408   | 3,826            | 157,062        | 63,210   | 4,264  | 8,127    | 1,961            | 77,562         |
| Colo-rectal cancer (C18-C21)                          | Men   | 7,031    | 523    | 860      | 223              | 8,637          | 3,524    | 266    | 477      | 132              | 4,399          |
|                                                       | Women | 6,128    | 400    | 715      | 212              | 7,455          | 2,363    | 154    | 294      | 88               | 2,899          |
|                                                       | Total | 13,159   | 923    | 1,575    | 435              | 16,092         | 5,887    | 420    | 771      | 220              | 7,298          |
| Lung cancer (C33,C34)                                 | Men   | 15,692   | 1,065  | 2,195    | 505              | 19,457         | 8,562    | 596    | 1,301    | 293              | 10,752         |
|                                                       | Women | 11,119   | 756    | 1,814    | 319              | 14,008         | 5,593    | 433    | 978      | 179              | 7,183          |
|                                                       | Total | 26,811   | 1,821  | 4,009    | 824              | 33,465         | 14,155   | 1,029  | 2,279    | 472              | 17,935         |
| Breast cancer (C50)                                   | Women | 10,297   | 672    | 1,144    | 304              | 12,417         | 5,702    | 356    | 660      | 169              | 6,887          |
|                                                       | Total | 10,297   | 672    | 1,144    | 304              | 12,417         | 5,702    | 356    | 660      | 169              | 6,887          |
| Respiratory disease (J00-J99)                         | Men   | 30,689   | 1,962  | 3,190    | 866              | 36,707         | 8,302    | 530    | 1,047    | 268              | 10,147         |
|                                                       | Women | 37,216   | 2,459  | 3,903    | 1,055            | 44,633         | 6,101    | 445    | 902      | 184              | 7,632          |
|                                                       | Total | 67,905   | 4,421  | 7,093    | 1,921            | 81,340         | 14,403   | 975    | 1,949    | 452              | 17,779         |
| Injuries and poisoning (V01-Y98)                      | Men   | 10,009   | 690    | 1,346    | 511              | 12,556         | 7,760    | 548    | 1,064    | 446              | 9,818          |
|                                                       | Women | 6,409    | 401    | 866      | 250              | 7,926          | 2,781    | 162    | 417      | 143              | 3,503          |
|                                                       | Total | 16,418   | 1,091  | 2,212    | 761              | 20,482         | 10,541   | 710    | 1,481    | 589              | 13,321         |
| All other causes                                      | Men   | 35,637   | 2,207  | 4,423    | 1,107            | 43,374         | 15,832   | 956    | 2,507    | 582              | 19,877         |
|                                                       | Women | 54,201   | 3,322  | 5,806    | 1,383            | 64,712         | 11,592   | 745    | 1,724    | 378              | 14,439         |
|                                                       | Total | 89,838   | 5,529  | 10,229   | 2,490            | 108,086        | 27,424   | 1,701  | 4,231    | 960              | 34,316         |

Notes: ICD codes (10th revision) in parentheses.

British Heart Foundation Statistics Database [www.heartstats.org](http://www.heartstats.org) Source: England and Wales, Office for National Statistics (2006) Deaths registered by cause and area of residence, personal communication. Scotland, General Register Office (2006) Edinburgh, Deaths registered by cause and area of residence, personal communication. Northern Ireland, General Register Office (2006) Statistics and Research Agency: Northern Ireland, personal communication.

Figure 1.3a Deaths by cause, men, 2005, United Kingdom

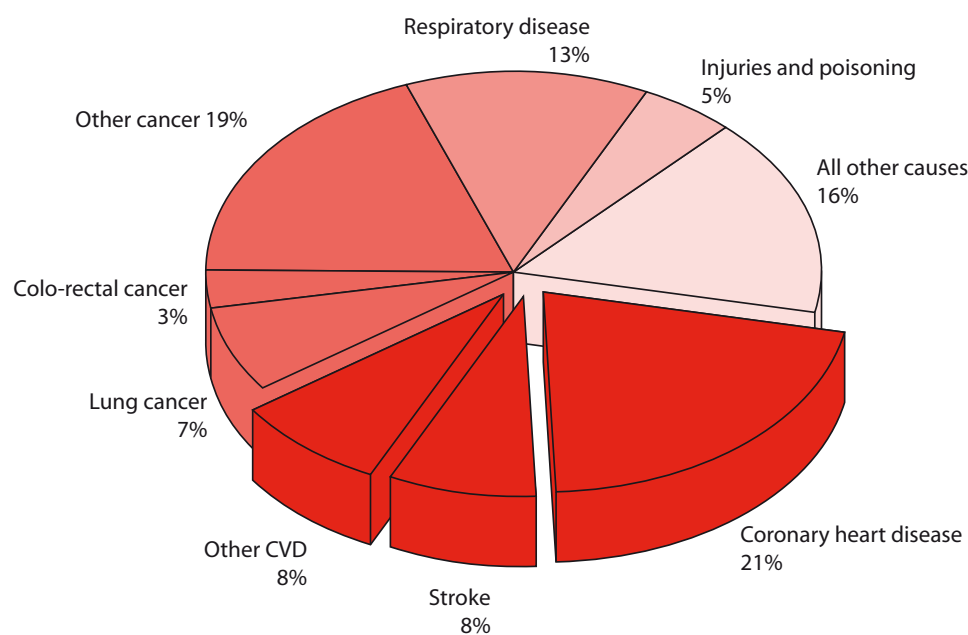


Figure 1.3b Deaths by cause, women, 2005, United Kingdom

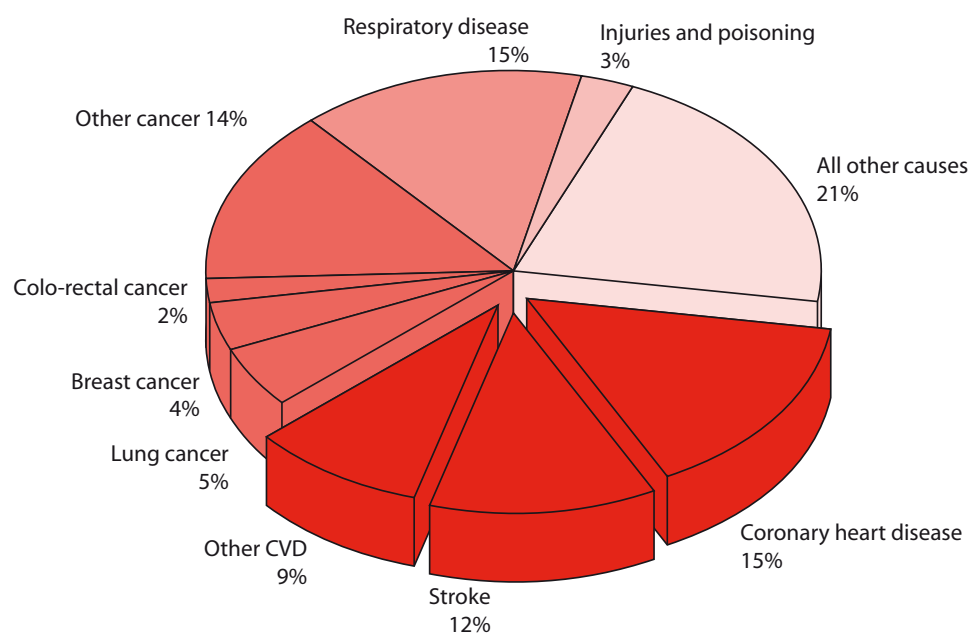


*Figure 1.3c Deaths by cause, men under 75, 2005, United Kingdom*

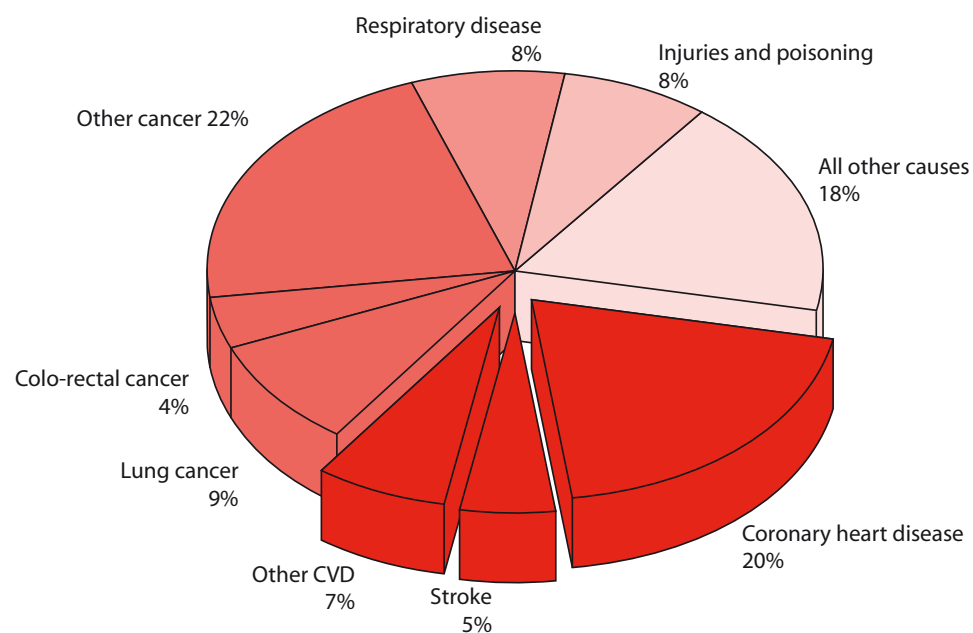


*Figure 1.3d Deaths by cause, women under 75, 2005, United Kingdom*

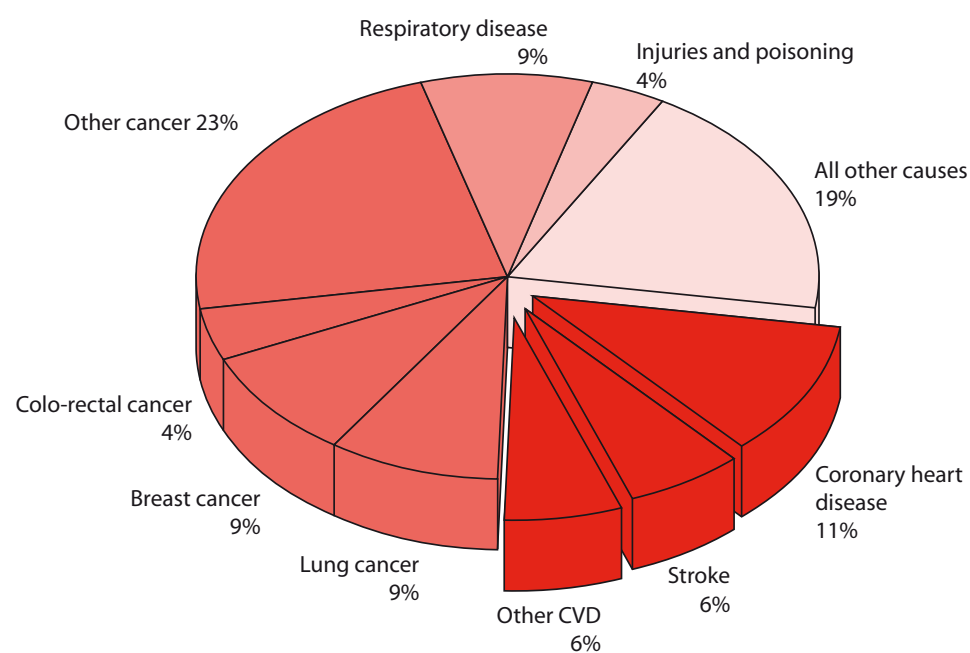


**Table 1.4** Age-specific death rates per 100,000 population from CHD by sex, 1968 to 2005, United Kingdom

|      | 35-44 |       | 45-54 |       | 55-64 |       | 65-74 |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | MEN   | WOMEN | MEN   | WOMEN | MEN   | WOMEN | MEN   | WOMEN |
| 1968 | 65    | 11    | 253   | 46    | 714   | 198   | 1,639 | 726   |
| 1969 | 63    | 11    | 262   | 47    | 728   | 202   | 1,660 | 731   |
| 1970 | 65    | 11    | 267   | 46    | 727   | 204   | 1,631 | 704   |
| 1971 | 69    | 10    | 280   | 50    | 724   | 200   | 1,634 | 698   |
| 1972 | 69    | 11    | 297   | 54    | 759   | 218   | 1,718 | 739   |
| 1973 | 66    | 11    | 296   | 56    | 755   | 220   | 1,692 | 731   |
| 1974 | 68    | 12    | 298   | 55    | 758   | 226   | 1,696 | 725   |
| 1975 | 63    | 11    | 298   | 54    | 742   | 215   | 1,684 | 717   |
| 1976 | 60    | 12    | 279   | 55    | 752   | 220   | 1,687 | 721   |
| 1977 | 61    | 11    | 281   | 53    | 732   | 209   | 1,678 | 714   |
| 1978 | 62    | 11    | 288   | 55    | 754   | 216   | 1,705 | 725   |
| 1979 | 57    | 9     | 286   | 57    | 749   | 215   | 1,665 | 706   |
| 1980 | 56    | 9     | 270   | 50    | 733   | 215   | 1,621 | 688   |
| 1981 | 53    | 9     | 260   | 49    | 702   | 203   | 1,601 | 692   |
| 1982 | 47    | 8     | 245   | 48    | 696   | 206   | 1,588 | 688   |
| 1983 | 46    | 7     | 242   | 46    | 705   | 213   | 1,618 | 692   |
| 1984 | 42    | 7     | 227   | 45    | 696   | 213   | 1,591 | 695   |
| 1985 | 43    | 7     | 221   | 43    | 687   | 213   | 1,601 | 702   |
| 1986 | 42    | 6     | 217   | 40    | 662   | 204   | 1,529 | 681   |
| 1987 | 41    | 6     | 201   | 39    | 638   | 201   | 1,489 | 661   |
| 1988 | 37    | 6     | 188   | 36    | 610   | 191   | 1,441 | 639   |
| 1989 | 37    | 6     | 170   | 32    | 567   | 180   | 1,373 | 627   |
| 1990 | 37    | 6     | 159   | 33    | 536   | 179   | 1,352 | 594   |
| 1991 | 34    | 6     | 153   | 30    | 512   | 169   | 1,312 | 593   |
| 1992 | 32    | 6     | 142   | 28    | 490   | 155   | 1,274 | 571   |
| 1993 | 29    | 5     | 136   | 26    | 478   | 147   | 1,266 | 567   |
| 1994 | 27    | 5     | 118   | 24    | 427   | 131   | 1,173 | 520   |
| 1995 | 26    | 5     | 117   | 24    | 408   | 124   | 1,133 | 498   |
| 1996 | 25    | 5     | 112   | 22    | 384   | 119   | 1,073 | 465   |
| 1997 | 23    | 5     | 107   | 21    | 361   | 110   | 983   | 434   |
| 1998 | 23    | 4     | 103   | 22    | 343   | 104   | 952   | 420   |
| 1999 | 22    | 5     | 97    | 20    | 317   | 94    | 902   | 387   |
| 2000 | 19    | 5     | 92    | 20    | 291   | 84    | 823   | 347   |
| 2001 | 20    | 4     | 93    | 19    | 271   | 79    | 763   | 328   |
| 2002 | 21    | 4     | 89    | 19    | 250   | 72    | 707   | 304   |
| 2003 | 19    | 5     | 85    | 18    | 238   | 66    | 660   | 275   |
| 2004 | 19    | 4     | 81    | 16    | 219   | 57    | 599   | 250   |
| 2005 | 19    | 4     | 73    | 16    | 204   | 54    | 558   | 225   |

Source: 1968 to 1999: World Health Organization (2002) [www3.who.int/whosis](http://www3.who.int/whosis)

From 2000: Office for National Statistics (personal communication) and [www.statistics.gov.uk](http://www.statistics.gov.uk)

Figure 1.4a Age-specific death rates from CHD, men, 1968 to 2005, United Kingdom, plotted as a percentage of the rate in 1968

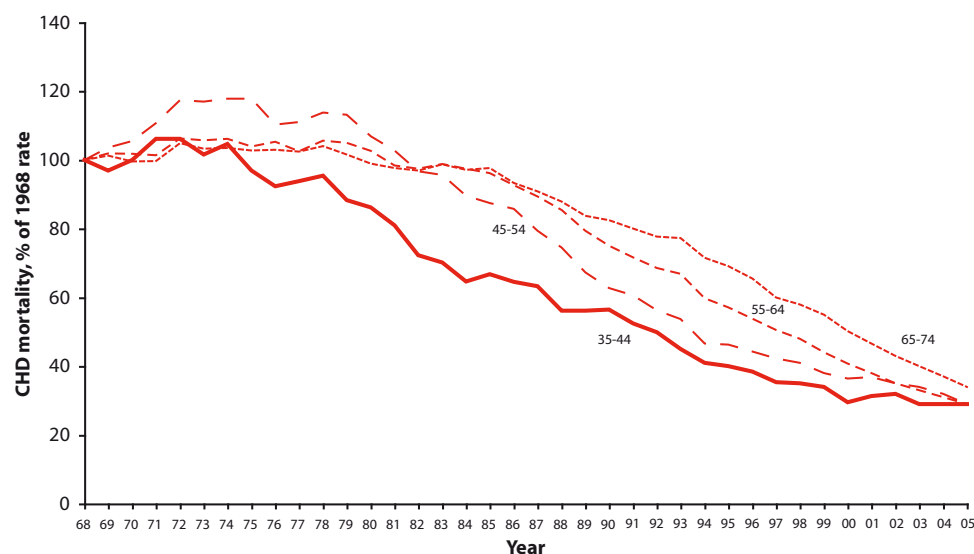


Figure 1.4b Age-specific death rates from CHD, women, 1968 to 2005, United Kingdom, plotted as a percentage of the rate in 1968

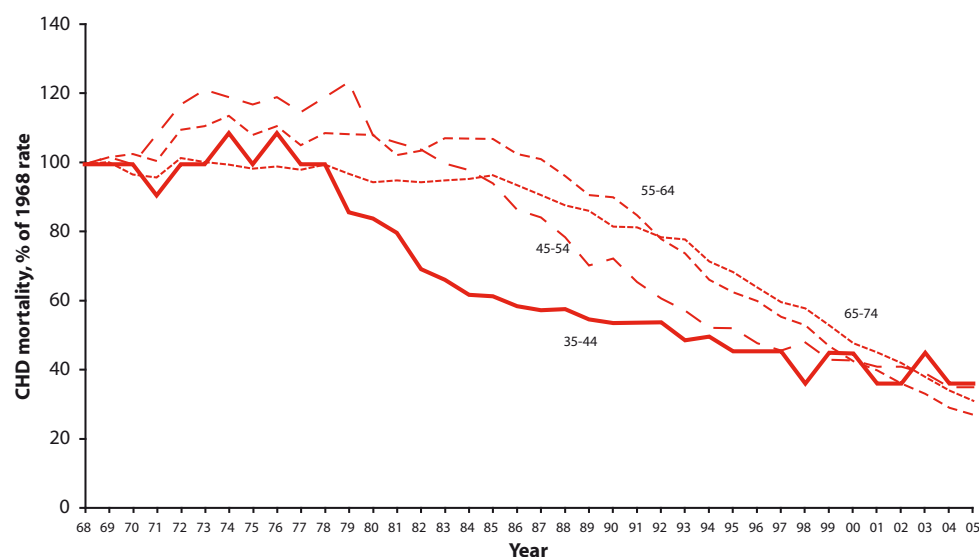


**Table 1.5** Age-standardised death rates per 100,000 population from CHD, 1968 to 2002, selected countries, the World

|                        | 1968 | 1970 | 1972 | 1974 | 1976 | 1978 | 1980 | 1982 | 1984 | 1986 | 1988 | 1990 | 1992 | 1994 | 1996 | 1998 | 2000 | 2002 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>MEN AGED 35-74</b>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Albania                |      |      |      |      |      |      |      |      |      | 126  |      | 140  | 115  | 163  | 147  | 162  |      |      |
| Argentina              |      | 364  |      |      |      | 281  | 245  | 201  | 208  | 189  | 185  | 170  | 159  | 143  | 140  | 139  | 127  |      |
| Armenia                |      |      |      |      |      |      |      | 408  |      | 429  | 460  | 495  | 524  | 458  | 486  | 464  | 464  | 501  |
| Australia              | 674  | 657  | 623  | 609  | 553  | 499  | 449  | 424  | 392  | 346  | 315  | 275  | 248  | 217  | 196  | 171  | 144  |      |
| Austria                |      | 334  | 335  | 341  | 359  | 349  | 311  | 329  | 315  | 290  | 262  | 253  | 249  | 241  | 226  | 218  | 194  | 164  |
| Azerbaijan             |      |      |      |      |      |      |      | 577  |      | 567  | 651  | 643  | 692  | 654  | 694  | 690  | 662  |      |
| Belarus                |      |      |      |      |      |      |      | 534  |      | 517  | 503  | 530  | 560  | 683  | 694  | 772  | 780  |      |
| Belgium                | 345  | 351  | 364  | 335  | 332  | 313  | 273  | 270  | 247  | 221  | 184  | 159  | 147  | 151  | 146  |      |      |      |
| Bulgaria               | 195  | 235  | 261  | 291  | 300  | 311  | 308  | 295  | 315  | 321  | 309  | 315  | 312  | 352  | 334  | 335  | 296  | 293  |
| Canada                 |      | 551  | 524  | 515  | 498  | 457  | 418  | 393  | 354  | 327  | 296  | 254  | 228  | 212  | 199  | 218  | 163  |      |
| Chile                  | 208  | 225  | 211  | 173  | 156  | 175  | 169  | 174  | 178  | 149  | 149  | 145  | 135  | 135  | 135  | 124  | 118  |      |
| Colombia               |      |      |      |      |      |      |      |      |      |      |      |      | 183  | 190  | 180  | 160  |      |      |
| Croatia                |      |      |      |      |      |      |      |      |      | 222  | 202  | 203  | 253  | 269  | 300  | 328  | 323  | 239  |
| Cuba                   | 274  | 240  | 211  | 255  | 256  | 290  | 280  | 255  | 264  | 264  | 286  | 281  | 250  | 241  | 244  | 228  | 201  |      |
| Czech Republic         |      |      |      |      |      |      |      |      |      | 543  | 505  | 533  | 487  | 442  | 391  | 328  | 294  | 259  |
| Czechoslovakia         | 408  | 459  | 442  | 460  | 458  | 464  | 471  | 469  | 513  | 514  | 482  | 526  |      |      |      |      |      |      |
| Denmark                |      | 430  | 454  | 445  | 465  | 443  | 438  | 404  | 392  | 370  | 342  | 315  | 289  | 239  | 204  | 174  |      |      |
| Estonia                |      |      |      |      |      |      |      | 616  |      | 653  | 603  | 648  | 659  | 744  | 600  | 593  | 522  | 523  |
| Finland                |      | 697  | 680  | 700  | 700  | 664  | 616  | 599  | 562  | 531  | 477  | 434  | 407  | 346  | 320  | 268  | 267  | 231  |
| France                 | 152  | 149  | 160  | 164  | 160  | 154  | 148  | 145  | 143  | 140  | 118  | 106  | 101  | 94   | 91   | 85   | 82   |      |
| Georgia                |      |      |      |      |      |      |      | 494  |      | 482  | 571  | 527  | 699  |      |      | 550  | 507  |      |
| Germany                |      |      |      |      |      |      |      |      |      |      |      | 253  | 251  | 237  | 218  | 200  | 177  |      |
| Germany, Dem Rep       |      |      |      | 231  | 236  | 244  | 274  | 272  | 280  | 273  | 273  | 289  |      |      |      |      |      |      |
| Germany, Fed Rep       | 317  | 325  | 346  | 348  | 362  | 354  | 341  | 336  | 328  | 298  | 270  | 245  |      |      |      |      |      |      |
| Greece                 | 128  | 135  | 155  | 161  | 188  | 192  | 181  | 185  | 181  | 180  | 190  | 187  | 181  | 168  | 176  | 170  | 165  |      |
| Hungary                |      | 349  | 360  | 361  | 372  | 420  | 418  | 463  | 464  | 459  | 438  | 435  | 458  | 452  | 441  | 428  | 387  | 344  |
| Iceland                |      |      | 461  | 469  | 456  | 399  | 453  | 388  | 421  | 296  | 334  | 264  | 249  | 251  | 203  | 154  | 161  |      |
| Ireland                | 455  | 495  | 522  | 548  | 526  | 542  | 521  | 515  | 503  | 505  | 462  | 421  | 381  | 368  | 332  | 302  | 253  |      |
| Israel                 |      |      |      |      | 434  | 395  | 347  | 356  | 310  | 305  | 255  | 211  | 219  | 199  | 150  | 149  |      |      |
| Italy                  | 230  | 225  | 224  | 235  | 249  | 249  | 221  | 211  | 203  | 191  | 172  | 159  | 153  | 145  | 133  | 128  | 108  |      |
| Japan                  | 92   | 94   | 84   | 84   | 78   | 74   | 74   | 67   | 63   | 55   | 52   | 49   | 46   | 49   | 58   | 56   | 54   | 53   |
| Kazakhstan             |      |      |      |      |      |      |      | 499  |      | 456  | 462  | 487  | 516  | 638  | 720  | 721  | 758  | 722  |
| Kyrgyzstan             |      |      |      |      |      |      |      | 437  |      | 384  | 391  | 394  | 389  | 517  | 500  | 477  | 490  | 528  |
| Latvia                 |      |      |      |      |      |      |      | 628  | 691  | 588  | 593  | 653  | 719  | 904  | 647  | 628  | 568  | 564  |
| Lithuania              |      |      |      |      |      |      |      | 508  |      | 522  | 521  | 585  | 629  | 663  | 549  | 457  | 424  | 489  |
| Luxembourg             |      |      |      |      |      |      | 291  | 329  | 319  | 260  | 258  | 228  | 199  | 184  | 189  | 146  | 145  |      |
| Macedonia, Fmr Yug Rep |      |      |      |      |      |      |      |      |      |      |      | 247  | 253  | 257  | 248  | 234  | 131  |      |
| Malta                  | 359  | 294  | 326  | 334  | 468  | 504  | 522  | 455  | 366  | 366  | 365  | 309  | 309  | 246  | 251  | 232  | 240  | 193  |
| Mauritius              |      | 272  | 208  | 287  | 361  | 358  | 452  | 425  | 406  | 400  | 386  | 401  | 425  | 424  | 414  | 473  | 396  |      |
| Mexico                 | 96   | 96   | 88   | 100  | 97   | 104  | 115  | 106  |      | 104  | 123  | 131  | 133  | 138  | 138  | 139  | 130  |      |
| Moldova, Rep of        |      |      |      |      |      |      |      | 607  |      | 509  | 455  | 452  | 469  | 600  | 626  | 579  | 650  | 638  |
| Netherlands            |      | 400  | 408  | 372  | 393  | 379  | 346  | 333  | 318  | 309  | 268  | 240  | 210  | 196  | 182  | 163  | 141  | 116  |
| New Zealand            | 637  | 609  | 575  | 574  | 554  | 529  | 508  | 494  | 455  | 447  | 402  | 350  | 348  | 276  | 263  | 222  | 190  |      |
| Norway                 |      | 445  | 430  | 428  | 415  | 414  | 411  | 407  | 405  | 404  | 369  | 345  | 297  | 263  | 221  | 203  | 158  |      |
| Poland                 |      | 179  | 205  | 212  | 244  | 263  | 277  | 266  | 284  | 307  | 310  | 326  | 327  | 281  | 267  |      | 272  | 236  |
| Portugal               |      |      | 185  | 177  | 188  | 177  | 173  | 146  | 159  | 146  | 151  | 144  | 142  | 128  | 125  | 122  | 103  | 105  |
| Romania                |      | 138  | 151  | 156  | 172  | 195  | 215  | 227  | 258  | 267  | 272  | 282  | 337  | 368  | 388  | 361  | 335  | 342  |
| Russian Federation     |      |      |      |      |      |      |      | 575  | 612  | 533  | 534  | 556  | 591  | 816  | 675  | 639  | 771  | 835  |
| Slovakia               |      |      |      |      |      |      |      |      |      |      |      |      | 463  | 470  | 1024 | 398  | 397  |      |
| Slovenia               |      |      |      |      |      |      |      |      |      | 230  | 187  | 183  | 220  | 219  | 178  | 184  | 162  | 137  |
| Spain                  | 99   |      | 137  | 164  | 165  | 161  | 151  | 150  | 151  | 146  | 141  | 131  | 131  | 125  | 128  | 121  | 113  |      |
| Sweden                 |      | 397  | 418  | 423  | 436  | 436  | 440  | 417  | 384  | 372  | 334  | 292  | 263  | 240  | 216  | 190  | 171  |      |
| Switzerland            |      | 227  | 224  | 221  | 239  | 246  | 236  | 225  | 224  | 205  | 190  | 181  | 170  | 147  | 137  | 132  | 113  | 157  |
| Tajikistan             |      |      |      |      |      |      |      | 374  |      | 333  | 357  | 363  | 348  | 404  |      |      |      |      |
| Trinidad & Tobago      |      | 362  | 366  | 344  | 344  | 327  | 351  | 388  | 416  | 391  | 356  | 346  | 319  | 352  | 364  |      |      |      |
| Turkmenistan           |      |      |      |      |      |      |      | 552  |      | 549  | 590  | 638  | 619  | 725  | 770  | 638  |      |      |
| Ukraine                |      |      |      |      |      |      |      | 625  |      | 521  | 486  | 512  | 588  | 687  | 749  | 725  | 839  | 867  |
| United Kingdom         | 517  | 523  | 554  | 551  | 540  | 546  | 521  | 497  | 490  | 470  | 434  | 393  | 364  | 325  | 297  | 265  | 229  | 201  |
| Uruguay                | 312  | 314  | 353  | 338  | 321  | 314  | 280  | 236  | 242  | 214  | 220  | 200  |      | 181  | 154  | 151  | 140  |      |
| USA                    | 694  | 657  | 634  | 588  | 540  | 504  | 425  | 397  | 359  | 323  | 292  | 273  | 253  | 239  | 224  | 203  | 216  |      |
| USSR                   |      |      |      |      |      |      |      | 575  | 606  | 521  | 516  | 538  |      |      |      |      |      |      |
| Uzbekistan             |      |      |      |      |      |      |      | 507  |      | 460  | 462  | 480  | 534  | 538  | 546  | 540  | 570  |      |
| Venezuela              | 250  | 257  | 260  | 248  | 256  | 255  | 207  | 223  |      | 186  | 217  | 249  | 262  | 247  | 246  | 239  | 229  |      |
| Yugoslavia, Fmr        | 118  | 137  | 151  | 170  | 184  | 182  | 196  | 187  | 210  | 223  | 205  | 200  |      |      |      |      |      |      |

Table 1.5 continued

|                         | 1968 | 1970 | 1972 | 1974 | 1976 | 1978 | 1980 | 1982 | 1984 | 1986 | 1988 | 1990 | 1992 | 1994 | 1996 | 1998 | 2000 | 2002 |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>WOMEN AGED 35-74</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Albania                 |      |      |      |      |      |      |      |      |      |      | 48   |      | 48   | 40   | 52   | 57   | 71   |      |
| Argentina               |      | 141  |      |      |      | 99   | 81   | 68   | 71   | 61   | 59   | 53   | 47   | 42   | 39   | 42   | 38   |      |
| Armenia                 |      |      |      |      |      |      |      | 202  |      | 210  | 209  | 208  | 248  | 192  | 205  | 200  | 197  |      |
| Australia               | 258  | 257  | 235  | 234  | 200  | 186  | 160  | 154  | 145  | 134  | 117  | 106  | 93   | 79   | 69   | 61   | 52   |      |
| Austria                 |      | 117  | 120  | 121  | 121  | 119  | 99   | 101  | 102  | 94   | 84   | 80   | 81   | 80   | 81   | 70   | 59   |      |
| Azerbaijan              |      |      |      |      |      |      |      | 267  |      | 284  | 303  | 301  | 357  | 307  | 329  | 325  | 340  |      |
| Belarus                 |      |      |      |      |      |      |      | 249  |      | 244  | 223  | 211  | 220  | 262  | 290  | 290  | 307  |      |
| Belgium                 | 111  | 121  | 117  | 112  | 107  | 100  | 90   | 86   | 83   | 72   | 61   | 48   | 46   | 53   | 47   |      |      |      |
| Bulgaria                | 124  | 150  | 157  | 168  | 162  | 162  | 148  | 137  | 142  | 134  | 126  | 126  | 122  | 132  | 134  | 128  | 116  | 119  |
| Canada                  |      | 196  | 180  | 181  | 167  | 155  | 144  | 134  | 123  | 112  | 100  | 88   | 77   | 75   | 67   | 68   | 55   |      |
| Chile                   | 120  | 126  | 114  | 93   | 80   | 79   | 79   | 72   | 76   | 69   | 66   | 66   | 61   | 56   | 50   | 47   | 44   |      |
| Colombia                |      |      |      |      |      |      |      |      |      |      |      |      | 109  | 110  | 102  | 92   |      |      |
| Croatia                 |      |      |      |      |      |      |      |      |      | 66   | 70   | 60   | 97   | 100  | 106  | 113  | 108  |      |
| Cuba                    | 157  | 161  | 139  | 177  | 175  | 191  | 172  | 164  | 161  | 160  | 177  | 174  | 158  | 142  | 145  | 136  | 111  |      |
| Czech Republic          |      |      |      |      |      |      |      |      |      | 202  | 174  | 179  | 162  | 162  | 149  | 120  | 106  | 97   |
| Czechoslovakia          | 164  | 184  | 177  | 183  | 181  | 172  | 173  | 176  | 191  | 191  | 169  | 181  |      |      |      |      |      |      |
| Denmark                 |      | 157  | 159  | 158  | 159  | 141  | 142  | 133  | 132  | 130  | 116  | 108  | 98   | 83   | 76   | 63   |      |      |
| Estonia                 |      |      |      |      |      |      |      | 236  |      | 248  | 219  | 236  | 212  | 252  | 205  | 203  | 191  | 164  |
| Finland                 |      | 192  | 193  | 184  | 188  | 177  | 161  | 162  | 155  | 151  | 141  | 126  | 109  | 98   | 84   | 81   | 68   | 58   |
| France                  | 49   | 50   | 52   | 50   | 48   | 44   | 41   | 42   | 41   | 38   | 30   | 27   | 26   | 24   | 22   | 21   | 18   |      |
| Georgia                 |      |      |      |      |      |      |      | 241  |      | 235  | 264  | 247  | 328  |      |      | 240  | 220  |      |
| Germany                 |      |      |      |      |      |      |      |      |      |      |      | 80   | 82   | 79   | 75   | 69   | 59   |      |
| Germany, Dem Rep        |      |      |      | 79   | 82   | 83   | 95   | 91   | 99   | 99   | 97   | 97   |      |      |      |      |      |      |
| Germany, Fed Rep        | 94   | 100  | 106  | 108  | 112  | 106  | 99   | 101  | 100  | 93   | 84   | 76   |      |      |      |      |      |      |
| Greece                  | 42   | 47   | 55   | 59   | 60   | 60   | 52   | 53   | 54   | 52   | 59   | 57   | 55   | 48   | 50   | 50   | 46   |      |
| Hungary                 |      | 161  | 167  | 165  | 162  | 168  | 157  | 170  | 170  | 174  | 161  | 162  | 168  | 173  | 169  | 164  | 150  | 138  |
| Iceland                 |      |      | 128  | 106  | 95   | 124  | 117  | 122  | 102  | 83   | 96   | 84   | 95   | 89   | 52   | 42   | 60   |      |
| Ireland                 | 196  | 199  | 213  | 225  | 202  | 200  | 192  | 186  | 186  | 176  | 160  | 142  | 134  | 120  | 107  | 99   | 78   |      |
| Israel                  |      |      |      |      | 215  | 207  | 153  | 179  | 141  | 141  | 121  | 100  | 89   | 93   | 65   | 63   |      |      |
| Italy                   | 87   | 87   | 85   | 85   | 84   | 82   | 68   | 63   | 61   | 56   | 51   | 46   | 43   | 43   | 39   | 37   | 32   |      |
| Japan                   | 45   | 47   | 41   | 42   | 37   | 33   | 32   | 29   | 27   | 23   | 21   | 19   | 17   | 18   | 21   | 19   | 17   |      |
| Kazakhstan              |      |      |      |      |      |      |      | 215  |      | 210  | 210  | 196  | 212  | 266  | 296  | 286  | 306  | 290  |
| Kyrgyzstan              |      |      |      |      |      |      |      | 204  |      | 198  | 208  | 193  | 188  | 250  | 249  | 227  | 243  | 267  |
| Latvia                  |      |      |      |      |      |      |      | 250  | 261  | 242  | 229  | 226  | 229  | 292  | 199  | 208  | 178  | 167  |
| Lithuania               |      |      |      |      |      |      |      | 209  |      | 207  | 204  | 208  | 210  | 223  | 188  | 157  | 135  | 146  |
| Luxembourg              |      |      |      |      |      |      | 107  | 85   | 101  | 91   | 60   | 53   | 42   | 51   | 36   | 48   | 36   | 41   |
| Macedonia, Fmr Yug Rep  |      |      |      |      |      |      |      |      |      |      |      | 89   | 94   | 104  | 107  | 103  |      |      |
| Malta                   | 158  | 107  | 139  | 107  | 169  | 248  | 259  | 201  | 148  | 176  | 146  | 153  | 156  | 126  | 105  | 73   | 101  | 82   |
| Mauritius               |      | 87   | 96   | 103  | 110  | 140  | 152  | 168  | 183  | 173  | 183  | 177  | 167  | 189  | 197  | 231  | 222  |      |
| Mexico                  | 55   | 57   | 52   | 54   | 52   | 56   | 58   | 50   |      | 50   | 58   | 66   | 68   | 73   | 74   | 72   | 71   |      |
| Moldova, Rep of         |      |      |      |      |      |      |      | 403  |      | 364  | 324  | 284  | 285  | 366  | 409  | 359  | 385  | 383  |
| Netherlands             |      | 125  | 126  | 116  | 118  | 112  | 102  | 100  | 97   | 90   | 79   | 72   | 70   | 67   | 64   | 56   | 48   | 42   |
| New Zealand             | 241  | 223  | 229  | 215  | 206  | 196  | 208  | 186  | 180  | 165  | 148  | 138  | 124  | 109  | 92   | 71   | 71   |      |
| Norway                  |      | 134  | 129  | 128  | 116  | 114  | 114  | 111  | 103  | 106  | 103  | 97   | 87   | 80   | 63   | 57   | 56   |      |
| Poland                  |      | 55   | 59   | 61   | 69   | 76   | 74   | 71   | 77   | 83   | 83   | 90   | 94   | 84   | 79   |      | 86   | 70   |
| Portugal                |      |      | 81   | 75   | 72   | 69   | 62   | 59   | 57   | 56   | 56   | 52   | 48   | 47   | 44   | 40   | 38   | 34   |
| Romania                 |      | 75   | 77   | 80   | 89   | 97   | 111  | 116  | 130  | 138  | 135  | 133  | 147  | 164  | 176  | 170  | 154  | 152  |
| Russian Federation      |      |      |      |      |      |      |      | 229  | 252  | 222  | 211  | 204  | 209  | 281  | 239  | 230  | 267  | 288  |
| Slovakia                |      |      |      |      |      |      |      |      |      |      |      |      | 174  | 185  | 179  | 160  | 162  |      |
| Slovenia                |      |      |      |      |      |      |      |      |      | 64   | 60   | 62   | 67   | 72   | 59   | 64   | 49   | 39   |
| Spain                   | 33   |      | 42   | 50   | 50   | 48   | 44   | 44   | 42   | 40   | 39   | 37   | 36   | 34   | 33   | 32   | 29   |      |
| Sweden                  |      | 147  | 149  | 143  | 137  | 133  | 129  | 121  | 111  | 108  | 99   | 88   | 85   | 72   | 68   | 59   | 54   |      |
| Switzerland             |      | 67   | 63   | 62   | 63   | 69   | 62   | 60   | 56   | 51   | 51   | 48   | 46   | 41   | 40   | 37   | 52   |      |
| Tajikistan              |      |      |      |      |      |      |      | 223  |      | 195  | 222  | 208  | 201  | 264  |      |      |      |      |
| Trinidad & Tobago       |      | 220  | 222  | 201  | 175  | 224  | 201  | 230  | 225  | 209  | 222  | 235  | 241  | 257  |      | 226  |      |      |
| Turkmenistan            |      |      |      |      |      |      |      | 271  |      | 301  | 314  | 343  | 361  | 430  | 433  | 332  |      |      |
| Ukraine                 |      |      |      |      |      |      |      | 309  |      | 270  | 241  | 226  | 257  | 315  | 339  | 333  | 373  | 381  |
| United Kingdom          | 175  | 173  | 184  | 185  | 183  | 182  | 174  | 171  | 172  | 167  | 156  | 145  | 134  | 120  | 107  | 97   | 80   | 71   |
| Uruguay                 | 134  | 138  | 150  | 156  | 116  | 119  | 97   | 91   | 88   | 73   | 78   | 74   |      | 58   | 51   | 52   | 45   |      |
| USA                     | 273  | 257  | 242  | 220  | 197  | 185  | 156  | 147  | 139  | 127  | 118  | 108  | 101  | 96   | 92   | 84   | 90   |      |
| USSR                    |      |      |      |      |      |      |      | 252  | 272  | 238  | 225  | 216  |      |      |      |      |      |      |
| Uzbekistan              |      |      |      |      |      |      |      | 273  |      | 272  | 270  | 270  | 315  | 340  | 327  | 351  | 361  |      |
| Venezuela               | 147  | 138  | 145  | 142  | 137  | 131  | 107  | 109  |      | 98   | 109  | 124  | 128  | 122  | 118  | 114  | 109  |      |
| Yugoslavia, Fmr         | 59   | 63   | 69   | 77   | 89   | 81   | 80   | 71   | 83   | 82   | 77   | 73   | 66   |      |      |      |      |      |

Notes: ICD codes 410-414 (8th and 9th Revision), I20-I25 (10th Revision). Age-standardised using the European Standard Population.

Source: World Health Organization (2004) [www3.who.int/whosis](http://www3.who.int/whosis).

*Figure 1.5a Death rates from CHD, men and women aged 35 to 74, 2000, selected countries*

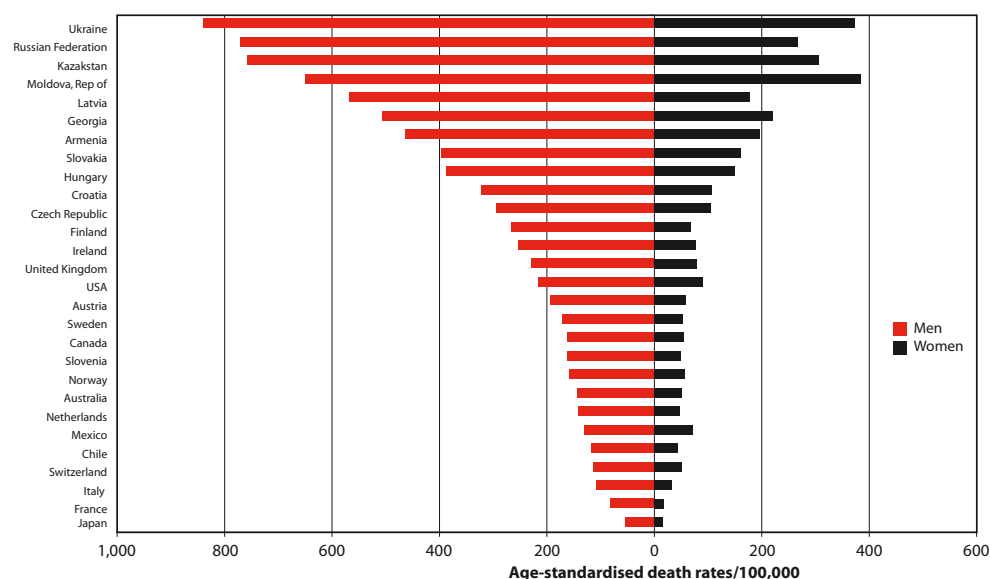


*Figure 1.5b Changes in death rates from CHD, men and women aged 35 to 74, between 1990 and 2000, selected countries*

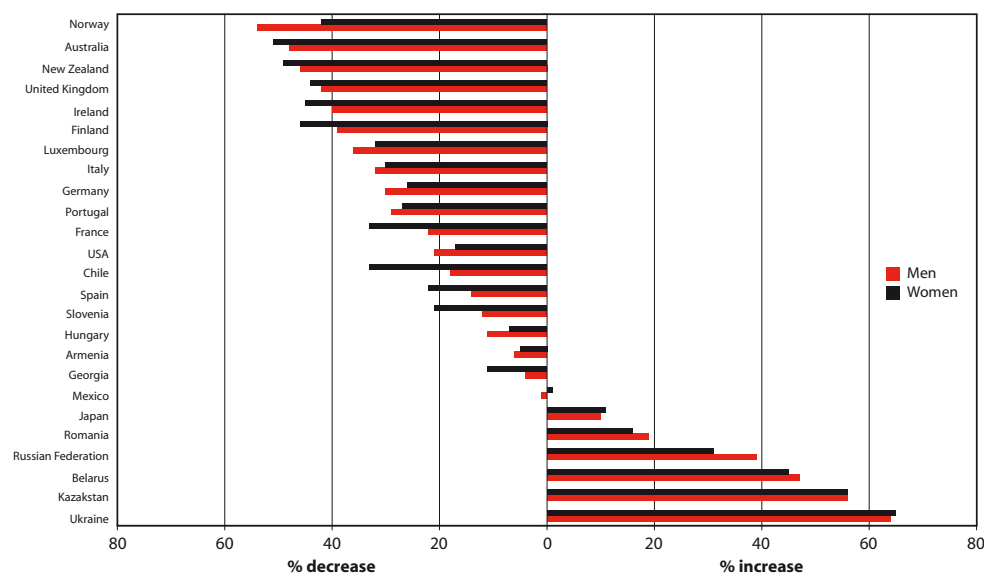


**Table 1.6** Age-standardised death rates from CHD per 100,000 population by country and Standard Region, 1978 to 1996, and by country and Government Office Region, 1997 to 2005, United Kingdom

|                  | 1978                     | 1980 | 1982 | 1984 | 1986 | 1988 | 1990 | 1992 | 1994 | 1996 | MEN AGED 35-74   |                          |     |     |     |     |     |     |     |  |
|------------------|--------------------------|------|------|------|------|------|------|------|------|------|------------------|--------------------------|-----|-----|-----|-----|-----|-----|-----|--|
| MEN AGED 35-74   | United Kingdom           | 578  | 521  | 497  | 490  | 470  | 434  | 393  | 364  | 325  | 292              | United Kingdom           |     |     |     |     |     |     |     |  |
|                  | England                  | 523  | 501  | 478  | 471  | 449  | 414  | 377  | 349  | 307  | 281              | England                  |     |     |     |     |     |     |     |  |
|                  | North                    | 613  | 594  | 562  | 576  | 539  | 517  | 468  | 448  | 375  | 337              | North East               |     |     |     |     |     |     |     |  |
|                  | Yorkshire and Humberside | 603  | 559  | 545  | 532  | 528  | 490  | 438  | 395  | 342  | 310              | North West               |     |     |     |     |     |     |     |  |
|                  | East Midlands            | 535  | 502  | 490  | 475  | 445  | 427  | 384  | 351  | 300  | 281              | East Midlands            |     |     |     |     |     |     |     |  |
|                  | West Midlands            | 519  | 500  | 498  | 493  | 480  | 436  | 416  | 371  | 320  | 308              | West Midlands            |     |     |     |     |     |     |     |  |
|                  | East Anglia              | 462  | 432  | 385  | 420  | 382  | 335  | 305  | 290  | 270  | 240              | East                     |     |     |     |     |     |     |     |  |
|                  | South East               | 464  | 450  | 421  | 410  | 385  | 349  | 319  | 303  | 272  | 250              | South East               |     |     |     |     |     |     |     |  |
|                  | South West               | 489  | 474  | 434  | 428  | 418  | 368  | 332  | 306  | 274  | 243              | London                   |     |     |     |     |     |     |     |  |
| Wales            | 629                      | 582  | 533  | 518  | 501  | 467  | 427  | 379  | 344  | 318  | South West       |                          |     |     |     |     |     |     |     |  |
| Scotland         | 656                      | 616  | 606  | 595  | 581  | 538  | 481  | 458  | 408  | 371  | Wales            |                          |     |     |     |     |     |     |     |  |
| Northern Ireland | 653                      | 658  | 571  | 598  | 602  | 562  | 483  | 437  | 380  | 338  | Scotland         |                          |     |     |     |     |     |     |     |  |
|                  |                          |      |      |      |      |      |      |      |      |      | Northern Ireland |                          |     |     |     |     |     |     |     |  |
| WOMEN AGED 35-74 |                          |      |      |      |      |      |      |      |      |      |                  |                          |     |     |     |     |     |     |     |  |
| WOMEN AGED 35-74 | United Kingdom           | 202  | 174  | 171  | 172  | 167  | 156  | 145  | 134  | 120  | 104              | United Kingdom           |     |     |     |     |     |     |     |  |
|                  | England                  | 171  | 163  | 160  | 162  | 158  | 146  | 137  | 127  | 109  | 99               | England                  |     |     |     |     |     |     |     |  |
|                  | North                    | 235  | 217  | 220  | 222  | 210  | 209  | 196  | 176  | 158  | 134              | North East               |     |     |     |     |     |     |     |  |
|                  | Yorkshire and Humberside | 205  | 192  | 196  | 205  | 189  | 183  | 173  | 155  | 125  | 116              | Yorkshire and Humberside |     |     |     |     |     |     |     |  |
|                  | North West               | 220  | 210  | 205  | 210  | 205  | 194  | 178  | 167  | 143  | 129              | North West               |     |     |     |     |     |     |     |  |
|                  | East Midlands            | 170  | 165  | 161  | 171  | 167  | 151  | 141  | 127  | 105  | 99               | East Midlands            |     |     |     |     |     |     |     |  |
|                  | West Midlands            | 177  | 167  | 167  | 175  | 167  | 161  | 146  | 134  | 115  | 110              | West Midlands            |     |     |     |     |     |     |     |  |
|                  | East Anglia              | 145  | 134  | 124  | 127  | 123  | 104  | 100  | 94   | 84   | 76               | East                     |     |     |     |     |     |     |     |  |
|                  | South East               | 139  | 134  | 131  | 130  | 127  | 114  | 107  | 104  | 90   | 81               | South East               |     |     |     |     |     |     |     |  |
| South West       | 147                      | 136  | 126  | 137  | 133  | 112  | 113  | 97   | 86   | 77   | London           |                          |     |     |     |     |     |     |     |  |
| Wales            | 195                      | 204  | 184  | 187  | 182  | 166  | 154  | 142  | 127  | 112  | South West       |                          |     |     |     |     |     |     |     |  |
| Scotland         | 256                      | 241  | 245  | 228  | 220  | 219  | 201  | 182  | 160  | 140  | Wales            |                          |     |     |     |     |     |     |     |  |
| Northern Ireland | 233                      | 228  | 226  | 204  | 207  | 209  | 177  | 168  | 153  | 127  | Scotland         |                          |     |     |     |     |     |     |     |  |
|                  |                          |      |      |      |      |      |      |      |      |      | Northern Ireland |                          |     |     |     |     |     |     |     |  |
|                  |                          |      |      |      |      |      |      |      |      |      | 197              | 198                      | 199 | 200 | 201 | 202 | 203 | 204 | 205 |  |

Notes: ICD-9 codes 410-414 for pre-2001 data, ICD-10 codes I20-25 thereafter.

Age-standardised using the European Standard Population. Government Office Regions replaced Standard regions in England in 1997.

Source: Pre 1997: Office for Population Censuses and Surveys (1994) Mortality Statistics 1992, DH5 series, HMSO: London and previous editions;

Office for National Statistics 1993-1996 figures, personal communication.

1997-2005: England and Wales: Office for National Statistics, personal communication.

Scotland and Northern Ireland: raw data from the General Register Office for Scotland, and the National Statistics and Research Agency Northern Ireland.

**Table 1.7** Numbers of deaths and age-standardised death rates from CHD for men and women under 65 by local authority, 2003/05, United Kingdom

| Map reference | Local authority         | Men                        |                                      | Women                      |                                      | Map reference | Local authority               | Men                        |                                      | Women                      |                                      |
|---------------|-------------------------|----------------------------|--------------------------------------|----------------------------|--------------------------------------|---------------|-------------------------------|----------------------------|--------------------------------------|----------------------------|--------------------------------------|
|               |                         | Number of deaths 2003-2005 | Age standardised death rate/ 100,000 | Number of deaths 2003-2005 | Age standardised death rate/ 100,000 |               |                               | Number of deaths 2003-2005 | Age standardised death rate/ 100,000 | Number of deaths 2003-2005 | Age standardised death rate/ 100,000 |
| ENGLAND       |                         | 27,505                     | 41.89                                | 6,848                      | 10.09                                | 90            | Lewisham                      | 105                        | 44.13                                | 24                         | 9.33                                 |
| A             | South East              | 3,734                      | 34.25                                | 848                        | 7.55                                 | 91            | Merton                        | 57                         | 27.81                                | 14                         | 6.54                                 |
| 1             | Medway Towns UA         | 158                        | 48.00                                | 33                         | 10.26                                | 92            | Newham                        | 137                        | 64.06                                | 44                         | 20.64                                |
| 2             | Bracknell Forest UA     | 28                         | 20.67                                | 8                          | 5.87                                 | 93            | Redbridge                     | 109                        | 37.91                                | 25                         | 8.54                                 |
| 3             | West Berkshire UA       | 63                         | 31.03                                | 16                         | 7.95                                 | 94            | Richmond upon Thames          | 59                         | 26.66                                | 14                         | 6.47                                 |
| 4             | Reading UA              | 74                         | 47.48                                | 11                         | 7.21                                 | 95            | Southwark                     | 100                        | 42.72                                | 25                         | 9.64                                 |
| 5             | Slough                  | 69                         | 51.40                                | 18                         | 15.20                                | 96            | Sutton                        | 60                         | 28.78                                | 9                          | 3.96                                 |
| 6             | Windsor & Maidenhead UA | 66                         | 36.37                                | 9                          | 4.61                                 | 97            | Tower Hamlets                 | 115                        | 70.84                                | 25                         | 16.19                                |
| 7             | Wokingham UA            | 50                         | 24.00                                | 6                          | 2.85                                 | 98            | Waltham Forest                | 132                        | 57.67                                | 42                         | 17.68                                |
| 8             | Milton Keynes UA        | 99                         | 36.19                                | 25                         | 9.39                                 | 99            | Wandsworth                    | 93                         | 41.39                                | 36                         | 13.83                                |
| 9             | Brighton & Hove UA      | 115                        | 40.63                                | 31                         | 10.81                                | 100           | Westminster                   | 74                         | 31.82                                | 19                         | 8.05                                 |
| 10            | Portsmouth UA           | 111                        | 51.06                                | 20                         | 8.97                                 | B             | South West                    | 2,432                      | 34.33                                | 578                        | 7.81                                 |
| 11            | Southampton UA          | 130                        | 51.69                                | 25                         | 10.46                                | 101           | Bath & North East Somerset UA | 66                         | 29.44                                | 23                         | 9.66                                 |
| 12            | Isle of Wight UA        | 87                         | 41.12                                | 14                         | 6.26                                 | 102           | Bristol UA                    | 212                        | 47.75                                | 44                         | 9.85                                 |
| 13            | Aylesbury Vale          | 79                         | 34.03                                | 20                         | 8.32                                 | 103           | North Somerset UA             | 115                        | 38.73                                | 24                         | 7.94                                 |
| 14            | Chiltern                | 27                         | 20.64                                | 10                         | 6.95                                 | 104           | South Gloucestershire UA      | 122                        | 35.82                                | 21                         | 6.10                                 |
| 15            | South Bucks             | 21                         | 22.18                                | 5                          | 5.39                                 | 105           | Plymouth UA                   | 153                        | 49.28                                | 46                         | 13.99                                |
| 16            | Wycombe                 | 50                         | 22.93                                | 13                         | 5.84                                 | 106           | Torbay UA                     | 103                        | 53.82                                | 21                         | 10.00                                |
| 17            | Eastbourne              | 46                         | 39.25                                | 15                         | 11.51                                | 107           | Bournemouth UA                | 56                         | 27.31                                | 11                         | 5.39                                 |
| 18            | Hastings                | 52                         | 45.03                                | 12                         | 10.37                                | 108           | Poole UA                      | 47                         | 24.76                                | 11                         | 5.27                                 |
| 19            | Lewes                   | 40                         | 30.19                                | 15                         | 10.58                                | 109           | Swindon UA                    | 82                         | 35.89                                | 26                         | 11.45                                |
| 20            | Rother                  | 37                         | 28.80                                | 11                         | 7.60                                 | 110           | Caradon                       | 44                         | 33.93                                | 10                         | 6.88                                 |
| 21            | Wealden                 | 74                         | 34.92                                | 12                         | 5.17                                 | 111           | Carrick                       | 40                         | 30.23                                | 12                         | 8.61                                 |
| 22            | Basingstoke & Deane     | 89                         | 41.91                                | 17                         | 7.94                                 | 112           | Kerrier                       | 56                         | 38.19                                | 7                          | 4.53                                 |
| 23            | East Hampshire          | 47                         | 28.77                                | 8                          | 4.87                                 | 113           | North Cornwall                | 54                         | 42.13                                | 11                         | 7.17                                 |
| 24            | Eastleigh               | 52                         | 32.14                                | 11                         | 7.12                                 | 114           | Penwith                       | 41                         | 39.94                                | 8                          | 7.64                                 |
| 25            | Fareham                 | 48                         | 30.91                                | 5                          | 2.86                                 | 115           | Restormel                     | 60                         | 40.79                                | 20                         | 12.42                                |
| 26            | Gosport                 | 38                         | 39.18                                | 9                          | 8.31                                 | 116           | Isles of Scilly               | 1                          | 18.73                                | 0                          | 0.00                                 |
| 27            | Hart                    | 30                         | 25.10                                | 3                          | 2.56                                 | 117           | East Devon                    | 52                         | 26.24                                | 9                          | 4.51                                 |
| 28            | Havant                  | 56                         | 33.62                                | 15                         | 8.66                                 | 118           | Exeter                        | 49                         | 36.56                                | 16                         | 11.41                                |
| 29            | New Forest              | 81                         | 31.44                                | 20                         | 6.96                                 | 119           | Mid Devon                     | 28                         | 24.70                                | 15                         | 13.03                                |
| 30            | Rushmoor                | 43                         | 40.36                                | 10                         | 10.02                                | 120           | North Devon                   | 64                         | 48.21                                | 8                          | 6.03                                 |
| 31            | Test Valley             | 55                         | 34.77                                | 13                         | 7.98                                 | 121           | South Hams                    | 30                         | 22.85                                | 6                          | 3.82                                 |
| 32            | Winchester              | 34                         | 21.41                                | 5                          | 3.32                                 | 122           | Teignbridge                   | 57                         | 31.06                                | 14                         | 6.80                                 |
| 33            | Ashford                 | 45                         | 29.95                                | 10                         | 6.65                                 | 123           | Torridge                      | 50                         | 48.54                                | 8                          | 9.15                                 |
| 34            | Canterbury              | 77                         | 42.55                                | 19                         | 9.44                                 | 124           | West Devon                    | 25                         | 29.24                                | 2                          | 2.41                                 |
| 35            | Dartford                | 47                         | 42.20                                | 11                         | 9.91                                 | 125           | Christchurch                  | 14                         | 21.97                                | 8                          | 11.48                                |
| 36            | Dover                   | 60                         | 39.95                                | 17                         | 10.51                                | 126           | East Dorset                   | 21                         | 16.47                                | 7                          | 4.91                                 |
| 37            | Gravesham               | 48                         | 37.48                                | 10                         | 7.48                                 | 127           | North Dorset                  | 32                         | 34.15                                | 4                          | 3.80                                 |
| 38            | Maidstone               | 71                         | 34.83                                | 14                         | 6.79                                 | 128           | Purbeck                       | 18                         | 25.93                                | 3                          | 3.52                                 |
| 39            | Sevenoaks               | 52                         | 32.13                                | 5                          | 2.81                                 | 129           | West Dorset                   | 56                         | 36.98                                | 14                         | 9.63                                 |
| 40            | Shepway                 | 53                         | 37.98                                | 17                         | 11.24                                | 130           | Weymouth & Portland           | 35                         | 36.85                                | 6                          | 6.31                                 |
| 41            | Swale                   | 74                         | 42.70                                | 26                         | 14.00                                | 131           | Cheltenham                    | 52                         | 38.10                                | 8                          | 5.57                                 |
| 42            | Thanet                  | 74                         | 42.73                                | 16                         | 8.53                                 | 132           | Cotswold                      | 24                         | 19.00                                | 9                          | 6.93                                 |
| 43            | Tonbridge & Malling     | 40                         | 26.06                                | 13                         | 8.27                                 | 133           | Forest of Dean                | 51                         | 40.45                                | 8                          | 6.51                                 |
| 44            | Tunbridge Wells         | 41                         | 28.55                                | 10                         | 6.69                                 | 134           | Gloucester                    | 61                         | 43.40                                | 16                         | 11.56                                |
| 45            | Cherwell                | 49                         | 28.84                                | 16                         | 9.31                                 | 135           | Stroud                        | 46                         | 28.05                                | 11                         | 6.59                                 |
| 46            | Oxford                  | 52                         | 37.84                                | 10                         | 7.29                                 | 136           | Tewkesbury                    | 35                         | 29.76                                | 7                          | 5.82                                 |
| 47            | South Oxfordshire       | 42                         | 23.14                                | 15                         | 7.91                                 | 137           | Mendip                        | 59                         | 38.93                                | 14                         | 8.82                                 |
| 48            | Vale of White Horse     | 44                         | 26.79                                | 10                         | 5.92                                 | 138           | Sedgemoor                     | 49                         | 28.89                                | 11                         | 6.40                                 |
| 49            | West Oxfordshire        | 44                         | 32.83                                | 7                          | 4.88                                 | 139           | South Somerset                | 54                         | 23.90                                | 11                         | 4.45                                 |
| 50            | Elmbridge               | 53                         | 31.74                                | 10                         | 5.88                                 | 140           | Taunton Deane                 | 43                         | 29.83                                | 10                         | 6.59                                 |
| 51            | Epsom & Ewell           | 24                         | 23.96                                | 8                          | 7.89                                 | 141           | West Somerset                 | 17                         | 28.80                                | 5                          | 7.71                                 |
| 52            | Guildford               | 48                         | 28.60                                | 15                         | 8.91                                 | 142           | Kenet                         | 31                         | 28.96                                | 11                         | 10.45                                |
| 53            | Mole Valley             | 31                         | 24.92                                | 6                          | 4.74                                 | 143           | North Wiltshire               | 52                         | 29.46                                | 11                         | 6.22                                 |
| 54            | Reigate & Banstead      | 55                         | 32.03                                | 14                         | 8.17                                 | 144           | Salisbury                     | 35                         | 22.31                                | 17                         | 10.39                                |
| 55            | Runnymede               | 34                         | 32.51                                | 5                          | 4.98                                 | 145           | West Wiltshire                | 40                         | 23.66                                | 14                         | 7.80                                 |
| 56            | Spelthorne              | 49                         | 40.54                                | 4                          | 3.28                                 | C             | East of England               | 2,541                      | 33.83                                | 567                        | 7.34                                 |
| 57            | Surrey Heath            | 38                         | 33.34                                | 5                          | 4.35                                 | 146           | Peterborough UA               | 92                         | 47.27                                | 22                         | 10.87                                |
| 58            | Tandridge               | 46                         | 39.64                                | 6                          | 5.00                                 | 147           | Luton UA                      | 108                        | 50.14                                | 18                         | 8.66                                 |
| 59            | Waverley                | 41                         | 24.67                                | 12                         | 6.84                                 | 148           | Southend-on-Sea UA            | 70                         | 34.16                                | 20                         | 8.98                                 |
| 60            | Woking                  | 33                         | 28.31                                | 9                          | 8.06                                 | 149           | Thurrock UA                   | 64                         | 35.03                                | 29                         | 15.41                                |
| 61            | Adur                    | 25                         | 30.13                                | 7                          | 7.78                                 | 150           | Mid Bedfordshire              | 57                         | 32.60                                | 10                         | 5.54                                 |
| 62            | Arun                    | 83                         | 39.90                                | 19                         | 8.59                                 | 151           | Bedford                       | 71                         | 36.24                                | 17                         | 8.57                                 |
| 63            | Chichester              | 38                         | 25.29                                | 9                          | 5.02                                 | 152           | South Bedfordshire            | 51                         | 32.29                                | 12                         | 7.37                                 |
| 64            | Crawley                 | 40                         | 35.06                                | 13                         | 11.44                                | 153           | Cambridge                     | 38                         | 34.23                                | 9                          | 7.64                                 |
| 65            | Horsham                 | 44                         | 24.38                                | 8                          | 4.31                                 | 154           | East Cambridgeshire           | 38                         | 34.60                                | 8                          | 7.54                                 |
| 66            | Mid Sussex              | 46                         | 24.98                                | 11                         | 5.81                                 | 155           | Fenland                       | 62                         | 48.15                                | 12                         | 9.17                                 |
| 67            | Worthing                | 44                         | 37.04                                | 16                         | 11.65                                | 156           | Huntingdonshire               | 79                         | 34.46                                | 13                         | 5.69                                 |
|               | London                  | 3,369                      | 43.40                                | 815                        | 9.94                                 | 157           | South Cambridgeshire          | 45                         | 23.93                                | 9                          | 4.64                                 |
| 68            | City of London          | 5                          | 38.70                                | 0                          | 0.00                                 | 158           | Basildon                      | 79                         | 37.32                                | 21                         | 9.23                                 |
| 69            | Barking & Dagenham      | 86                         | 50.39                                | 29                         | 16.40                                | 159           | Braintree                     | 69                         | 35.39                                | 19                         | 9.44                                 |
| 70            | Barnet                  | 129                        | 35.47                                | 24                         | 6.04                                 | 160           | Brentwood                     | 22                         | 23.21                                | 7                          | 6.82                                 |
| 71            | Bexley                  | 80                         | 29.01                                | 30                         | 10.12                                | 161           | Castle Point                  | 41                         | 28.72                                | 6                          | 4.21                                 |
| 72            | Brent                   | 155                        | 56.02                                | 38                         | 12.91                                | 162           | Chelmsford                    | 61                         | 27.01                                | 9                          | 3.95                                 |
| 73            | Bromley                 | 112                        | 29.09                                | 26                         | 6.39                                 | 163           | Colchester                    | 60                         | 27.98                                | 18                         | 7.89                                 |
| 74            | Camden                  | 120                        | 59.51                                | 22                         | 10.72                                | 164           | Epping Forest                 | 62                         | 35.82                                | 8                          | 4.65                                 |
| 75            | Croydon                 | 152                        | 38.66                                | 36                         | 8.89                                 | 165           | Harlow                        | 36                         | 40.63                                | 12                         | 11.98                                |
| 76            | Ealing                  | 158                        | 49.31                                | 34                         | 10.49                                | 166           | Maldon                        | 39                         | 41.18                                | 9                          | 9.65                                 |
| 77            | Enfield                 | 139                        | 43.60                                | 29                         | 8.64                                 | 167           | Rochford                      | 34                         | 30.52                                | 4                          | 3.57                                 |
| 78            | Greenwich               | 118                        | 50.64                                | 32                         | 12.77                                | 168           | Tendring                      | 98                         | 46.21                                | 23                         | 9.94                                 |
| 79            | Hackney                 | 109                        | 63.65                                | 26                         | 13.22                                | 169           | Uttlesford                    | 32                         | 29.74                                | 12                         | 10.93                                |
| 80            | Hammersmith & Fulham    | 79                         | 50.57                                | 13                         | 7.83                                 | 170           | Broxbourne                    | 44                         | 38.11                                | 12                         | 10.13                                |
| 81            | Haringey                | 115                        | 56.67                                | 19                         | 8.37                                 | 171           | Dacorum                       | 46                         | 24.85                                | 9                          | 4.68                                 |
| 82            | Harrow                  | 101                        | 41.16                                | 13                         | 4.99                                 | 172           | East Hertfordshire            | 54                         | 29.81                                | 8                          | 4.40                                 |
| 83            | Havering                | 133                        | 45.48                                | 32                         | 10.06                                | 173           | Hertsmere                     | 37                         | 30.20                                | 7                          | 5.60                                 |
| 84            | Hillingdon              | 132                        | 46.32                                | 27                         | 9.18                                 | 174           | North Hertfordshire           | 48                         | 30.58                                | 15                         | 8.90                                 |
| 85            | Hounslow                | 106                        | 45.75                                | 34                         | 14.34                                | 175           | St Albans                     | 43                         | 24.61                                | 5                          | 2.92                                 |
| 86            | Islington               | 106                        | 65.11                                | 23                         | 12.69                                | 176           | Stevenage                     | 24                         | 27.22                                | 5                          | 5.15                                 |
| 87            | Kensington & Chelsea    | 48                         | 24.72                                | 14                         | 6.33                                 | 177           | Three Rivers                  | 33                         | 29.32                                | 6                          | 5.34                                 |
| 88            | Kingston upon Thames    | 46                         | 26.33                                | 9                          | 5.25                                 | 178           | Watford                       | 42                         | 44.63                                | 5                          | 5.62                                 |
| 89            | Lambeth                 | 99                         | 45.20                                | 28                         | 11.28                                |               |                               |                            |                                      |                            |                                      |

| Map reference | Local authority            | Men                        |                                     | Women                      |                                     | Map reference | Local authority             | Men                        |                                     | Women                      |                                     |
|---------------|----------------------------|----------------------------|-------------------------------------|----------------------------|-------------------------------------|---------------|-----------------------------|----------------------------|-------------------------------------|----------------------------|-------------------------------------|
|               |                            | Number of deaths 2003-2005 | Age standardised death rate/100,000 | Number of deaths 2003-2005 | Age standardised death rate/100,000 |               |                             | Number of deaths 2003-2005 | Age standardised death rate/100,000 | Number of deaths 2003-2005 | Age standardised death rate/100,000 |
| 179           | Welwyn Hatfield            | 23                         | 18.72                               | 7                          | 5.58                                | 276           | Trafford                    | 132                        | 48.91                               | 33                         | 11.58                               |
| 180           | Breckland                  | 67                         | 36.40                               | 14                         | 6.98                                | 277           | Wigan                       | 251                        | 56.69                               | 65                         | 14.39                               |
| 181           | Broadland                  | 54                         | 29.18                               | 13                         | 6.70                                | 278           | Knowsley                    | 115                        | 64.80                               | 41                         | 21.68                               |
| 182           | Great Yarmouth             | 67                         | 48.58                               | 21                         | 14.67                               | 279           | Liverpool                   | 363                        | 71.13                               | 88                         | 16.13                               |
| 183           | Kings Lynn & West Norfolk  | 77                         | 35.96                               | 20                         | 8.67                                | 280           | St Helens                   | 127                        | 50.37                               | 37                         | 14.54                               |
| 184           | North Norfolk              | 55                         | 32.18                               | 9                          | 5.84                                | 281           | Sefton                      | 190                        | 50.24                               | 44                         | 10.36                               |
| 185           | Norwich                    | 71                         | 50.58                               | 10                         | 6.83                                | 282           | Wirral                      | 228                        | 53.75                               | 54                         | 11.84                               |
| 186           | South Norfolk              | 36                         | 19.57                               | 8                          | 4.54                                | 283           | Halton UA                   | 82                         | 51.34                               | 24                         | 14.26                               |
| 187           | Babergh                    | 41                         | 31.10                               | 11                         | 7.68                                | 284           | Warrington UA               | 124                        | 46.13                               | 33                         | 11.92                               |
| 188           | Forest Heath               | 28                         | 38.02                               | 3                          | 4.00                                | 285           | Blackburn with Darwen UA    | 85                         | 51.24                               | 24                         | 15.07                               |
| 189           | Ipswich                    | 60                         | 40.73                               | 13                         | 9.05                                | 286           | Blackpool UA                | 121                        | 58.92                               | 32                         | 15.54                               |
| 190           | Mid Suffolk                | 37                         | 26.76                               | 11                         | 8.07                                | 287           | Chester                     | 45                         | 27.99                               | 9                          | 5.33                                |
| 191           | St Edmundsbury             | 37                         | 25.67                               | 8                          | 5.05                                | 288           | Congleton                   | 45                         | 32.15                               | 8                          | 5.59                                |
| 192           | Suffolk Coastal            | 52                         | 28.33                               | 6                          | 3.24                                | 289           | Crewe & Nantwich            | 73                         | 45.04                               | 10                         | 6.12                                |
| 193           | Waveney                    | 57                         | 35.16                               | 14                         | 9.18                                | 290           | Ellesmere Port & Neston     | 57                         | 51.00                               | 8                          | 7.10                                |
| D             | East Midlands              | 2,467                      | 41.68                               | 650                        | 10.79                               | 291           | Macclesfield                | 80                         | 36.39                               | 19                         | 8.40                                |
| 194           | Corby                      | 36                         | 52.31                               | 11                         | 14.45                               | 292           | Vale Royal                  | 78                         | 42.27                               | 20                         | 10.60                               |
| 195           | Daventry                   | 50                         | 43.71                               | 6                          | 5.04                                | 293           | Allerdale                   | 62                         | 43.52                               | 15                         | 10.64                               |
| 196           | East Northamptonshire      | 31                         | 27.98                               | 11                         | 9.85                                | 294           | Barrow-in-Furness           | 60                         | 58.99                               | 19                         | 18.73                               |
| 197           | Kettering                  | 42                         | 35.08                               | 14                         | 11.75                               | 295           | Carlisle                    | 94                         | 65.14                               | 18                         | 11.87                               |
| 198           | Northampton                | 100                        | 41.76                               | 22                         | 9.01                                | 296           | Copeland                    | 44                         | 41.82                               | 12                         | 11.48                               |
| 199           | South Northamptonshire     | 46                         | 35.37                               | 11                         | 8.58                                | 297           | Eden                        | 24                         | 28.51                               | 4                          | 4.98                                |
| 200           | Wellingborough             | 44                         | 43.46                               | 16                         | 15.07                               | 298           | South Lakeland              | 48                         | 28.75                               | 11                         | 6.32                                |
| 201           | Derby UA                   | 148                        | 51.22                               | 35                         | 12.11                               | 299           | Burnley                     | 74                         | 62.32                               | 18                         | 15.30                               |
| 202           | Leicester UA               | 201                        | 66.60                               | 56                         | 18.54                               | 300           | Chorley                     | 63                         | 40.70                               | 14                         | 8.82                                |
| 103           | Rutland UA                 | 16                         | 29.53                               | 7                          | 12.40                               | 301           | Fylde                       | 43                         | 38.42                               | 10                         | 8.50                                |
| 204           | Northingham UA             | 182                        | 65.27                               | 51                         | 18.55                               | 302           | Hyndburn                    | 49                         | 45.35                               | 13                         | 11.82                               |
| 205           | Amber Valley               | 82                         | 44.89                               | 20                         | 10.81                               | 303           | Lancaster                   | 85                         | 49.25                               | 23                         | 12.55                               |
| 206           | Bolsover                   | 57                         | 53.53                               | 18                         | 17.49                               | 304           | Pendle                      | 70                         | 58.13                               | 14                         | 11.70                               |
| 207           | Chesterfield               | 72                         | 50.94                               | 22                         | 15.67                               | 305           | Preston                     | 81                         | 50.98                               | 23                         | 14.55                               |
| 208           | Derbyshire Dales           | 34                         | 29.75                               | 11                         | 9.77                                | 306           | Ribble Valley               | 40                         | 46.70                               | 5                          | 5.56                                |
| 209           | Erewash                    | 63                         | 39.61                               | 15                         | 9.69                                | 307           | Rossendale                  | 46                         | 48.48                               | 15                         | 16.53                               |
| 210           | High Peak                  | 42                         | 31.57                               | 11                         | 8.33                                | 308           | South Ribble                | 60                         | 39.27                               | 13                         | 8.01                                |
| 211           | North East Derbyshire      | 70                         | 44.38                               | 20                         | 12.41                               | 309           | West Lancashire             | 72                         | 43.89                               | 22                         | 12.78                               |
| 212           | South Derbyshire           | 41                         | 33.28                               | 14                         | 11.50                               | 310           | Wyre                        | 62                         | 39.93                               | 22                         | 12.01                               |
| 213           | Blaby                      | 38                         | 29.48                               | 10                         | 7.29                                | G             | Yorkshire and the Humber    | 3,071                      | 45.98                               | 784                        | 11.40                               |
| 214           | Charnwood                  | 79                         | 38.13                               | 24                         | 11.33                               | 311           | Barnsley                    | 161                        | 52.40                               | 40                         | 13.00                               |
| 215           | Harborough                 | 27                         | 22.55                               | 5                          | 4.08                                | 312           | Doncaster                   | 188                        | 47.70                               | 39                         | 9.57                                |
| 216           | Hinckley & Bosworth        | 60                         | 37.69                               | 11                         | 7.28                                | 313           | Rotherham                   | 177                        | 50.65                               | 43                         | 11.79                               |
| 217           | Melton                     | 26                         | 34.16                               | 6                          | 8.37                                | 314           | Sheffield                   | 295                        | 45.48                               | 77                         | 11.68                               |
| 218           | North West Leicestershire  | 54                         | 41.55                               | 16                         | 12.08                               | 315           | Bradford                    | 281                        | 50.05                               | 95                         | 16.87                               |
| 219           | Oadby & Wigston            | 22                         | 29.99                               | 5                          | 6.24                                | 316           | Calderdale                  | 124                        | 45.83                               | 24                         | 8.72                                |
| 220           | Boston                     | 38                         | 44.56                               | 5                          | 5.74                                | 317           | Kirklees                    | 204                        | 39.72                               | 65                         | 12.28                               |
| 221           | East Lindsey               | 87                         | 39.68                               | 22                         | 8.93                                | 318           | Leeds                       | 428                        | 50.10                               | 103                        | 11.52                               |
| 222           | Lincoln                    | 54                         | 52.62                               | 16                         | 15.57                               | 319           | Wakefield                   | 222                        | 49.80                               | 57                         | 12.78                               |
| 223           | North Kesteven             | 59                         | 40.36                               | 11                         | 6.84                                | 320           | Kingston upon Hull UA       | 177                        | 59.51                               | 50                         | 17.13                               |
| 224           | South Holland              | 51                         | 43.21                               | 13                         | 9.02                                | 321           | East Riding of Yorkshire UA | 196                        | 39.33                               | 54                         | 10.52                               |
| 225           | South Kesteven             | 77                         | 40.70                               | 15                         | 8.08                                | 322           | North East Lincolnshire UA  | 93                         | 43.66                               | 28                         | 13.15                               |
| 226           | West Lindsey               | 44                         | 32.48                               | 11                         | 7.85                                | 323           | North Lincolnshire UA       | 102                        | 44.73                               | 21                         | 8.91                                |
| 227           | Ashfield                   | 70                         | 42.76                               | 19                         | 11.64                               | 324           | York UA                     | 92                         | 39.14                               | 19                         | 7.46                                |
| 228           | Bassetlaw                  | 69                         | 41.85                               | 19                         | 11.64                               | 325           | Craven                      | 24                         | 29.10                               | 5                          | 5.30                                |
| 229           | Broxtowe                   | 50                         | 32.43                               | 9                          | 5.57                                | 326           | Hambleton                   | 40                         | 29.88                               | 10                         | 7.11                                |
| 230           | Gedling                    | 45                         | 27.87                               | 15                         | 8.93                                | 327           | Harrogate                   | 68                         | 31.12                               | 16                         | 6.94                                |
| 231           | Mansfield                  | 63                         | 47.15                               | 22                         | 16.00                               | 328           | Richmondshire               | 22                         | 32.87                               | 8                          | 11.96                               |
| 232           | Newark & Sherwood          | 58                         | 35.90                               | 16                         | 9.50                                | 329           | Ryedale                     | 33                         | 39.33                               | 1                          | 1.07                                |
| 233           | Rushcliffe                 | 39                         | 24.87                               | 9                          | 6.16                                | 330           | Scarborough                 | 89                         | 54.69                               | 17                         | 9.40                                |
| E             | West Midlands              | 3,309                      | 46.06                               | 872                        | 11.91                               | 331           | Selby                       | 55                         | 48.16                               | 12                         | 10.68                               |
| 234           | Birmingham                 | 670                        | 62.57                               | 182                        | 16.40                               | H             | North East                  | 1,762                      | 51.31                               | 488                        | 13.72                               |
| 235           | Coventry                   | 165                        | 46.74                               | 43                         | 11.88                               | 332           | Gateshead                   | 158                        | 61.89                               | 32                         | 11.94                               |
| 236           | Dudley                     | 192                        | 44.67                               | 50                         | 11.51                               | 334           | Newcastle upon Tyne         | 170                        | 55.52                               | 44                         | 13.91                               |
| 237           | Sandwell                   | 230                        | 64.17                               | 67                         | 18.59                               | 335           | North Tyneside              | 128                        | 49.28                               | 31                         | 11.45                               |
| 238           | Solihull                   | 118                        | 41.56                               | 31                         | 10.16                               | 336           | South Tyneside              | 112                        | 56.48                               | 37                         | 18.16                               |
| 239           | Walsall                    | 163                        | 48.25                               | 56                         | 15.98                               | 337           | Sunderland                  | 185                        | 49.92                               | 45                         | 11.68                               |
| 240           | Wolverhampton              | 165                        | 55.99                               | 38                         | 12.72                               | 338           | Hartlepool UA               | 76                         | 65.21                               | 27                         | 22.30                               |
| 241           | County of Herefordshire UA | 91                         | 33.61                               | 21                         | 7.44                                | 339           | Middlesbrough UA            | 100                        | 60.21                               | 30                         | 17.71                               |
| 242           | Telford & Wrekin UA        | 113                        | 52.05                               | 28                         | 13.06                               | 340           | Redcar and Cleveland UA     | 102                        | 50.55                               | 35                         | 16.98                               |
| 243           | Stoke-on-Trent UA          | 218                        | 68.23                               | 47                         | 15.07                               | 341           | Stockton-on-Tees UA         | 118                        | 48.25                               | 32                         | 12.81                               |
| 244           | Bridgnorth                 | 26                         | 30.18                               | 12                         | 13.50                               | 342           | Darlington UA               | 66                         | 47.73                               | 17                         | 12.38                               |
| 245           | North Shropshire           | 38                         | 43.56                               | 6                          | 7.07                                | 343           | Chester-le-Street           | 36                         | 45.99                               | 12                         | 15.21                               |
| 246           | Oswestry                   | 20                         | 36.11                               | 3                          | 4.91                                | 344           | Derwentside                 | 73                         | 59.23                               | 18                         | 14.35                               |
| 247           | Shrewsbury & Atcham        | 57                         | 41.80                               | 8                          | 5.24                                | 345           | Durham                      | 61                         | 50.31                               | 10                         | 8.12                                |
| 248           | South Shropshire           | 22                         | 29.83                               | 4                          | 5.91                                | 346           | Easington                   | 66                         | 53.80                               | 32                         | 24.25                               |
| 249           | Cannock Chase              | 60                         | 46.27                               | 17                         | 13.43                               | 347           | Sedgefield                  | 49                         | 39.21                               | 21                         | 16.34                               |
| 250           | East Staffordshire         | 64                         | 43.50                               | 18                         | 12.59                               | 348           | Teesdale                    | 17                         | 41.59                               | 2                          | 4.96                                |
| 251           | Lichfield                  | 40                         | 26.69                               | 12                         | 7.33                                | 349           | Wear Valley                 | 37                         | 41.10                               | 14                         | 14.96                               |
| 252           | Newcastle-under-Lyme       | 83                         | 48.24                               | 27                         | 15.14                               | 350           | Alnwick                     | 16                         | 31.38                               | 5                          | 9.33                                |
| 253           | South Staffordshire        | 59                         | 34.37                               | 16                         | 9.17                                | 351           | Berwick-upon-Tweed          | 13                         | 31.50                               | 3                          | 5.62                                |
| 254           | Stafford                   | 46                         | 24.96                               | 19                         | 9.69                                | 352           | Blyth Valley                | 64                         | 53.31                               | 16                         | 13.68                               |
| 255           | Staffordshire Moorlands    | 55                         | 34.98                               | 18                         | 11.82                               | 353           | Castle Morpeth              | 28                         | 35.69                               | 6                          | 8.64                                |
| 256           | Tamworth                   | 36                         | 34.26                               | 17                         | 16.90                               | 354           | Tynedale                    | 33                         | 34.45                               | 7                          | 7.43                                |
| 257           | North Warwickshire         | 28                         | 27.93                               | 18                         | 18.41                               | 355           | Wansbeck                    | 54                         | 61.65                               | 12                         | 12.70                               |
| 258           | Nuneaton & Bedworth        | 94                         | 55.26                               | 23                         | 13.35                               | SCOTLAND      |                             | 3,923                      | 56.96                               | 1,162                      | 15.90                               |
| 259           | Rugby                      | 56                         | 41.77                               | 10                         | 7.65                                | 356           | Aberdeen City               | 113                        | 42.94                               | 39                         | 14.66                               |
| 260           | Stratford-on-Avon          | 48                         | 26.29                               | 12                         | 6.31                                | 357           | Aberdeenshire               | 124                        | 35.56                               | 39                         | 11.44                               |
| 261           | Warwick                    | 65                         | 36.37                               | 14                         | 8.09                                | 358           | Angus                       | 76                         | 45.86                               | 24                         | 13.83                               |
| 262           | Bromsgrove                 | 39                         | 28.23                               | 9                          | 6.25                                | 359           | Argyll & Bute               | 67                         | 46.00                               | 20                         | 13.18                               |
| 263           | Malvern Hills              | 42                         | 36.30                               | 6                          | 4.76                                | 360           | Clackmannanshire            | 48                         | 70.89                               | 10                         | 14.25                               |
| 264           | Redditch                   | 46                         | 41.66                               | 12                         | 10.58                               | 361           | Dumfries & Galloway         | 106                        | 45.72                               | 21                         | 8.47                                |
| 265           | Worcester                  | 47                         | 39.54                               | 7                          | 5.62                                | 362           | Dundee City                 | 117                        | 64.59                               | 42                         | 21.40                               |
| 266           | Wychavon                   | 58                         | 31.30                               | 11                         | 6.34                                | 363           | East Ayrshire               | 108                        | 63.70                               | 38                         | 21.08                               |
| 267           | Wyre Forest                | 55                         | 33.55                               | 10                         | 5.74                                | 364           | East Dunbartonshire         | 43                         | 28.50                               | 24                         | 14.80                               |
| F             | North West                 | 4,820                      | 52.84                               | 1,246                      | 13.21                               | 365           | East Lothian                | 49                         | 38.45                               | 11                         | 8.04                                |
| 268           | Bolton                     | 194                        | 54.21                               | 61                         | 16.81                               | 366           | East Renfrewshire           | 44                         | 36.27                               | 11                         | 8.41                                |
| 269           | Bury                       | 142                        | 58.16                               | 24                         | 9.34                                | 367           | Edinburgh, City of          | 308                        | 58.35                               | 60                         | 10.75                               |
| 270           | Manchester                 | 330                        | 77.75                               | 88                         | 20.45                               | 368           | Eilean Siar                 | 19                         | 44.16                               | 7                          | 17.31                               |
| 271           | Oldham                     | 168                        | 59.76                               | 57                         | 19.19                               | 369           | Falkirk                     | 110                        | 54.56                               | 31                         | 14.65                               |
| 272           | Rochdale                   | 208                        | 77.71                               | 52                         | 19.13                               | 370           | Fife                        | 276                        | 56.04                               | 79                         | 15.11                               |
| 273           | Salford                    | 172                        | 64.32                               | 48                         | 17.26                               | 371           | Glasgow City                | 586                        | 90.20                               | 188                        | 26.91                               |
| 274           | Stockport                  | 170                        | 43.72                               | 47                         | 11.71                               | 372           | Highland                    | 144                        | 43.57                               | 37                         | 11.14                               |
| 275           | Tameside                   | 163                        | 56.49                               | 49                         | 16.61                               |               |                             |                            |                                     |                            |                                     |

| Map reference           | Local authority          | Men                           |                                               | Women                         |                                               |
|-------------------------|--------------------------|-------------------------------|-----------------------------------------------|-------------------------------|-----------------------------------------------|
|                         |                          | Number of deaths<br>2003-2005 | Age<br>standardised<br>death rate/<br>100,000 | Number of deaths<br>2003-2005 | Age<br>standardised<br>death rate/<br>100,000 |
| 373                     | Inverclyde               | 106                           | 94.34                                         | 31                            | 25.58                                         |
| 374                     | Midlothian               | 59                            | 52.92                                         | 14                            | 11.61                                         |
| 375                     | Moray                    | 39                            | 30.92                                         | 15                            | 11.62                                         |
| 376                     | North Ayrshire           | 142                           | 73.64                                         | 32                            | 15.02                                         |
| 377                     | North Lanarkshire        | 291                           | 69.01                                         | 106                           | 23.50                                         |
| 378                     | Orkney Islands           | 13                            | 39.98                                         | 4                             | 12.54                                         |
| 379                     | Perth & Kinross          | 85                            | 41.93                                         | 18                            | 8.17                                          |
| 380                     | Renfrewshire             | 159                           | 68.40                                         | 41                            | 15.83                                         |
| 381                     | Scottish Borders         | 80                            | 47.63                                         | 14                            | 7.82                                          |
| 382                     | Shetland Islands         | 17                            | 51.18                                         | 2                             | 6.85                                          |
| 383                     | South Ayrshire           | 81                            | 48.86                                         | 24                            | 13.20                                         |
| 384                     | South Lanarkshire        | 256                           | 62.50                                         | 77                            | 16.95                                         |
| 385                     | Stirling                 | 52                            | 42.61                                         | 19                            | 15.02                                         |
| 386                     | West Dunbartonshire      | 95                            | 79.70                                         | 41                            | 30.92                                         |
| 387                     | West Lothian             | 110                           | 50.87                                         | 43                            | 18.42                                         |
| <b>WALES</b>            |                          | <b>1,910</b>                  | <b>46.40</b>                                  | <b>552</b>                    | <b>12.84</b>                                  |
| 388                     | Blaenau Gwent UA         | 53                            | 53.90                                         | 24                            | 23.72                                         |
| 389                     | Bridgend UA              | 81                            | 43.98                                         | 26                            | 13.58                                         |
| 390                     | Caerphilly UA            | 143                           | 60.90                                         | 39                            | 15.99                                         |
| 391                     | Cardiff UA               | 163                           | 47.12                                         | 37                            | 10.15                                         |
| 392                     | Carmarthenshire UA       | 118                           | 43.75                                         | 34                            | 11.97                                         |
| 393                     | Ceredigion UA            | 36                            | 30.83                                         | 13                            | 10.70                                         |
| 394                     | Conwy UA                 | 76                            | 45.97                                         | 17                            | 9.18                                          |
| 395                     | Denbighshire UA          | 52                            | 37.21                                         | 13                            | 9.04                                          |
| 396                     | Flintshire UA            | 100                           | 47.21                                         | 30                            | 12.92                                         |
| 397                     | Gwynedd UA               | 57                            | 32.98                                         | 17                            | 9.22                                          |
| 398                     | Isle of Anglesey UA      | 37                            | 34.27                                         | 8                             | 6.98                                          |
| 399                     | Merthyr Tydfil UA        | 40                            | 52.47                                         | 18                            | 22.96                                         |
| 400                     | Monmouthshire UA         | 58                            | 42.70                                         | 12                            | 8.87                                          |
| 401                     | Neath Port Talbot UA     | 100                           | 52.09                                         | 19                            | 9.54                                          |
| 402                     | Newport UA               | 95                            | 52.50                                         | 33                            | 17.81                                         |
| 403                     | Pembrokeshire UA         | 78                            | 44.63                                         | 21                            | 11.17                                         |
| 404                     | Powys UA                 | 67                            | 31.98                                         | 17                            | 9.25                                          |
| 405                     | Rhondda, Cynon, Taff UA  | 201                           | 62.89                                         | 54                            | 16.27                                         |
| 406                     | Swansea UA               | 136                           | 46.17                                         | 51                            | 15.95                                         |
| 407                     | The Vale of Glamorgan UA | 77                            | 46.07                                         | 15                            | 8.43                                          |
| 408                     | Torfaen UA               | 57                            | 43.91                                         | 21                            | 15.88                                         |
| 409                     | Wrexham UA               | 85                            | 46.04                                         | 33                            | 17.72                                         |
| <b>NORTHERN IRELAND</b> |                          | <b>981</b>                    | <b>47.29</b>                                  | <b>273</b>                    | <b>12.63</b>                                  |
| 410                     | Ards                     | 40                            | 37.65                                         | 20                            | 18.53                                         |
| 411                     | Belfast                  | 187                           | 63.58                                         | 43                            | 13.24                                         |
| 412                     | Castlereagh              | 23                            | 28.80                                         | 16                            | 17.72                                         |
| 413                     | Down                     | 37                            | 45.59                                         | 11                            | 13.29                                         |
| 414                     | Lisburn                  | 54                            | 40.94                                         | 9                             | 6.63                                          |
| 415                     | North Down               | 43                            | 39.23                                         | 10                            | 8.36                                          |
| 416                     | Antrim                   | 32                            | 52.26                                         | 13                            | 20.44                                         |
| 417                     | Ballymena                | 36                            | 45.41                                         | 7                             | 8.26                                          |
| 418                     | Ballymoney               | 9                             | 25.25                                         | 4                             | 10.91                                         |
| 419                     | Carrickfergus            | 25                            | 50.31                                         | 3                             | 5.60                                          |
| 420                     | Coleraine                | 34                            | 47.25                                         | 13                            | 17.33                                         |
| 421                     | Cookstown                | 26                            | 66.21                                         | 7                             | 17.78                                         |
| 422                     | Larne                    | 14                            | 32.04                                         | 4                             | 8.37                                          |
| 423                     | Magherafelt              | 29                            | 64.59                                         | 6                             | 13.42                                         |
| 424                     | Moyle                    | 11                            | 48.18                                         | 3                             | 13.24                                         |
| 425                     | Newtownabbey             | 45                            | 44.42                                         | 10                            | 9.17                                          |
| 426                     | Armagh                   | 34                            | 48.61                                         | 10                            | 14.33                                         |
| 427                     | Banbridge                | 22                            | 39.67                                         | 3                             | 5.32                                          |
| 428                     | Craigavon                | 48                            | 47.98                                         | 15                            | 14.41                                         |
| 429                     | Dungannon                | 27                            | 46.62                                         | 7                             | 12.22                                         |
| 430                     | Newry and Mourne         | 51                            | 49.66                                         | 14                            | 13.27                                         |
| 431                     | Fermanagh                | 39                            | 50.49                                         | 10                            | 13.42                                         |
| 432                     | Limavady                 | 14                            | 35.29                                         | 5                             | 13.52                                         |
| 433                     | Derry                    | 50                            | 42.78                                         | 15                            | 12.43                                         |
| 434                     | Omagh                    | 29                            | 49.00                                         | 4                             | 7.10                                          |
| 435                     | Strabane                 | 22                            | 47.09                                         | 11                            | 24.00                                         |

Notes: ICD (10th revision) codes I20-I25; directly standardised using the European Standard Population.

The age-adjusted death rate/100,000 is an annual rate. The numbers of deaths 2002-2004 is the total number of deaths over the three year period.

Source: England and Wales: rates calculated in partnership with the Office for National Statistics.

Scotland: rates calculated in partnership with the General Register Office for Scotland.

Northern Ireland: rates calculated in partnership with Northern Ireland Statistics and Research Agency.

## Key to local authorities

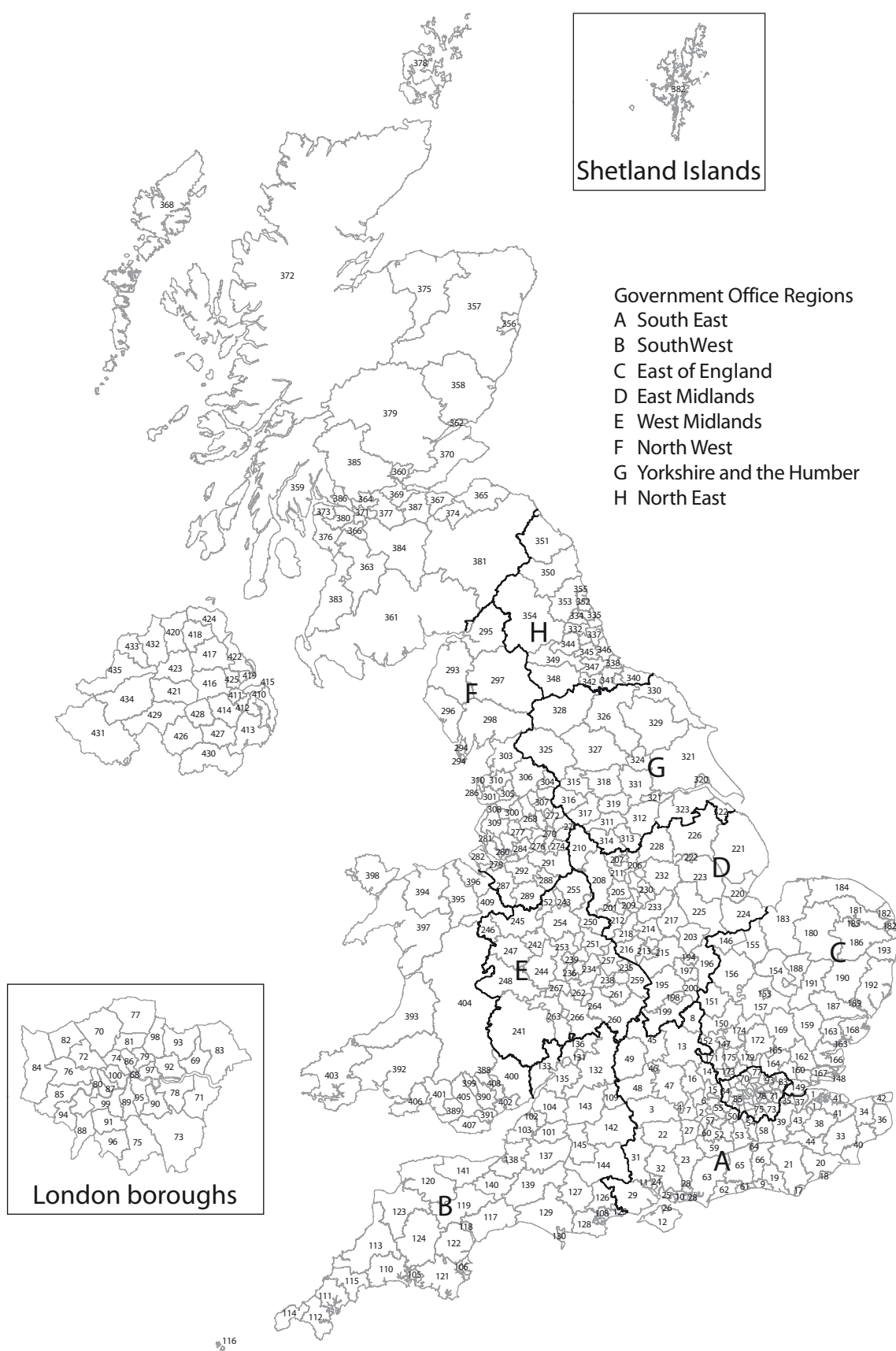
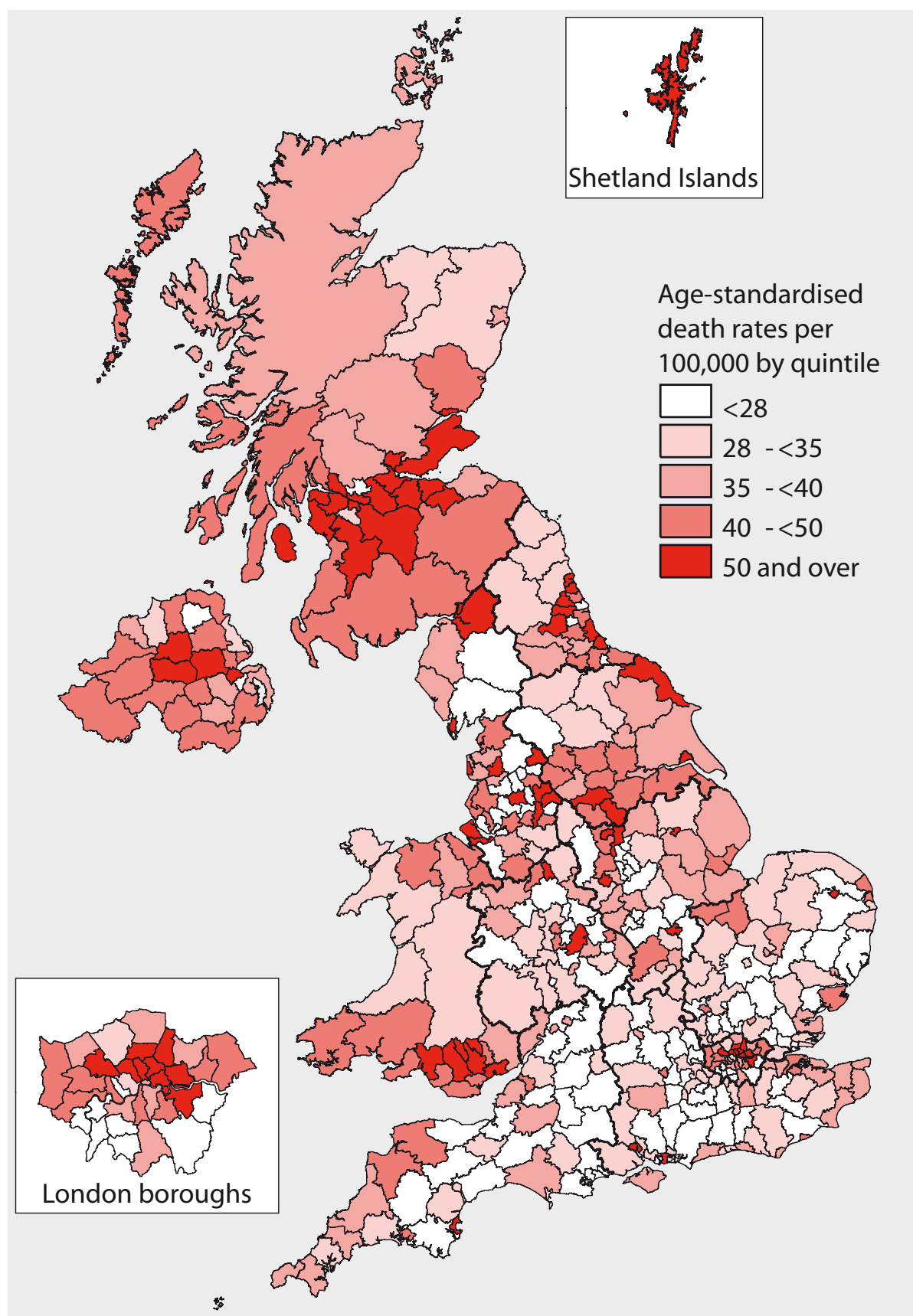


Figure 1.7a Age-standardised death rates per 100,000 population from CHD for men under 65 by local authority, 2003/05, United Kingdom



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British Heart  
Foundation  
Statistics Database  
[www.heartstats.org](http://www.heartstats.org)

Figure 1.7b Age-standardised death rates per 100,000 from CHD for women under 65 by local authority, 2003/05, United Kingdom

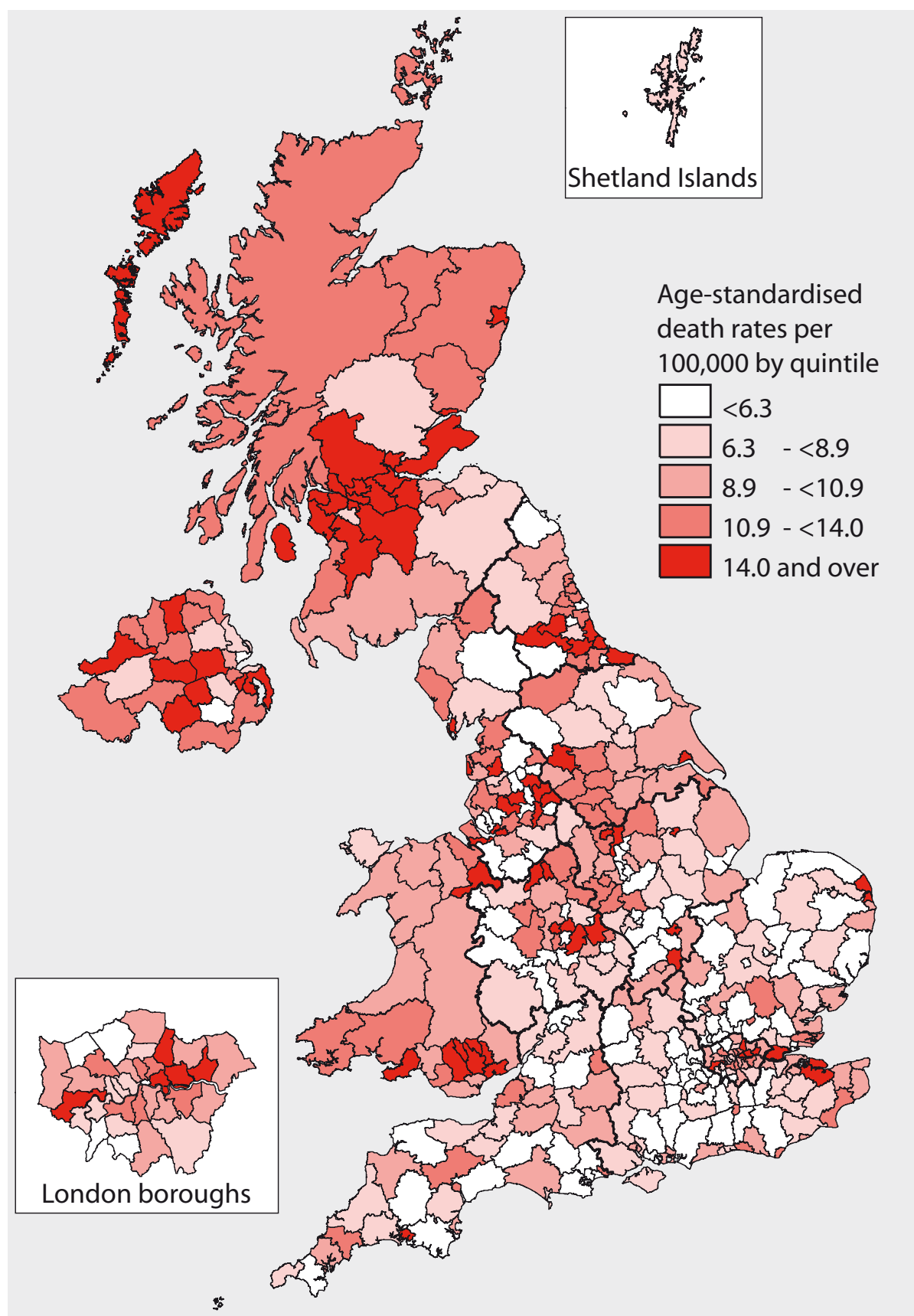


**Table 1.8** Age-standardised death rates from CHD and stroke by sex and social class, 1976/81 to 1997/99, England and Wales

|                                |                           | MEN         |             |             |             |             | WOMEN       |             |             |             |             |
|--------------------------------|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                |                           | 1976/81     | 1981/85     | 1986/92     | 1993/96     | 1997/99     | 1976/81     | 1981/85     | 1986/92     | 1993/96     | 1997/99     |
| <b>Coronary heart disease</b>  |                           |             |             |             |             |             |             |             |             |             |             |
| I/II                           | Professional/intermediate | 246         | 185         | 160         | 97          | 90          | 39          | 45          | 29          | 21          | 22          |
| IIIN                           | Skilled non-manual        | 382         | 267         | 162         | 117         | 117         | 56          | 57          | 39          | 35          | 30          |
| IIIM                           | Skilled manual            | 309         | 269         | 231         | 159         | 141         | 85          | 67          | 59          | 46          | 41          |
| IV/V                           | Partly skilled/unskilled  | 363         | 293         | 266         | 215         | 107         | 105         | 76          | 78          | 48          | 50          |
| Total non-manual               |                           | 291         | 212         | 161         | 105         | 100         | 44          | 49          | 33          | 27          | 26          |
| Total manual                   |                           | 345         | 285         | 255         | 179         | 150         | 98          | 73          | 72          | 46          | 45          |
| <b>Ratio manual:non-manual</b> |                           | <b>1.19</b> | <b>1.34</b> | <b>1.58</b> | <b>1.70</b> | <b>1.50</b> | <b>2.23</b> | <b>1.49</b> | <b>2.18</b> | <b>1.70</b> | <b>1.73</b> |
| <b>Stroke</b>                  |                           |             |             |             |             |             |             |             |             |             |             |
| I/II                           | Professional/intermediate | 45          | 28          | 29          | 22          | 12          | 26          | 19          | 14          | 8           | 18          |
| IIIN                           | Skilled non-manual        | 38          | 46          | 27          | 17          | 13          | 36          | 29          | 22          | 14          | 9           |
| IIIM                           | Skilled manual            | 41          | 45          | 33          | 30          | 24          | 36          | 32          | 18          | 24          | 22          |
| IV/V                           | Partly skilled/unskilled  | 54          | 59          | 40          | 45          | 32          | 42          | 41          | 34          | 22          | 19          |
| Total non-manual               |                           | 42          | 34          | 28          | 20          | 12          | 29          | 23          | 17          | 11          | 14          |
| Total manual                   |                           | 50          | 54          | 38          | 35          | 27          | 40          | 38          | 29          | 22          | 21          |
| <b>Ratio manual:non-manual</b> |                           | <b>1.19</b> | <b>1.59</b> | <b>1.36</b> | <b>1.75</b> | <b>2.25</b> | <b>1.38</b> | <b>1.65</b> | <b>1.71</b> | <b>2.00</b> | <b>1.50</b> |

Notes: Data from 1993/96 refer to directly age-standardised rates per 100,000 person years.

Data before 1993/96 refers to age-standardised death rates per 100,000 population.

Men and women aged 35-64.

Source: Data from 1993/96 from Office for National Statistics (2003) Trends in social class differences in mortality by cause, 1986 to 2000. The Stationary Office: London.

Data before 1993/96 from Office for National Statistics (1997) Health Inequalities. The Stationary Office: London.

**Figure 1.8** Death rates from CHD by social class, men and women aged 35 to 64, 1976/81 to 1997/99, England and Wales

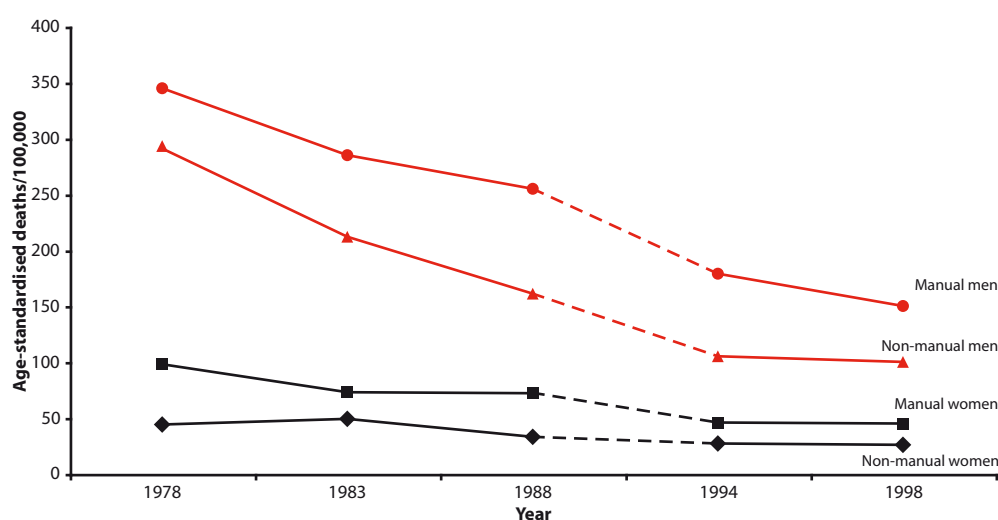


**Table 1.9** Age-standardised death rates for circulatory diseases by deprivation twentieth, sex and age, 1993 to 2003, England and Wales

|                                     | Deprivation twentieth |     |     |     |     |     |     |     |     |     |               |     |     |     |     |     |     |     |     |     |       |       |
|-------------------------------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|
|                                     | Least deprived        |     |     |     |     |     |     |     |     |     | Most deprived |     |     |     |     |     |     |     |     |     |       |       |
|                                     | 1                     | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11            | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | Total | Ratio |
| All circulatory diseases, ages 0–74 |                       |     |     |     |     |     |     |     |     |     |               |     |     |     |     |     |     |     |     |     |       |       |
| MEN                                 | 94                    | 104 | 108 | 116 | 119 | 122 | 129 | 136 | 142 | 146 | 152           | 165 | 171 | 177 | 184 | 193 | 200 | 206 | 227 | 250 | 152   | 2.7   |
| WOMEN                               | 40                    | 44  | 47  | 50  | 52  | 52  | 57  | 60  | 63  | 66  | 69            | 73  | 78  | 84  | 88  | 89  | 94  | 94  | 106 | 115 | 69    | 2.9   |
| Ischaemic heart disease, ages 15–64 |                       |     |     |     |     |     |     |     |     |     |               |     |     |     |     |     |     |     |     |     |       |       |
| MEN                                 | 35                    | 40  | 42  | 48  | 49  | 50  | 52  | 58  | 60  | 62  | 67            | 74  | 75  | 80  | 83  | 90  | 93  | 98  | 108 | 123 | 67    | 3.5   |
| WOMEN                               | 7                     | 8   | 10  | 11  | 11  | 11  | 13  | 13  | 15  | 15  | 18            | 19  | 19  | 22  | 24  | 25  | 26  | 27  | 33  | 37  | 17    | 5.5   |
| Stroke, all ages                    |                       |     |     |     |     |     |     |     |     |     |               |     |     |     |     |     |     |     |     |     |       |       |
| MEN                                 | 63                    | 62  | 61  | 64  | 63  | 65  | 66  | 66  | 67  | 69  | 72            | 71  | 72  | 72  | 75  | 76  | 77  | 78  | 84  | 91  | 70    | 1.5   |
| WOMEN                               | 61                    | 58  | 60  | 60  | 60  | 60  | 57  | 62  | 61  | 63  | 63            | 64  | 64  | 65  | 67  | 67  | 65  | 65  | 70  | 69  | 63    | 1.1   |
| Stroke, ages 15–64                  |                       |     |     |     |     |     |     |     |     |     |               |     |     |     |     |     |     |     |     |     |       |       |
| MEN                                 | 8                     | 9   | 9   | 9   | 10  | 11  | 11  | 12  | 11  | 13  | 13            | 14  | 14  | 15  | 16  | 19  | 19  | 19  | 23  | 29  | 14    | 3.6   |
| WOMEN                               | 6                     | 6   | 7   | 8   | 7   | 8   | 9   | 10  | 10  | 10  | 10            | 10  | 11  | 12  | 14  | 14  | 14  | 15  | 17  | 17  | 11    | 2.6   |

Notes: Data for all circulatory diseases from 1999 and 2001 to 2003.  
 Data for ischaemic heart disease from 1999 to 2003.  
 Ratio is ratio between most deprived and least deprived twentieths.  
 Death rate is calculated for deaths per 100,000 population.  
 Deprivation is measured on the Carstairs Deprivation Index.

Source: Office for National Statistics (2006) Health Statistics Quarterly (32) Winter.  
[http://www.statistics.gov.uk/downloads/theme\\_health/HSQ32.pdf](http://www.statistics.gov.uk/downloads/theme_health/HSQ32.pdf)

**Figure 1.9** Age-standardised death rates for CHD and stroke, adults aged 15 to 64, 1993 to 2003, England and Wales

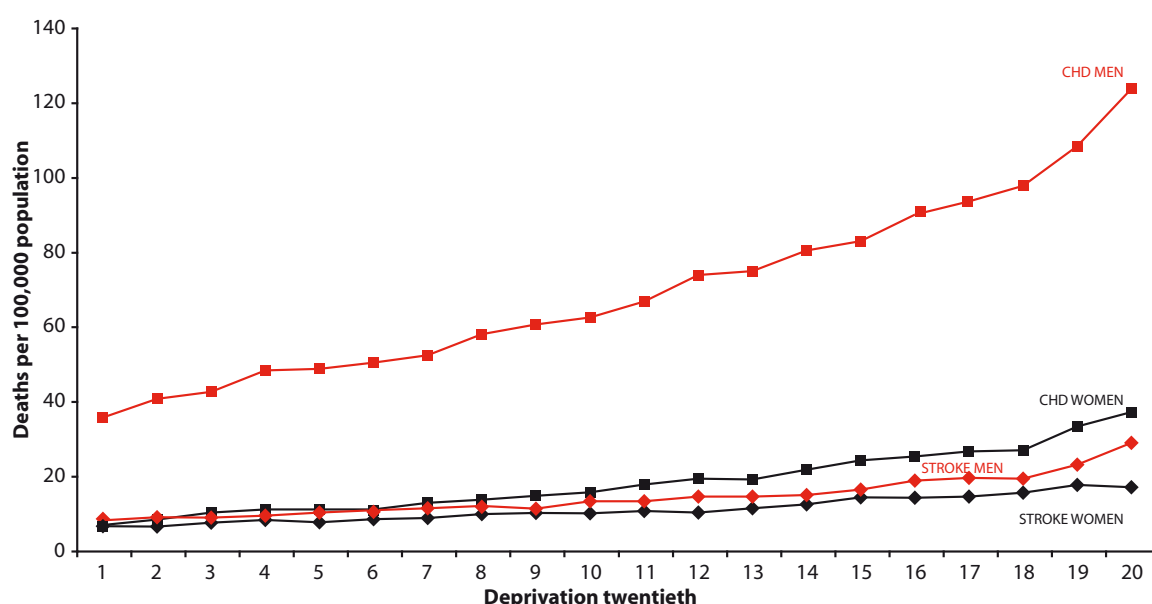


**Table 1.10** *Deaths and standardised mortality ratios for CHD and stroke by sex and country of birth, 1989/92, England and Wales*

|                         | Coronary heart disease |     | Stroke           |     |
|-------------------------|------------------------|-----|------------------|-----|
|                         | Number of deaths       | SMR | Number of deaths | SMR |
| <b>MEN AGED 20-69</b>   |                        |     |                  |     |
| All men                 | 123,741                | 100 | 21,421           | 100 |
| Scotland                | 3,066                  | 120 | 554              | 125 |
| All Ireland             | 3,995                  | 124 | 758              | 138 |
| East Africa             | 372                    | 131 | 56               | 114 |
| West Africa             | 81                     | 56  | 67               | 271 |
| Caribbean               | 592                    | 46  | 360              | 168 |
| South Asia              | 3,348                  | 146 | 594              | 155 |
| <b>WOMEN AGED 20-69</b> |                        |     |                  |     |
| All women               | 44,110                 | 100 | 17,334           | 100 |
| Scotland                | 1,099                  | 130 | 416              | 125 |
| All Ireland             | 1,398                  | 120 | 553              | 123 |
| East Africa             | 73                     | 105 | 43               | 122 |
| West Africa             | 16                     | 62  | 26               | 181 |
| Caribbean               | 236                    | 71  | 212              | 157 |
| South Asia              | 882                    | 151 | 344              | 141 |

Source: Wild S, McKeigue P (1997) Cross sectional analysis of mortality by country of birth in England and Wales, 1970-92 . BMJ 314; 705-10.

*Figure 1.10a Standardised mortality ratios for CHD by sex and country of birth, 1989/92, England and Wales*

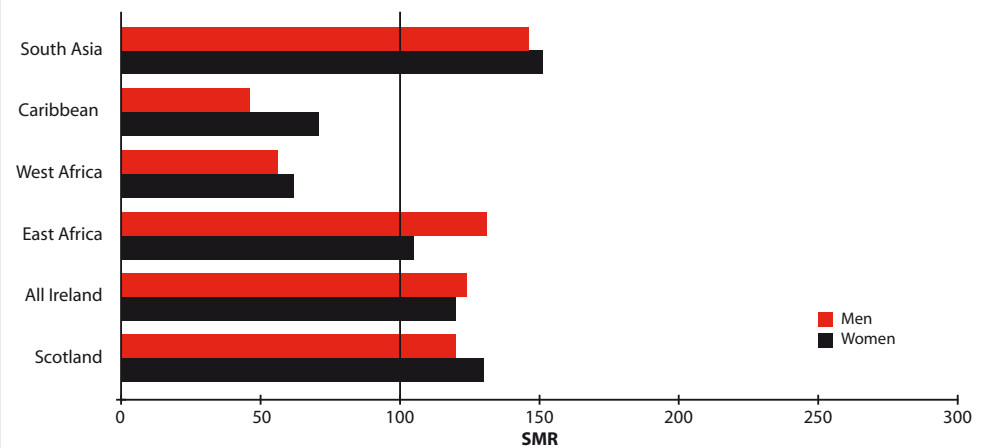


*Figure 1.10b Standardised mortality ratios for stroke by sex and country of birth, 1989/92, England and Wales*

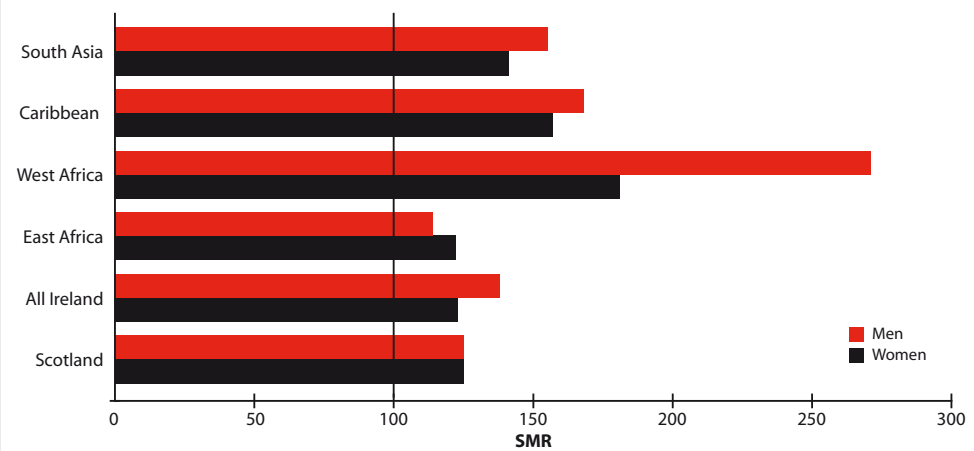


Table 1.11 Deaths from CHD by sex, age and month, 2004/05, England and Wales

|                | MEN   |        |        |        | WOMEN  |       |       |        | ALL    |        |        |        | Total  |        |
|----------------|-------|--------|--------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
|                | 0-64  | 65-74  | 75-84  | 85+    | 0-64   | 65-74 | 75-84 | 85+    | 0-64   | 65-74  | 75-84  | 85+    |        |        |
| August 2004    | 817   | 927    | 1,468  | 708    | 3,920  | 201   | 446   | 1,163  | 1,253  | 1,018  | 1,373  | 2,631  | 1,961  | 6,983  |
| September 2004 | 754   | 878    | 1,423  | 734    | 3,789  | 169   | 440   | 1,200  | 1,331  | 923    | 1,318  | 2,623  | 2,065  | 6,929  |
| October 2004   | 823   | 1,051  | 1,593  | 803    | 4,270  | 218   | 435   | 1,287  | 1,442  | 1,041  | 1,486  | 2,880  | 2,245  | 7,652  |
| November 2004  | 803   | 930    | 1,491  | 808    | 4,032  | 199   | 451   | 1,190  | 1,394  | 1,002  | 1,381  | 2,681  | 2,202  | 7,266  |
| December 2004  | 862   | 1,162  | 1,801  | 944    | 4,769  | 231   | 535   | 1,485  | 1,645  | 1,093  | 1,697  | 3,286  | 2,589  | 8,665  |
| January 2005   | 902   | 1,128  | 1,854  | 1,030  | 4,914  | 253   | 499   | 1,497  | 1,742  | 1,155  | 1,627  | 3,351  | 2,772  | 8,905  |
| February 2005  | 757   | 1,035  | 1,667  | 925    | 4,384  | 182   | 483   | 1,373  | 1,556  | 939    | 1,518  | 3,040  | 2,481  | 7,978  |
| March 2005     | 884   | 1,113  | 1,718  | 923    | 4,638  | 212   | 471   | 1,461  | 1,659  | 1,096  | 1,584  | 3,179  | 2,582  | 8,441  |
| April 2005     | 802   | 975    | 1,602  | 827    | 4,206  | 205   | 421   | 1,194  | 1,456  | 1,007  | 1,396  | 2,796  | 2,283  | 7,482  |
| May 2005       | 799   | 935    | 1,523  | 847    | 4,104  | 217   | 420   | 1,222  | 1,405  | 1,016  | 1,355  | 2,745  | 2,252  | 7,368  |
| June 2005      | 760   | 855    | 1,414  | 749    | 3,778  | 171   | 384   | 1,130  | 1,296  | 931    | 1,239  | 2,544  | 2,045  | 6,759  |
| July 2005      | 740   | 866    | 1,385  | 749    | 3,740  | 188   | 389   | 1,065  | 1,261  | 928    | 1,255  | 2,450  | 2,010  | 6,643  |
| Total          | 9,703 | 11,855 | 18,939 | 10,047 | 50,544 | 2,446 | 5,374 | 15,267 | 17,440 | 12,149 | 17,229 | 34,206 | 27,487 | 91,071 |

*Source: Office for National Statistics (2006) personal communication.*

*Figure 1.11 Deaths from CHD by sex and month, 2004/05, England and Wales*

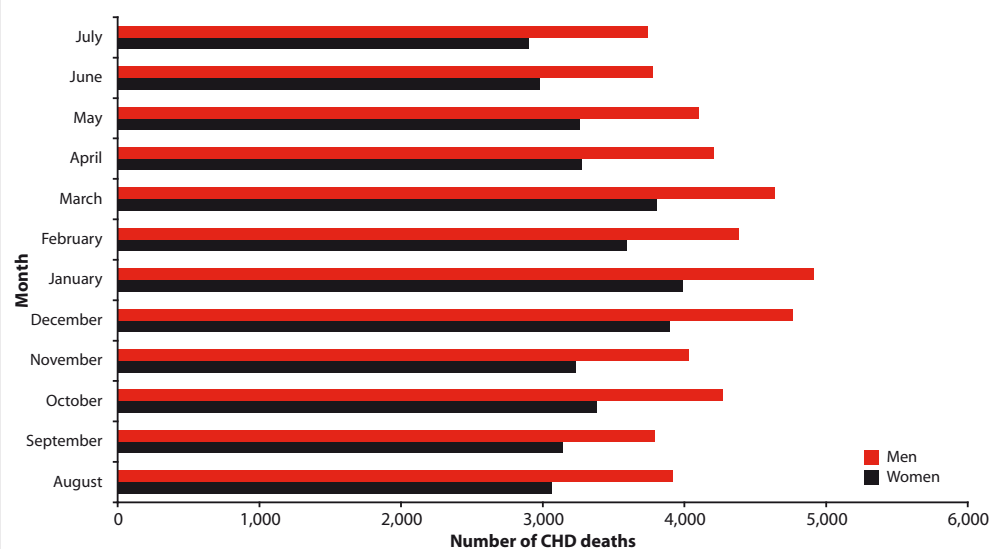


*Table 1.12 Excess winter deaths from CHD by sex, age and Government Office Region, 2004/05, England and Wales*

|                          |          | TOTAL | MEN   | WOMEN | Excess winter<br>deaths index<br>Persons |
|--------------------------|----------|-------|-------|-------|------------------------------------------|
| ENGLAND and WALES        | 0-64     | 350   | 260   | 90    | 8.9                                      |
|                          | 65-74    | 1,020 | 730   | 300   | 19.0                                     |
|                          | 75-84    | 2,180 | 1,090 | 1,090 | 20.4                                     |
|                          | 85+      | 1,890 | 710   | 1,180 | 22.2                                     |
|                          | All ages | 5,450 | 2,790 | 2,660 | 19.1                                     |
| North East               | 0-64     | 10    | 0     | 0     | 2.4                                      |
|                          | 65-74    | 50    | 20    | 30    | 13.0                                     |
|                          | 75-84    | 120   | 30    | 90    | 19.3                                     |
|                          | 85+      | 70    | 20    | 50    | 18.2                                     |
|                          | All ages | 240   | 70    | 170   | 15.1                                     |
| North West               | 0-64     | 40    | 40    | 0     | 6.9                                      |
|                          | 65-74    | 220   | 160   | 60    | 26.0                                     |
|                          | 75-84    | 380   | 170   | 210   | 25.8                                     |
|                          | 85+      | 190   | 60    | 130   | 16.3                                     |
|                          | All ages | 830   | 430   | 400   | 20.3                                     |
| Yorkshire and the Humber | 0-64     | 80    | 70    | 20    | 19.9                                     |
|                          | 65-74    | 100   | 60    | 50    | 18.4                                     |
|                          | 75-84    | 240   | 90    | 140   | 20.7                                     |
|                          | 85+      | 220   | 90    | 130   | 27.0                                     |
|                          | All ages | 640   | 310   | 330   | 21.9                                     |
| East Midlands            | 0-64     | 20    | 10    | 10    | 5.2                                      |
|                          | 65-74    | 120   | 100   | 20    | 27.6                                     |
|                          | 75-84    | 150   | 80    | 70    | 16.7                                     |
|                          | 85+      | 160   | 40    | 130   | 26.2                                     |
|                          | All ages | 450   | 220   | 230   | 19.6                                     |
| West Midlands            | 0-64     | 80    | 60    | 20    | 17.9                                     |
|                          | 65-74    | 100   | 80    | 20    | 17.1                                     |
|                          | 75-84    | 280   | 150   | 130   | 27.5                                     |
|                          | 85+      | 180   | 70    | 110   | 24.0                                     |
|                          | All ages | 640   | 350   | 280   | 22.9                                     |
| East                     | 0-64     | -30   | -30   | 0     | -7.1                                     |
|                          | 65-74    | 130   | 100   | 30    | 25.0                                     |
|                          | 75-84    | 230   | 170   | 60    | 20.7                                     |
|                          | 85+      | 210   | 80    | 130   | 23.1                                     |
|                          | All ages | 540   | 320   | 230   | 18.9                                     |
| London                   | 0-64     | 40    | 30    | 10    | 10.0                                     |
|                          | 65-74    | 40    | 20    | 20    | 6.9                                      |
|                          | 75-84    | 230   | 130   | 100   | 22.6                                     |
|                          | 85+      | 240   | 80    | 160   | 28.5                                     |
|                          | All ages | 550   | 260   | 290   | 19.2                                     |
| South East               | 0-64     | 50    | 40    | 10    | 9.7                                      |
|                          | 65-74    | 110   | 70    | 40    | 15.9                                     |
|                          | 75-84    | 250   | 150   | 100   | 16.4                                     |
|                          | 85+      | 300   | 140   | 160   | 20.9                                     |
|                          | All ages | 710   | 400   | 310   | 17.1                                     |
| South West               | 0-64     | 40    | 30    | 10    | 14.3                                     |
|                          | 65-74    | 110   | 90    | 20    | 22.9                                     |
|                          | 75-84    | 150   | 60    | 100   | 14.0                                     |
|                          | 85+      | 200   | 90    | 120   | 19.2                                     |
|                          | All ages | 510   | 270   | 240   | 17.3                                     |
| Wales                    | 0-64     | 20    | 10    | 10    | 7.1                                      |
|                          | 65-74    | 70    | 50    | 20    | 16.7                                     |
|                          | 75-84    | 150   | 60    | 90    | 20.3                                     |
|                          | 85+      | 120   | 50    | 70    | 20.9                                     |
|                          | All ages | 350   | 170   | 180   | 18.0                                     |
| England                  | 0-64     | 340   | 250   | 90    | 9.2                                      |
|                          | 65-74    | 970   | 690   | 280   | 19.4                                     |
|                          | 75-84    | 2,030 | 1,030 | 1,000 | 20.5                                     |
|                          | 85+      | 1,770 | 660   | 1,110 | 22.3                                     |
|                          | All ages | 5,110 | 2,630 | 2,480 | 19.3                                     |

Notes: Excess winter deaths are defined by the Office for National Statistics as the difference between the number of deaths during the four winter months (December to March) and the average number of deaths during the preceding autumn (August to November) and the following summer (April to July). The number of deaths have been rounded to the nearest 10.  
The excess winter deaths index is calculated as excess winter deaths divided by the average non-winter deaths, expressed as a percentage.

Source: Office for National Statistics (2006) personal communication.

## 2. Morbidity

Morbidity statistics are much harder to collect than mortality statistics. Sources of morbidity data include routinely collected national data, national studies and local studies. Each source has its pros and cons. Most sources only provide data on one or two aspects of morbidity from CHD and related conditions. Not all sources supply data for all ages or even both sexes. Data are collected in different ways with different degrees of validity and reliability. Sample sizes vary considerably as do sampling methods.

In this section we present data and calculate UK estimates from studies which give the widest coverage in terms of age, sex, geographical location, etc. and which used valid and reliable methods of data collection. More detailed statistics on CHD morbidity and explanations of the strengths and weaknesses of the data sources on which estimates are calculated can be found in the *Coronary heart disease statistics Morbidity* supplement<sup>1</sup>, available on the [www.heartstats.org](http://www.heartstats.org) website.

### *Public health targets*

There are no morbidity targets for England, Wales, Scotland or Northern Ireland.

### *Incidence*

#### a) Myocardial infarction

The incidence of myocardial infarction (MI) or heart attack varies around the UK, but on average the incidence rate for men aged between 30 and 69 is about 600 per 100,000 and for women is about 200 per 100,000 (Table 2.1).

From these incidence rates we estimate there are about 91,000 heart attacks per year in men aged under 75 living in the UK and 31,000 in women giving a total of 123,000<sup>2</sup>. A more conservative estimate can be gained from applying the incidence rates for specific age groups observed in the Oxford Record Linkage Study to UK population estimates across the whole population. This procedure gives an estimate of 66,000 heart attacks per year in all men and 45,000 in women giving a total of 111,000 heart attacks. This is almost certainly an underestimate as we would expect the rate of heart attacks to be lower in the South of England than in most other regions of the UK.

Table 2.1 shows that the incidence rate of heart attack for those aged between 30 and 69 is between two and two and a half times the mortality rate. Using 2005 CHD mortality data we estimate there are about 126,000 heart attacks in men of all ages and about 101,000 in women, giving a total of about 227,000.

Further data from the Oxford Myocardial Infarction Incidence Study (OXMIS) show that the incidence rate of heart attack is higher in men than in women and increases with age<sup>3</sup>. It is highly likely that incidence rates, like mortality rates, are higher in Scotland, Northern Ireland and the North of England than in the South of England and Table 2.1 suggests such a trend.

The World Health Organization MONICA (monitoring trends and determinants in cardiovascular disease) Project collected data on the incidence of heart attack in 35 populations in 21 countries during the mid-1980s until the mid-1990s. Results showed that incidence rates in the two UK populations included in the study, Belfast and Glasgow, were among the highest in the world, particularly in women (Table 2.2 and Figures 2.2a and 2.2b).

**b) Angina**

Different studies give different estimates of the incidence of angina. Using data from Scottish Continuous Morbidity Study we estimate there are about 52,000 new cases per year of angina in all men living in the UK and about 43,000 in women giving a total of about 95,000<sup>2</sup>. The incidence of angina is higher in men than women and increases with age (Table 2.3).

**c) Heart failure**

Studies of the incidence of heart failure are scarce and different studies use different methods, particularly for diagnosing the condition. The Hillingdon Heart Failure Study used a combination of clinical assessment, echocardiography and radiography to diagnose heart failure in the study population and adhered to European Society of Cardiology guidelines for its definition of heart failure. The study found a crude incidence rate of 140 per 100,000 for men and 120 per 100,000 for women (Table 2.4).

From the age-specific incidence rates we estimate that there are about 37,000 new cases of heart failure in men in the UK each year and about 30,000 in women giving a total of about 67,000<sup>2</sup>.

The incidence of heart failure increases steeply in the elderly and is more common in men than in women (Table 2.4 and Figure 2.4).

## *Prevalence*

**a) Myocardial infarction**

Different studies give different estimates for the prevalence of a previous heart attack (Tables 2.5 and 2.6). Combined data from these prevalence studies suggest that overall about 4% of men and 2% of women in the UK have had a heart attack.

From the combined age-specific prevalence rates we estimate that there are about 570,000 men aged between 35 and 75 living in the UK who have had a heart attack and about 296,000 women giving a total of about 866,000<sup>2</sup>.

We estimate that for all people older than 35 there are about 640,000 men living in the UK who have had a heart attack and about 353,000 women giving a total of almost 1 million<sup>2</sup>.

Prevalence of heart attack increases with age and is higher in men than in women (Tables 2.5 and 2.6).

**b) Angina**

In general different studies on the prevalence of angina in the UK give similar prevalence rates, although the rate appears to be higher in Scotland than in England (Table 2.7).

Figures from the 2003 Health Survey for England suggest that about 8% of men and 5% of women aged 55 to 64 and about 17% of men and 8% of women aged 65 to 74 have or

have had angina (Table 2.7). From these prevalence rates we estimate that there are about 706,000 men aged between 55 and 75 living in the UK who have or have had angina and about 392,000 women giving a total of just under 1.1 million<sup>2</sup>.

Combined data from these prevalence studies suggest that overall about 5% of men and 3% of women aged 35 and over have or have had angina. From these prevalence rates we estimate that there are almost 800,000 men living in the UK who have or have had angina and almost 530,000 women giving a total of over 1.3 million<sup>2</sup>.

**c) Heart failure**

Different studies on the prevalence of heart failure in the community give similar estimates of prevalence (Table 2.8).

The most recent study, the Heart of England Screening study, selected patients by systematic random sampling of all men and women aged over 45 years registered at GP practices in the West Midlands. Patients were screened using a combination of echocardiography and clinical examination, and European Society of Cardiology criteria for the diagnosis of heart failure were applied. Over 2% of patients (3% of men and 1.7% of women) screened had definite heart failure (Table 2.9). Probable heart failure was seen in around a further 1% of patients, which suggests that more than 3% of people aged 45 and over in the UK have definite or probable heart failure.

From these prevalence rates we estimate that there are about 384,000 men aged 45 and over living in the UK with definite heart failure, and 306,000 women, giving a total of around 690,000<sup>2</sup>. If probable cases of heart failure are included, there are an estimated 934,000 people aged 45 and over who have heart failure in the UK today.

Prevalence of heart failure increases steeply with age, so that while around 1% of men and women aged under 65 have heart failure, this increases to about 7% of those aged 75 to 84 and 15% of those aged 85 and over (Table 2.9).

**d) All coronary heart disease**

Data from the 2003 Health Survey for England suggest the prevalence of CHD in England was 7.4% in men and 4.5% in women. In Scotland in 2003 8% of men and 6% of women were living with CHD. Prevalence rates increase with age, with around 1 in 4 men and 1 in 5 women aged 75 and over living with CHD.

Overall we estimate that there are just over 1.5 million men living in the UK who have had CHD (either angina or heart attack) and about 1.1 million women, giving a total of around 2.6 million<sup>4</sup>.

Data from the General Household Survey allow comparisons to be made between the prevalence of cardiovascular diseases (CVD) and conditions with that of other diseases and conditions. In 2005, CVD was the second most commonly reported longstanding illness in Great Britain (after musculoskeletal conditions) (Table 2.10 and Figure 2.10).

The Quality and Outcomes Framework (QOF) became part of general practice contracts on 1 April 2004 and provides information on the registrations for a number of different diseases. A very high proportion of practices (>98%) participate in the scheme making the register a good measure of prevalence for particular diseases in the population. Table 2.11 shows that

the prevalence of CHD in Britain was 3.6% of all GP registrations. The prevalence of CHD was higher in Scotland (4.6%) than in Wales (4.3%) or England (3.6%). Within countries there is wide variation in the prevalence of CHD. In England the prevalence ranged from 2.2% in South West London to 5.0% in Northumberland, Tyne and Wear and Country Durham; in Scotland the prevalence was generally higher ranging from 4.0% in Lothian and Orkney to 8.4% in Shetland.

Data from Key Health Statistics from General Practice on the prevalence of treated CHD (heart attack and angina) suggest that the prevalence of all CHD was higher in the North of England and in Wales than it was in the South of England, and was also higher in lower socio-economic groups<sup>1</sup>.

The 2004 Health Survey for England, which focused specifically on the health of minority ethnic groups, suggests that the prevalence of heart attack and angina was higher in Indian and Pakistani men, who were just under twice as likely to have experienced these conditions than men in the general population. The prevalence of all CHD in Black Caribbean and Chinese men was much lower than in the general population. In women there was less ethnic variation in the prevalence of all CHD, with only Chinese women having levels of all CHD which were lower than those found in women in the general population (Table 2.12).

## Temporal trends

Prevalence of CHD was measured in the 1994, 1998 and 2003 Health Surveys for England. Overall, between 1994 and 2003, the prevalence of CHD increased from 6.0% to 7.4% in men and from 4.1% to 4.5% in women. An increase in the prevalence of CHD or stroke was also observed in the Health Survey for England, increasing from 7.1% to 9.1% in men and from 5.2% to 6.3% in women between 1994 and 2003 (Table 2.13 and Figure 2.13). These increases were found in the majority of age groups in both men and women, with the most consistent increase in trend found in the oldest age group (75 years and over). However, these results are based on unweighted prevalence rates and need to be interpreted with caution.

Longitudinal data from the General Household Survey show that since 1988 there has been no marked change in the overall rate of self-reported morbidity from a previous heart attack. However, rates of self-reported longstanding cardiovascular disease have increased in older age groups since 1988; by around 15% in those aged 65 to 74 and 48% for men and 18% for women in those aged 75 and over (Table 2.14 and Figure 2.14).

In summary, the surveys which have looked at morbidity most reliably and/or most frequently, i.e. the Health Survey for England and the General Household Survey, suggest that, whereas mortality from CHD is rapidly falling, morbidity, particularly in older age groups, appears to be rising.

1. Rayner M, Petersen S, Moher M, Wright L and Lampe, F (2001) *Coronary heart disease statistics: morbidity supplement*. British Heart Foundation: London. See also [www.heartstats.org](http://www.heartstats.org)
2. These estimates are derived from applying age-specific rates to the UK population estimates for 2005, and supersede our estimates in previous publications (e.g. Petersen S, Peto V and Rayner M (2005) *Coronary heart disease statistics*. British Heart Foundation: London). Previous estimates for angina were based on incidence rates per person years at risk, these are based on prevalence rates per 100,000 people.
3. Volmink JA, Newton JN, Hicks NR, Sleight P, Fowler GH, Neil HAW, on behalf of the Oxford Myocardial Infarction Incidence Study Group (1998) *Coronary event and case fatality rates in an English population: results of the Oxford myocardial infarction incidence study*. *Heart* 80; 40-44. See Table 1.1a *Coronary heart disease statistics: morbidity supplement* (above).
4. The overall CHD prevalence estimates are based on 2003 Health Survey for England age-specific prevalence data for CHD (heart attack and/or angina). We can also estimate that there are about 1.1 million men aged under 75 living in the UK who have CHD and about 563,000 women, giving a total of about 1.6 million.

**Table 2.1** *Incidence of myocardial infarction, adults, latest available year, UK studies compared*

| Source                     | Study                          | Year    | Place         | Sex   | Age group | Incidence/<br>100,000 | Mortality/<br>100,000 | Incidence/<br>mortality |
|----------------------------|--------------------------------|---------|---------------|-------|-----------|-----------------------|-----------------------|-------------------------|
| Goldacre M, 2001.          | Oxford Record<br>Linkage Study | 1994/98 | Oxfordshire   | Men   | 35-39     | 22                    | 6                     | 3.67                    |
|                            |                                |         |               |       | 40-44     | 48                    | 14                    | 3.43                    |
|                            |                                |         |               |       | 45-49     | 95                    | 31                    | 3.06                    |
|                            |                                |         |               |       | 50-54     | 159                   | 58                    | 2.74                    |
|                            |                                |         |               |       | 55-59     | 265                   | 101                   | 2.62                    |
|                            |                                |         |               |       | 60-64     | 425                   | 201                   | 2.11                    |
|                            |                                |         |               |       | 65-69     | 656                   | 368                   | 1.78                    |
|                            |                                |         |               |       | 70-74     | 915                   | 572                   | 1.60                    |
|                            |                                |         |               |       | 75-79     | 1,353                 | 931                   | 1.45                    |
|                            |                                |         |               |       | 80-84     | 1,812                 | 1,374                 | 1.32                    |
|                            |                                |         |               |       | 85+       | 2,212                 | 1,812                 | 1.22                    |
|                            |                                |         |               | Women | 35-39     | 2                     | 1                     | 2.00                    |
|                            |                                |         |               |       | 40-44     | 9                     | 2                     | 4.50                    |
|                            |                                |         |               |       | 45-49     | 16                    | 6                     | 2.67                    |
|                            |                                |         |               |       | 50-54     | 27                    | 9                     | 3.00                    |
|                            |                                |         |               |       | 55-59     | 74                    | 22                    | 3.36                    |
|                            |                                |         |               |       | 60-64     | 151                   | 68                    | 2.22                    |
|                            |                                |         |               |       | 65-69     | 282                   | 154                   | 1.83                    |
|                            |                                |         |               |       | 70-74     | 456                   | 275                   | 1.66                    |
|                            |                                |         |               |       | 75-79     | 741                   | 506                   | 1.46                    |
|                            |                                |         |               |       | 80-84     | 1,091                 | 854                   | 1.28                    |
|                            |                                |         |               |       | 85+       | 1,528                 | 1,294                 | 1.18                    |
| Volmink et al, 1998        | OXMIS                          | 1994/95 | Oxfordshire   | Men   | 30-69     | 292                   | 120                   | 2.43                    |
|                            |                                |         |               | Women | 30-69     | 94                    | 44                    | 2.14                    |
| Tunstall-Pedoe et al, 1999 | MONICA                         | 1985/94 | Glasgow       | Men   | 35-64     | 777                   | 365                   | 2.13                    |
|                            |                                |         |               | Women | 35-64     | 265                   | 123                   | 2.15                    |
| Tunstall-Pedoe et al, 1999 | MONICA                         | 1983/93 | Belfast       | Men   | 35-64     | 695                   | 279                   | 2.49                    |
|                            |                                |         |               | Women | 35-64     | 188                   | 79                    | 2.38                    |
| Lampe et al, 2000          | BRHS                           | 1983/85 | Great Britain | Men   | 45-59     | 950                   | 426                   | 2.23                    |

Notes: See sources for methods and definitions.

Source: Goldacre M (2001) *Myocardial infarction: an investigation of measures of mortality incidence and case fatality*. Personal communication.

Volmink JA, Newton JN, Hicks NR, Sleight P, Fowler GH, Neil HAW, on behalf of the Oxford Myocardial Infarction Incidence Study Group (1998) *Coronary event and case fatality rates in an English population: results of the Oxford myocardial infarction incidence study*. *Heart* 80; 40-44.

Tunstall-Pedoe H, Kuulasmaa K, Mahonen M, Tolonen H, Ruokokoski E, Amouyel P, for the WHO MONICA Project (1999). *Contribution of trends in survival and coronary-event rates to changes in coronary heart disease mortality: 10 year results from 37 WHO MONICA Project populations*. *Lancet* 353; 1547-1557.

Lampe FC, Morris RW, Whincup PH, Walker M, Ebrahim S and Shaper AG (2000) *Is the prevalence of coronary heart disease falling in British men? The British Regional Heart Study, 1978 to 1996*. Poster at Cardiovascular Disease Prevention V conference, 4th-7th April, Kensington Town Hall, London.

**Table 2.2** *Coronary event rates, coronary case fatality, annual change in coronary event rates and annual change in coronary case fatality, adults aged 35 to 64, by sex, latest available data, MONICA Project populations*

| MONICA population            | MONICA population code | Survey years | MEN                 |             |                                        |                                                            | WOMEN               |             |                                        |                                                |
|------------------------------|------------------------|--------------|---------------------|-------------|----------------------------------------|------------------------------------------------------------|---------------------|-------------|----------------------------------------|------------------------------------------------|
|                              |                        |              | Coronary event rate |             | Annual change in coronary event rate % | Coronary case fatality rate % of fatalities within 28 days | Coronary event rate |             | Annual change in coronary event rate % | Annual change in coronary case fatality rate % |
|                              |                        |              | Events per 100,000  | per 100,000 |                                        |                                                            | Events per 100,000  | per 100,000 |                                        |                                                |
| Australia-Newcastle          | AUS-NEW                | 1985/93      | 479                 |             | -5.1                                   | 40.6                                                       | 153                 |             | -5.6                                   | -3.0                                           |
| Australia-Perth              | AUS-PER                | 1984/93      | 389                 |             | -3.1                                   | 36.8                                                       | 92                  |             | -2.2                                   | -2.3                                           |
| Belgium-Charleroi            | BEL-CHA                | 1983/92      | 487                 |             | 0.3                                    | 50.1                                                       | 118                 |             | 1.1                                    | -1.8                                           |
| Belgium-Ghent                | BEL-GHE                | 1983/92      | 346                 |             | -3.2                                   | 47.4                                                       | 77                  |             | -3.0                                   | -1.8                                           |
| Canada-Hallifax County       | CAN-HAL                | 1984/93      | 523                 |             | -4.7                                   | 37.5                                                       | 139                 |             | 0.5                                    | -4.6                                           |
| China-Beijing                | CHN-BEI                | 1984/93      | 81                  |             | 2.3                                    | 58.8                                                       | 35                  |             | -0.5                                   | 1.3                                            |
| Czech Republic               | CZE-CZE                | 1984/93      | 515                 |             | -0.4                                   | 52.8                                                       | 101                 |             | 2.1                                    | -1.2                                           |
| Denmark-Glostrup             | DEN-GLO                | 1982/91      | 517                 |             | -4.2                                   | 52.5                                                       | 140                 |             | -2.5                                   | 2.5                                            |
| Finland-Kuopio Province      | FIN-KUO                | 1983/92      | 718                 |             | -6.0                                   | 45.7                                                       | 124                 |             | -4.5                                   | 1.0                                            |
| Finland-North Karelia        | FIN-NKA                | 1983/92      | 835                 |             | -6.5                                   | 48.1                                                       | 145                 |             | -5.1                                   | -0.2                                           |
| Finland-Turku/Loumaa         | FIN-TUL                | 1983/92      | 549                 |             | -4.2                                   | 48.5                                                       | 94                  |             | -4.5                                   | -1.9                                           |
| France-Lille                 | FRA-LIL                | 1985/94      | 298                 |             | -1.1                                   | 58.7                                                       | 64                  |             | -1.6                                   | 0.8                                            |
| France-Strasbourg            | FRA-STR                | 1985/93      | 292                 |             | -3.9                                   | 49.0                                                       | 64                  |             | -6.6                                   | -2.3                                           |
| France-Toulouse              | FRA-TOU                | 1985/93      | 233                 |             | -2.1                                   | 40.0                                                       | 36                  |             | -1.7                                   | -3.6                                           |
| Germany-Augsburg             | GER-AUG                | 1985/94      | 286                 |             | -3.2                                   | 55.1                                                       | 63                  |             | 0.9                                    | -0.4                                           |
| Germany-Bremen               | GER-BRE                | 1985/92      | 361                 |             | -3.4                                   | 49.6                                                       | 81                  |             | 0.7                                    | -2.9                                           |
| Germany-East Germany         | GER-EGE                | 1985/93      | 370                 |             | -0.5                                   | 50.0                                                       | 78                  |             | 2.5                                    | -2.2                                           |
| Iceland                      | ICE-ICE                | 1981/94      | 486                 |             | -4.7                                   | 36.9                                                       | 99                  |             | -3.7                                   | -1.0                                           |
| Italy-Area Brianza           | ITA-BRI                | 1985/94      | 279                 |             | -2.3                                   | 40.7                                                       | 42                  |             | -3.5                                   | -4.8                                           |
| Italy-Friuli                 | ITA-FRI                | 1984/93      | 253                 |             | -0.9                                   | 45.1                                                       | 47                  |             | -0.8                                   | -2.0                                           |
| Lithuania-Kaunas             | LIT-KAU                | 1983/92      | 498                 |             | 1.2                                    | 54.8                                                       | 80                  |             | 2.7                                    | -1.2                                           |
| New Zealand-Auckland         | NEZ-AUC                | 1983/91      | 434                 |             | -5.1                                   | 49.5                                                       | 115                 |             | -3.5                                   | 0.6                                            |
| Poland-Tarnobrzeg Vovodship  | POL-TAR                | 1984/93      | 461                 |             | 1.1                                    | 82.7                                                       | 110                 |             | -0.1                                   | -0.7                                           |
| Poland-Warsaw                | POL-WAR                | 1984/94      | 586                 |             | -0.8                                   | 59.9                                                       | 153                 |             | 1.0                                    | -2.1                                           |
| Russia-Moscow (control)      | RUS-MOC                | 1985/93      | 477                 |             | -1.0                                   | 60.7                                                       | 92                  |             | -6.7                                   | 1.5                                            |
| Russia-Novosibirsk (control) | RUS-NOC                | 1984/92      | 464                 |             | 0.9                                    | 59.9                                                       | 111                 |             | 2.3                                    | 0.3                                            |
| Spain-Catalonia              | SPA-CAT                | 1985/94      | 210                 |             | 1.8                                    | 36.7                                                       | 35                  |             | 2.0                                    | 1.5                                            |
| Sweden-Gothenburg            | SWE-GOT                | 1984/94      | 363                 |             | -4.2                                   | 43.6                                                       | 84                  |             | -3.7                                   | 1.2                                            |
| Sweden-Northern Sweden       | SWE-NSW                | 1985/95      | 509                 |             | -5.1                                   | 36.1                                                       | 119                 |             | -2.4                                   | 0.4                                            |
| Switzerland-Ticino           | SWI-TIC                | 1985/93      | 290                 |             | -2.6                                   | 33.5                                                       |                     |             |                                        |                                                |
| Switzerland-Vaud/Fribourg    | SWI-VAF                | 1985/93      | 231                 |             | -3.6                                   | 38.4                                                       |                     |             | -2.4                                   | -1.7                                           |
| United Kingdom-Belfast       | UNK-BEL                | 1983/93      | 695                 |             | -4.6                                   | 41.0                                                       | 265                 |             | 0.2                                    | -2.1                                           |
| United Kingdom-Glasgow       | UNK-GLA                | 1985/94      | 777                 |             | -1.4                                   | 48.2                                                       | 134                 |             | -2.4                                   | -0.4                                           |
| United States-Stanford       | USA-STA                | 1980/92      | 431                 |             | -4.2                                   | 47.9                                                       | 101                 |             | 2.8                                    | 0.5                                            |
| Yugoslavia-Novi Sad          | YUG-NOS                | 1984/95      | 422                 |             | 0.4                                    | 51.9                                                       |                     |             |                                        |                                                |

Notes: Rates are for MONICA event definition 1 which includes fatal definite MI, fatal possible MI, unclassifiable death and nonfatal definite MI. Age-standardised rates: see source for details and how trends were calculated.

Source: Tunstall-Pedoe H, Kuusasmaa K, Mahonen M, Tolonen H, Ruokokoski E, Amouyel P, for the WHO MONICA Project (1999). Contribution of trends in survival and coronary-event rates to changes in coronary heart disease mortality: 10-year results from 37 MONICA Project populations. *Lancet* 353; 1547-1557.

Figure 2.2a Age-standardised coronary event rates, men aged 35 to 64, latest data, MONICA Project populations

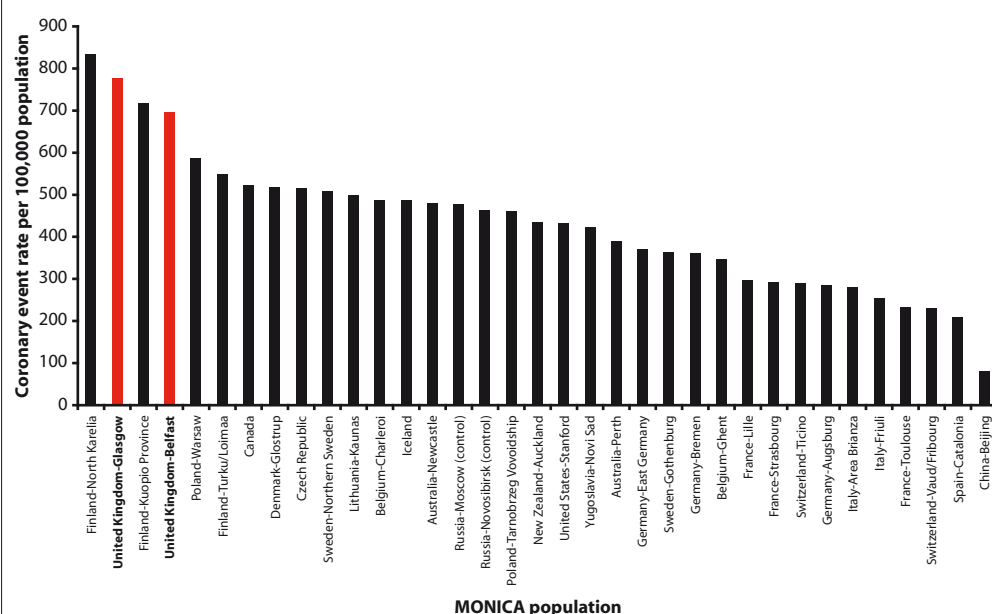


Figure 2.2b Age-standardised coronary event rates, women aged 35 to 64, latest data, MONICA Project populations

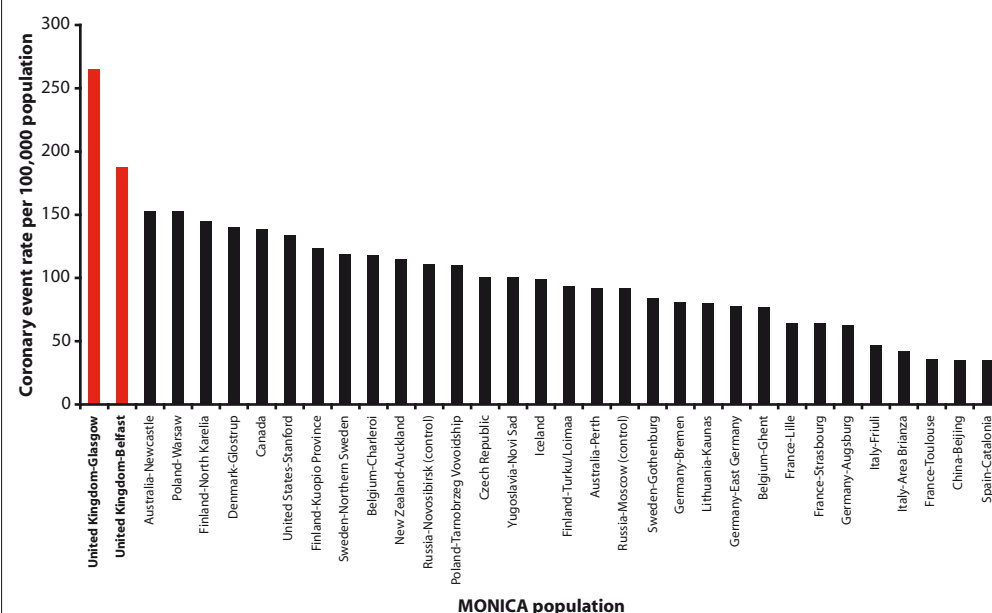


**Table 2.3**     *Incidence of angina, adults, latest available year, UK studies compared*

| Source                                             | Study                                                            | Year    | Place             | Sex   | Age group    | Incidence/<br>100,000 |
|----------------------------------------------------|------------------------------------------------------------------|---------|-------------------|-------|--------------|-----------------------|
| Murphy et al, 2006                                 | Scottish Continuous Morbidity Study                              | 2001/02 | Scotland          | Men   | <45          | 10                    |
|                                                    |                                                                  |         |                   |       | 45-54        | 240                   |
|                                                    |                                                                  |         |                   |       | 55-64        | 490                   |
|                                                    |                                                                  |         |                   |       | 65-74        | 650                   |
|                                                    |                                                                  |         |                   |       | 75-84        | 610                   |
|                                                    |                                                                  |         |                   |       | >85          | 310                   |
|                                                    |                                                                  |         |                   |       | <b>Total</b> | <b>180</b>            |
|                                                    |                                                                  |         |                   | Women | <45          | 10                    |
|                                                    |                                                                  |         |                   |       | 45-54        | 150                   |
|                                                    |                                                                  |         |                   |       | 55-64        | 300                   |
|                                                    |                                                                  |         |                   |       | 65-74        | 440                   |
|                                                    |                                                                  |         |                   |       | 75-84        | 580                   |
|                                                    |                                                                  |         |                   |       | >85          | 320                   |
|                                                    |                                                                  |         |                   |       | <b>Total</b> | <b>140</b>            |
| Royal College of General Practitioners et al, 1995 | 4th National Study of Morbidity Statistics from General Practice | 1991/92 | England and Wales | Men   | <25          | 0                     |
|                                                    |                                                                  |         |                   |       | 25-44        | 90                    |
|                                                    |                                                                  |         |                   |       | 45-64        | 1,080                 |
|                                                    |                                                                  |         |                   |       | 65-74        | 2,250                 |
|                                                    |                                                                  |         |                   |       | 75-84        | 2,730                 |
|                                                    |                                                                  |         |                   |       | >85          | 2,020                 |
|                                                    |                                                                  |         |                   |       | <b>Total</b> | <b>550</b>            |
|                                                    |                                                                  |         |                   | Women | <25          | 0                     |
|                                                    |                                                                  |         |                   |       | 25-44        | 40                    |
|                                                    |                                                                  |         |                   |       | 45-64        | 660                   |
|                                                    |                                                                  |         |                   |       | 65-74        | 1,760                 |
|                                                    |                                                                  |         |                   |       | 75-84        | 2,240                 |
|                                                    |                                                                  |         |                   |       | >85          | 2,150                 |
|                                                    |                                                                  |         |                   |       | <b>Total</b> | <b>490</b>            |
| Ghandi et al, 1995                                 | Southampton Chest Pain Clinic Survey                             | 1990/92 | Southampton       | Men   | 31-40        | 40                    |
|                                                    |                                                                  |         |                   |       | 41-50        | 63                    |
|                                                    |                                                                  |         |                   |       | 51-60        | 147                   |
|                                                    |                                                                  |         |                   |       | 61-70        | 262                   |
|                                                    |                                                                  |         |                   |       | <b>Total</b> | <b>113</b>            |
|                                                    |                                                                  |         |                   | Women | 31-40        | 6                     |
|                                                    |                                                                  |         |                   |       | 41-50        | 47                    |
|                                                    |                                                                  |         |                   |       | 51-60        | 85                    |
|                                                    |                                                                  |         |                   |       | 61-70        | 91                    |
|                                                    |                                                                  |         |                   |       | <b>Total</b> | <b>53</b>             |
| Gill et al, 1999                                   | One general practice in Oxford                                   | 1989/91 | Oxford            | Men   | 45-54        | 830                   |
|                                                    |                                                                  |         |                   |       | 55-64        | 1,353                 |
|                                                    |                                                                  |         |                   |       | 65-74        | 930                   |
|                                                    |                                                                  |         |                   |       | <b>Total</b> | <b>1,043</b>          |
|                                                    |                                                                  |         |                   | Women | 45-54        | 643                   |
|                                                    |                                                                  |         |                   |       | 55-64        | 1,257                 |
|                                                    |                                                                  |         |                   |       | 65-74        | 827                   |
|                                                    |                                                                  |         |                   |       | <b>Total</b> | <b>903</b>            |

**Notes:**     *Incidence of angina from Scottish Continuous Morbidity Study (SCMS) relates to first ever diagnosis of angina.*

*Total population for SCMS was 362,155; total number of cases was 570 (315 for men and 255 for women).*

*Total population for Southampton Chest Pain Clinic Survey was 191,677; total number of cases were 110 (70 for men and 40 for women).*

*Total population for Oxford study was 1,984; total number of cases was 58 (31 for men, 27 for women).*

**Source:**     *Murphy NF, Simson CR, MacIntyre K, McAlister FA, Chalmers J, McMurray JJV (2006) Prevalence, incidence, primary care burden and medical treatment of angina in Scotland: age, sex and socioeconomic disparities: a population-based study. Heart; 92: 1047-1054.*

*Ghandbi MM, Lampe FA, Wood DA (1995) Incidence, clinical characteristics, and short term prognosis of angina pectoris. British Heart Journal; 73: 193-198.*

*Gill D, Mayou R, Dawes M, Mant D (1999) Presentation, management and course of angina and suspected angina in primary care. Journal of Psychosomatic Research; 46: 349-358.*

*Royal College of General Practitioners, the Office of Population Censuses and Surveys and the Department of Health (1995) Morbidity Statistics from General Practice, Fourth National Study 1991-1992. HMSO:London.*

**Table 2.4** Incidence of heart failure by sex and age, 1995/96, Hillingdon, England

| Age group    | Population     | Number of cases | Incidence/1000 population |
|--------------|----------------|-----------------|---------------------------|
| <b>MEN</b>   |                |                 |                           |
| 25-34        | 14,042         | 0               | 0.0                       |
| 35-44        | 11,135         | 3               | 0.2                       |
| 45-54        | 9,405          | 4               | 0.3                       |
| 55-64        | 7,408          | 21              | 1.7                       |
| 65-74        | 5,260          | 34              | 3.9                       |
| 75-84        | 2,506          | 41              | 9.8                       |
| 85+          | 537            | 15              | 16.8                      |
| <b>Total</b> | <b>50,293</b>  | <b>118</b>      | <b>1.4</b>                |
| <b>WOMEN</b> |                |                 |                           |
| 25-34        | 13,620         | 1               | 0.04                      |
| 35-44        | 10,056         | 3               | 0.2                       |
| 45-54        | 8,827          | 1               | 0.1                       |
| 55-64        | 7,157          | 8               | 0.7                       |
| 65-74        | 6,243          | 24              | 2.3                       |
| 75-84        | 4,254          | 42              | 5.9                       |
| 85+          | 1,435          | 23              | 9.6                       |
| <b>Total</b> | <b>51,592</b>  | <b>102</b>      | <b>1.2</b>                |
| <b>TOTAL</b> |                |                 |                           |
| 25-34        | 27,662         | 1               | 0.02                      |
| 35-44        | 21,191         | 6               | 0.2                       |
| 45-54        | 18,232         | 5               | 0.2                       |
| 55-64        | 14,565         | 29              | 1.2                       |
| 65-74        | 11,503         | 58              | 3.0                       |
| 75-84        | 6,760          | 83              | 7.4                       |
| 85+          | 1,972          | 38              | 11.6                      |
| <b>Total</b> | <b>101,885</b> | <b>220</b>      | <b>1.3</b>                |

Source: Cowie MR, Wood DA, Coats AJS, Thompson SG, Poole-Wilson PA, Suresh V and Sutton GC (1999) Incidence and aetiology of heart failure. A population-based study. *European Heart Journal* 20; 421-428.

**Figure 2.4** Incidence of heart failure by sex and age, 1995/96, Hillingdon, England

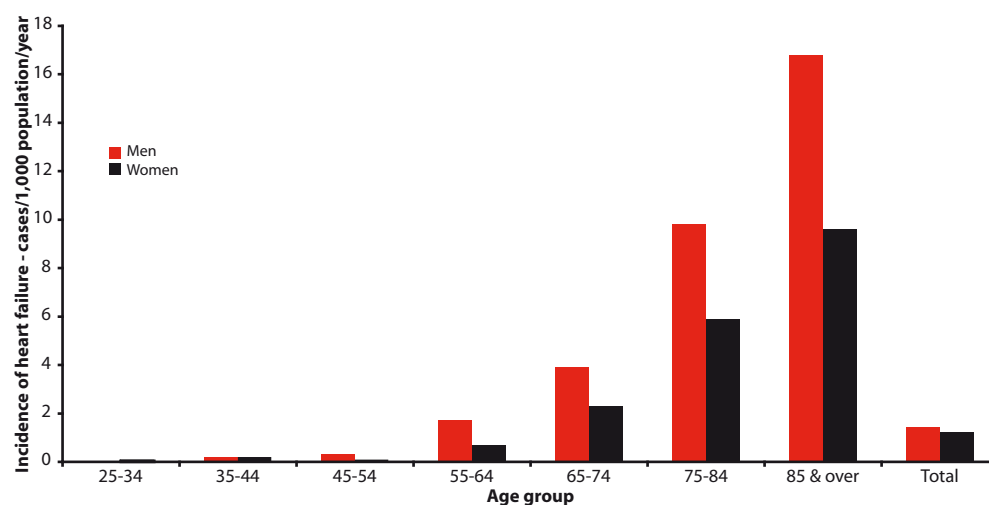


**Table 2.5**    *Prevalence of myocardial infarction, adults aged between 55 and 74, latest available year, UK studies compared*

| Source                                             | Study                                                            | Year    | Place             | MEN   |       | WOMEN |       |
|----------------------------------------------------|------------------------------------------------------------------|---------|-------------------|-------|-------|-------|-------|
|                                                    |                                                                  |         |                   | 55-64 | 65-74 | 55-64 | 65-74 |
|                                                    |                                                                  |         |                   | %     | %     | %     | %     |
| Joint Health Surveys Unit, 2004                    | HSE                                                              | 2003    | England           | 6.7   | 12.1  | 2.1   | 4.2   |
| Joint Health Surveys Unit, 1999                    | HSE                                                              | 1998    | England           | 8.4   | 11.6  | 2.4   | 5.5   |
| Personal communication                             | ASSIST                                                           | 1997/98 | Warwickshire      | 4.7   | 7.8   | 0.9   | 2.7   |
| Royal College of General Practitioners et al, 1995 | 4th National Study of Morbidity Statistics from General Practice | 1991/92 | England and Wales | 0.7** | 1.6   | 0.2** | 0.7   |
| Personal communication                             | BRHS                                                             | 1992    | Great Britain     | 8.0   | 13.1  |       |       |

Notes: Data from the 4th National Study of Morbidity Statistics from General Practice is for adults aged between 45 and 74.

\*\* for those aged 45-64.

As 1998 Health Survey for England data is unweighted and 2003 Health Survey for England data is weighted, comparisons between surveys are problematic.

Source: Department of Health (1999) Health Survey for England 1998. The Stationery Office: London.

Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

M Moher on behalf of the ASSIST trial team, Department of Primary Health Care, University of Oxford, personal communication.

Royal College of General Practitioners, the Office of Population Censuses and Surveys and the Department of Health (1995).

Morbidity Statistics from General Practice, Fourth National Study 1991-1992. HMSO: London.

F Lampe on behalf of the BRHS team, Department of Primary Care and Population Sciences, Royal Free and University College Medical School, London, personal communication.

**Table 2.6** *Percentage who have experienced cardiovascular conditions (ever and recently) by sex and age, 2003, England*

|                                                 | All ages | 16-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+  |
|-------------------------------------------------|----------|-------|-------|-------|-------|-------|-------|------|
|                                                 | %        | %     | %     | %     | %     | %     | %     | %    |
| <b>MEN</b>                                      |          |       |       |       |       |       |       |      |
| <b>Ever experienced</b>                         |          |       |       |       |       |       |       |      |
| Angina                                          | 4.8      | -     | -     | 0.8   | 2.4   | 7.5   | 17.4  | 19.6 |
| Myocardial infarction                           | 3.8      | -     | -     | 0.8   | 2.2   | 6.7   | 12.1  | 15.7 |
| Heart murmur                                    | 3.1      | 2.6   | 2.2   | 2.7   | 2.5   | 2.8   | 4.8   | 7.8  |
| Abnormal heart rhythm                           | 5.1      | 2.4   | 1.7   | 2.7   | 4.9   | 7.3   | 11.8  | 12.2 |
| Other heart trouble                             | 2.8      | 0.4   | 0.8   | 1.2   | 2.1   | 4.6   | 7.3   | 9.4  |
| Stroke                                          | 2.4      | 0.1   | 0.4   | 0.3   | 1.2   | 2.2   | 7.5   | 13.3 |
| <b>Recently experienced (in last 12 months)</b> |          |       |       |       |       |       |       |      |
| Angina                                          | 2.5      | -     | -     | 0.4   | 1.6   | 4.4   | 8.2   | 10.3 |
| Myocardial infarction                           | 0.4      | -     | -     | -     | 0.3   | 1.0   | 0.7   | 1.5  |
| Heart murmur                                    | 1.1      | 0.8   | 0.4   | 1.0   | 0.6   | 1.4   | 1.9   | 3.7  |
| Abnormal heart rhythm                           | 2.8      | 1.7   | 0.5   | 1.4   | 2.3   | 4.1   | 6.7   | 7.4  |
| Other heart trouble                             | 1.2      | 0.2   | 0.3   | 0.4   | 1.0   | 1.8   | 3.5   | 4.3  |
| Stroke                                          | 0.4      | 0.1   | 0.1   | -     | 0.3   | 0.4   | 0.4   | 2.7  |
| <i>Unweighted base</i>                          | 6,602    | 746   | 1,025 | 1,263 | 1,101 | 1,103 | 807   | 557  |
| <i>Weighted base</i>                            | 7,202    | 1,047 | 1,274 | 1,416 | 1,185 | 1,043 | 731   | 507  |
| <b>WOMEN</b>                                    |          |       |       |       |       |       |       |      |
| <b>Ever experienced</b>                         |          |       |       |       |       |       |       |      |
| Angina                                          | 3.4      | 0.3   | -     | 0.2   | 1.5   | 5.0   | 7.9   | 14.8 |
| Myocardial infarction                           | 1.7      | -     | -     | 0.3   | 0.8   | 2.1   | 4.2   | 8.1  |
| Heart murmur                                    | 3.4      | 2.4   | 2.4   | 2.6   | 3.2   | 3.5   | 5.6   | 5.5  |
| Abnormal heart rhythm                           | 5.6      | 2.3   | 2.9   | 5.4   | 6.1   | 6.9   | 7.3   | 10.6 |
| Other heart trouble                             | 1.8      | 0.4   | 0.5   | 1.0   | 1.5   | 2.6   | 2.8   | 6.0  |
| Stroke                                          | 2.2      | 0.2   | 0.3   | 0.6   | 0.9   | 2.5   | 5.3   | 8.8  |
| <b>Recently experienced (in last 12 months)</b> |          |       |       |       |       |       |       |      |
| Angina                                          | 2.0      | -     | -     | 0.1   | 1.1   | 2.8   | 4.7   | 9.4  |
| Myocardial infarction                           | 0.2      | -     | -     | -     | -     | 0.5   | 0.2   | 1.1  |
| Heart murmur                                    | 1.3      | 0.8   | 0.7   | 0.7   | 1.4   | 1.1   | 2.0   | 2.9  |
| Abnormal heart rhythm                           | 2.8      | 1.1   | 1.5   | 2.5   | 2.0   | 3.5   | 4.6   | 5.6  |
| Other heart trouble                             | 0.9      | 0.2   | 0.2   | 0.4   | 0.5   | 1.3   | 1.4   | 2.8  |
| Stroke                                          | 0.4      | 0.1   | -     | 0.3   | 0.2   | 0.2   | 1.0   | 1.6  |
| <i>Unweighted base</i>                          | 8,234    | 890   | 1,285 | 1,618 | 1,279 | 1,307 | 952   | 903  |
| <i>Weighted base</i>                            | 7,634    | 1,034 | 1,285 | 1,440 | 1,200 | 1,074 | 816   | 785  |

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 2.7**    *Prevalence of angina, adults aged between 55 and 74, latest available year, UK studies compared*

| Source                                             | Study                                                            | Year    | Place             | MEN        |            | WOMEN      |            |
|----------------------------------------------------|------------------------------------------------------------------|---------|-------------------|------------|------------|------------|------------|
|                                                    |                                                                  |         |                   | 55-64<br>% | 65-74<br>% | 55-64<br>% | 65-74<br>% |
| Scottish Executive, 2005                           | Scottish Health Survey                                           | 2003    | Scotland          | 11.2       | 20.8       | 7.4        | 14.8       |
| Department of Health, 2004                         | HSE                                                              | 2003    | England           | 7.5        | 17.4       | 5.0        | 7.9        |
| Department of Health, 1999                         | HSE                                                              | 1998    | England           | 10.5       | 15.6       | 5.5        | 9.9        |
| Personal communication                             | ASSIST                                                           | 1997/98 | Warwickshire      | 6.5        | 11.5       | 2.5        | 6.2        |
| Personal communication                             | BRHS                                                             | 1992    | Great Britain     | 9.2        | 16.2       |            |            |
| Royal College of General Practitioners et al, 1995 | 4th National Study of Morbidity Statistics from General Practice | 1991/92 | England and Wales | 2.6*       | 5.8        | 1.3*       | 3.6        |
| Gill et al, 1999                                   | One general practice in Oxford                                   | 1991    | Oxford            | 10.4       | 13.6       | 6.1        | 7.4        |

Notes: Data from the 4th National Study of Morbidity Statistics from General Practice is for adults aged between 45 and 74.

\* for those aged 45-64.

As 1998 Health Survey for England data is unweighted and 2003 Health Survey for England data is weighted, comparisons between surveys are problematic.

Source: Scottish Executive (2005) The Scottish Health Survey 2003. <http://www.scotland.gov.uk/Publications/2005/11/25145024/50251>

Department of Health (1999) Health Survey for England 1998. The Stationery Office: London.

Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

M Moher on behalf of the ASSIST trial team, Department of Primary Health Care, University of Oxford, personal communication.

Royal College of General Practitioners, the Office of Population Censuses and Surveys and the Department of Health (1995)

Morbidity Statistics from General Practice, Fourth National Study 1991-1992. HMSO:London.

Gill D, Mayou R, Davies M, Mant D (1999) Presentation, management and course of angina and suspected angina in primary care. *Journal of Psychosomatic Research*; 40; 349-358.

F Lampe on behalf of the BRHS team, Department of Primary Care and Population Sciences, Royal Free and University College Medical School, London, personal communication.

**Table 2.8** Prevalence of heart failure, adults aged between 45 and 84, latest available year, UK studies compared

| Source                                             | Study                                                            | Year    | Place                   | MEN        |            |            |            | WOMEN      |            |            |            |
|----------------------------------------------------|------------------------------------------------------------------|---------|-------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                                    |                                                                  |         |                         | 45-54<br>% | 55-64<br>% | 65-74<br>% | 75-84<br>% | 45-54<br>% | 55-64<br>% | 65-74<br>% | 75-84<br>% |
| Royal College of General Practitioners et al, 1995 | 4th National Study of Morbidity Statistics from General Practice | 1991/92 | England and Wales       |            | 0.5*       | 3.2        | 8.0        |            | 0.4*       | 2.3        | 7.1        |
| McDonagh et al, 1997                               | MONICA                                                           | 1992    | Glasgow                 |            | 2.5        | 3.2        |            |            | 2.0        | 3.6        |            |
| Mair et al, 1996                                   | Two general practices in Liverpool                               | 1994    | Liverpool               |            | 2.7        | 5.3        | 10.4**     |            | 1.2        | 5.1        | 13.3**     |
| Office for National Statistics, 2000               | Key Health Statistics from General Practice                      | 1998    | England and Wales       | 0.3        | 1.4        | 4.5        | 10.9       | 0.2        | 0.9        | 3.6        | 9.9        |
| Davies et al, 2001                                 | Heart of England Screening Study                                 | 1995/99 | West Midlands           | 0.3        | 2.7        | 4.2        | 7.3        | 0          | 0.9        | 1.7        | 6.6        |
| Majeed et al, 2005                                 | General Practice Study                                           | 2002/03 | Kent, Surrey and Sussex | 0.1        | 0.6        | 2.4        | 6.8        | 0.1        | 0.3        | 1.5        | 6.1        |

Notes:  
\* for those aged 45-64 years  
\*\* for those aged 75 & over

Source: Majeed A, Williams J, de Lusignan S, Chan T (2005) Management of heart failure in primary care after implementation of the National Service Framework for Coronary Heart Disease: a cross-sectional study. *Public Health* 119: 105-111.

Royal College of General Practitioners, the Office of Population Censuses and Surveys and the Department of Health (1995) Morbidity Statistics from General Practice, Fourth National Study 1991-1992. HMSO: London.

Mair FS, Crowley T, Bundred P (1996) Prevalence, aetiology and management of heart failure in general practice. *British Journal of General Practice*; 46: 77-79.

McDonagh TA, Morrison CE, Lawrence A, Ford I, Tunstall-Pedoe H, McMurray JJV (1997) Symptomatic and asymptomatic left ventricular systolic dysfunction in an urban population. *The Lancet* 350: 829-833.

Office for National Statistics (2000) Key Health Statistics from General Practice. The Stationery Office: London.

Davies MK, Hobbs FDR, Davis RC, Kenkre JE, Roulfe AK, Hare R, Wosorru D, Lancashire RJ (2001) Prevalence of left-ventricular systolic dysfunction and heart failure in the Echocardiographic Heart of England Screening study: a population based study. *The Lancet* 358:439-444.

**Table 2.9**    *Prevalence of definite heart failure by sex and age, 1995/99, West Midlands, England*

| <i>Age group</i> | <i>Number with<br/>definite heart failure</i> | <i>Number without<br/>heart failure</i> | <i>% with definite<br/>heart failure</i> |
|------------------|-----------------------------------------------|-----------------------------------------|------------------------------------------|
| <b>MEN</b>       |                                               |                                         |                                          |
| 45-54            | 2                                             | 633                                     | 0                                        |
| 55-64            | 17                                            | 623                                     | 3                                        |
| 65-74            | 20                                            | 480                                     | 4                                        |
| 75-84            | 15                                            | 205                                     | 7                                        |
| 85+              | 5                                             | 23                                      | 22                                       |
| <b>Total</b>     | <b>59</b>                                     | <b>1,964</b>                            | <b>3</b>                                 |
| <b>WOMEN</b>     |                                               |                                         |                                          |
| 45-54            | 0                                             | 681                                     | 0                                        |
| 55-64            | 5                                             | 571                                     | 1                                        |
| 65-74            | 8                                             | 472                                     | 2                                        |
| 75-84            | 15                                            | 229                                     | 7                                        |
| 85+              | 5                                             | 43                                      | 12                                       |
| <b>Total</b>     | <b>33</b>                                     | <b>1,996</b>                            | <b>2</b>                                 |
| <b>ALL</b>       |                                               |                                         |                                          |
| 45-54            | 2                                             | 1,314                                   | 0                                        |
| 55-64            | 22                                            | 1,194                                   | 2                                        |
| 65-74            | 28                                            | 952                                     | 3                                        |
| 75-84            | 30                                            | 434                                     | 7                                        |
| 85+              | 10                                            | 66                                      | 15                                       |
| <b>Total</b>     | <b>92</b>                                     | <b>3,960</b>                            | <b>2</b>                                 |

*Source:* Davies MK, Hobbs FDR, Davis RC, Kenkre JE, Roalfe AK, Hare R, Wosornu D, Lancashire RJ (2001) Prevalence of left-ventricular systolic dysfunction and heart failure in the Echocardiographic Heart of England Screening study: a population based study. *The Lancet* 358:439-444.

**Table 2.10** *Percentage reporting longstanding illness by sex, age and condition, 2005, Great Britain*

|                                          |              | All ages    | 16-44       | 45-64       | 65-74       | 75+         |
|------------------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Heart and circulatory system (VII)       | Men          | 11.4        | 1.5         | 16.7        | 28.8        | 32.9        |
|                                          | Women        | 10.8        | 2.0         | 12.3        | 26.0        | 31.3        |
|                                          | <b>Total</b> | <b>11.1</b> | <b>1.7</b>  | <b>14.5</b> | <b>27.4</b> | <b>32.0</b> |
| Heart attack                             | Men          | 2.1         | 0.1         | 3.0         | 6.2         | 6.5         |
|                                          | Women        | 1.7         | 0.0         | 1.4         | 4.8         | 7.0         |
| Other heart complaints                   | Men          | 3.4         | 0.5         | 4.7         | 8.1         | 11.8        |
|                                          | Women        | 2.7         | 0.7         | 2.5         | 6.0         | 8.9         |
| Hypertension                             | Men          | 4.1         | 0.6         | 6.6         | 10.4        | 8.5         |
|                                          | Women        | 5.0         | 0.9         | 7.0         | 12.6        | 10.8        |
| Other blood vessel/<br>embolic disorders | Men          | 0.9         | 0.2         | 1.1         | 2.2         | 2.6         |
|                                          | Women        | 0.7         | 0.3         | 0.9         | 1.1         | 1.4         |
| Stroke                                   | Men          | 0.8         | 0.1         | 1.0         | 1.8         | 3.5         |
|                                          | Women        | 0.6         | 0.1         | 0.4         | 1.5         | 3.0         |
| Musculoskeletal system (XIII)            | Men          | 12.6        | 6.1         | 16.8        | 23.2        | 24.1        |
|                                          | Women        | 17.0        | 6.7         | 20.7        | 35.3        | 35.1        |
|                                          | <b>Total</b> | <b>14.9</b> | <b>6.4</b>  | <b>18.8</b> | <b>29.6</b> | <b>30.8</b> |
| Arthritis and rheumatism                 | Men          | 5.1         | 1.1         | 7.2         | 12.4        | 13.3        |
|                                          | Women        | 8.9         | 1.8         | 11.0        | 22.8        | 21.4        |
| Back problems                            | Men          | 3.8         | 2.6         | 5.5         | 4.5         | 3.3         |
|                                          | Women        | 3.8         | 3.1         | 5.2         | 3.6         | 2.9         |
| Other bone and joint problems            | Men          | 3.7         | 2.4         | 4.1         | 6.3         | 7.6         |
|                                          | Women        | 4.3         | 1.8         | 4.5         | 8.9         | 10.8        |
| Respiratory system (VIII)                | Men          | 6.3         | 5.2         | 5.6         | 10.4        | 10.6        |
|                                          | Women        | 6.2         | 5.3         | 6.4         | 8.9         | 7.5         |
|                                          | <b>Total</b> | <b>6.3</b>  | <b>5.3</b>  | <b>6.0</b>  | <b>9.6</b>  | <b>8.7</b>  |
| Asthma                                   | Men          | 4.0         | 4.3         | 3.6         | 4.1         | 4.4         |
|                                          | Women        | 4.6         | 4.4         | 4.7         | 6.1         | 3.7         |
| Bronchitis and emphysema                 | Men          | 0.8         | 0.0         | 0.9         | 3.2         | 2.9         |
|                                          | Women        | 0.6         | 0.1         | 0.7         | 1.2         | 1.4         |
| Hay fever                                | Men          | 0.4         | 0.6         | 0.1         | 0.4         | 0.1         |
|                                          | Women        | 0.2         | 0.4         | 0.1         | 0.1         | 0.0         |
| Other respiratory complaints             | Men          | 1.0         | 0.4         | 1.1         | 2.6         | 3.2         |
|                                          | Women        | 0.8         | 0.3         | 0.9         | 1.5         | 2.4         |
| Endocrine and metabolic (III)            | Men          | 4.6         | 1.4         | 6.5         | 10.7        | 9.9         |
|                                          | Women        | 5.7         | 2.1         | 7.8         | 12.3        | 9.4         |
|                                          | <b>Total</b> | <b>5.2</b>  | <b>1.8</b>  | <b>7.1</b>  | <b>11.5</b> | <b>9.6</b>  |
| Digestive system (IX)                    | Men          | 2.4         | 1.2         | 3.6         | 3.6         | 4.3         |
|                                          | Women        | 3.0         | 1.7         | 3.1         | 6.3         | 5.1         |
|                                          | <b>Total</b> | <b>2.7</b>  | <b>1.5</b>  | <b>3.4</b>  | <b>5.0</b>  | <b>4.7</b>  |
| Nervous system (VI)                      | Men          | 2.8         | 1.8         | 3.8         | 3.6         | 3.6         |
|                                          | Women        | 3.0         | 2.5         | 3.7         | 3.6         | 3.1         |
|                                          | <b>Total</b> | <b>2.9</b>  | <b>2.2</b>  | <b>3.7</b>  | <b>3.6</b>  | <b>3.3</b>  |
| Any longstanding illness                 | Men          | 32.0        | 22.0        | 44.0        | 58.0        | 65.0        |
|                                          | Women        | 33.0        | 24.0        | 43.0        | 61.0        | 64.0        |
|                                          | <b>Total</b> | <b>33.0</b> | <b>23.0</b> | <b>43.0</b> | <b>60.0</b> | <b>64.0</b> |
| <i>Weighted base (000s)</i>              | <i>Men</i>   | 22,087      | 11,162      | 7,015       | 2,306       | 1,604       |
|                                          | <i>Women</i> | 23,774      | 11,526      | 7,228       | 2,557       | 2,463       |
| <i>Unweighted base</i>                   | <i>Men</i>   | 11,367      | 5,406       | 3,731       | 1,293       | 937         |
|                                          | <i>Women</i> | 12,383      | 5,818       | 3,915       | 1,461       | 1,189       |

*Notes:* 2005 data includes last quarter of 2004/5 data due to survey change from financial year to calendar year  
ICD chapters in parentheses.  
Data are weighted for non-response.

*Source:* Office for National Statistics (2006) Results from the 2005 General Household Survey. [www.ons.gov.uk/gbs](http://www.ons.gov.uk/gbs)

Figure 2.10 Percentage reporting longstanding illness by sex and condition, 2005, Great Britain

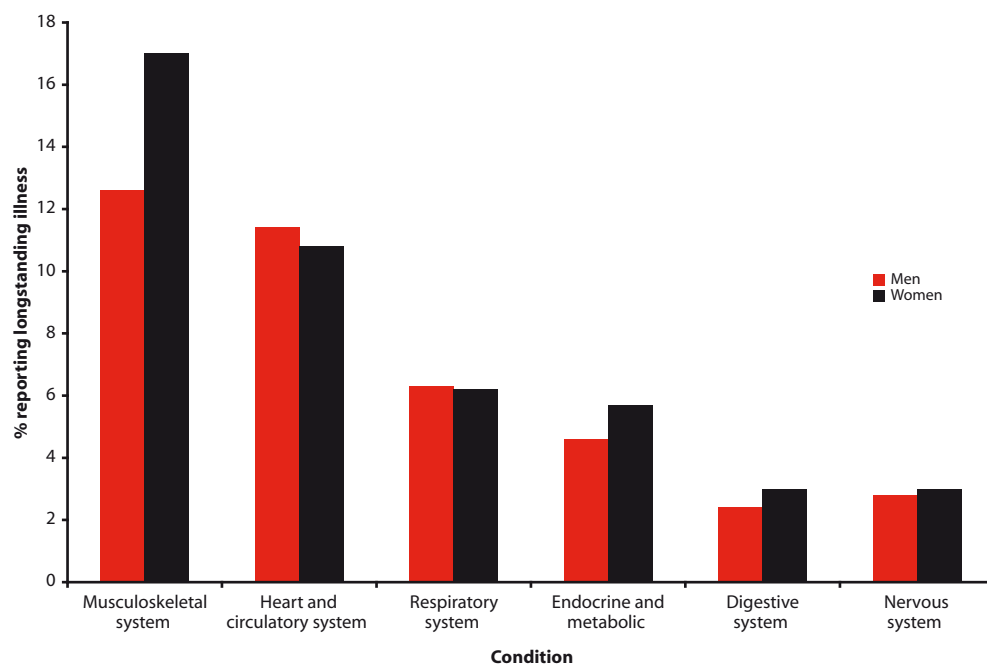


Table 2.11 Prevalence of disease 2004/05, England, Scotland and Wales

|                                                    | Number of Practices <sup>a</sup> | List Size  | Coronary Heart Disease<br>Register count | Coronary Heart Disease<br>Prevalence (%) | Stroke<br>Register count | Stroke<br>Prevalence (%) | Hypertension<br>Register count | Hypertension<br>Prevalence (%) | Diabetes<br>Register count | Diabetes<br>Prevalence (%) |
|----------------------------------------------------|----------------------------------|------------|------------------------------------------|------------------------------------------|--------------------------|--------------------------|--------------------------------|--------------------------------|----------------------------|----------------------------|
| England, Scotland and Wales                        | 10,011                           | 60,738,878 | 2,245,521                                | 3.7                                      | 923,196                  | 1.5                      | 6,913,851                      | 11.4                           | 2,039,982                  | 3.4                        |
| England                                            | 8,486                            | 52,833,584 | 1,893,184                                | 3.6                                      | 782,733                  | 1.5                      | 5,973,062                      | 11.3                           | 1,766,391                  | 3.3                        |
| Norfolk, Suffolk and Cambridgeshire                | 296                              | 2,886,910  | 84,327                                   | 3.7                                      | 36,009                   | 1.6                      | 277,009                        | 12.1                           | 75,633                     | 3.3                        |
| Bedfordshire and Hertfordshire                     | 227                              | 1,740,631  | 50,534                                   | 2.9                                      | 21,844                   | 1.3                      | 186,411                        | 10.7                           | 53,188                     | 3.1                        |
| Essex                                              | 284                              | 1,700,729  | 56,620                                   | 3.3                                      | 21,723                   | 1.3                      | 188,074                        | 11.1                           | 53,107                     | 3.1                        |
| North West London                                  | 432                              | 2,070,039  | 47,774                                   | 2.3                                      | 17,929                   | 0.9                      | 197,240                        | 9.5                            | 73,501                     | 3.6                        |
| North Central London                               | 283                              | 1,399,893  | 30,921                                   | 2.2                                      | 12,322                   | 0.9                      | 123,697                        | 8.8                            | 42,615                     | 3.0                        |
| North East London                                  | 360                              | 1,714,774  | 41,892                                   | 2.4                                      | 15,050                   | 0.9                      | 159,734                        | 9.3                            | 66,488                     | 3.9                        |
| South East London                                  | 286                              | 1,699,834  | 38,849                                   | 2.3                                      | 16,658                   | 1.0                      | 162,177                        | 9.5                            | 52,257                     | 3.1                        |
| South West London                                  | 231                              | 1,437,592  | 31,908                                   | 2.2                                      | 13,349                   | 0.9                      | 135,376                        | 9.4                            | 43,666                     | 3.0                        |
| Northumberland, Tyne & Wear                        | 234                              | 1,439,601  | 72,361                                   | 5.0                                      | 30,109                   | 2.1                      | 189,598                        | 13.2                           | 51,408                     | 3.6                        |
| County Durham and Tees Valley                      | 171                              | 1,193,033  | 59,307                                   | 5.0                                      | 21,823                   | 1.8                      | 145,927                        | 12.2                           | 39,552                     | 3.3                        |
| North and East Yorkshire and Northern Lincolnshire | 252                              | 1,701,802  | 72,141                                   | 4.2                                      | 29,401                   | 1.7                      | 204,047                        | 12.0                           | 54,403                     | 3.2                        |
| West Yorkshire                                     | 348                              | 2,225,624  | 91,815                                   | 4.1                                      | 34,098                   | 1.5                      | 230,345                        | 10.3                           | 74,826                     | 3.4                        |
| Cumbria and Lancashire                             | 355                              | 1,996,096  | 95,329                                   | 4.8                                      | 36,221                   | 1.8                      | 235,599                        | 11.8                           | 70,346                     | 3.5                        |
| Greater Manchester                                 | 543                              | 2,707,508  | 110,577                                  | 4.1                                      | 40,617                   | 1.5                      | 290,927                        | 10.7                           | 94,291                     | 3.5                        |
| Cheshire & Merseyside                              | 423                              | 2,472,566  | 108,108                                  | 4.4                                      | 42,482                   | 1.7                      | 293,084                        | 11.9                           | 85,639                     | 3.5                        |
| Thames Valley                                      | 282                              | 2,286,051  | 61,863                                   | 2.7                                      | 29,734                   | 1.3                      | 229,678                        | 10.0                           | 63,347                     | 2.8                        |
| Hampshire and Isle Of Wight                        | 231                              | 1,858,334  | 63,552                                   | 3.4                                      | 26,969                   | 1.5                      | 212,834                        | 11.5                           | 59,185                     | 3.2                        |
| Kent and Medway                                    | 291                              | 1,684,553  | 54,033                                   | 3.2                                      | 22,975                   | 1.4                      | 192,049                        | 11.4                           | 56,092                     | 3.3                        |
| Surrey and Sussex                                  | 363                              | 2,706,936  | 93,835                                   | 3.5                                      | 41,530                   | 1.5                      | 314,372                        | 11.6                           | 81,279                     | 3.0                        |
| Avon, Gloucestershire and Wiltshire                | 318                              | 2,312,826  | 74,398                                   | 3.2                                      | 36,610                   | 1.6                      | 265,893                        | 11.5                           | 70,602                     | 3.1                        |
| South West Peninsula                               | 246                              | 1,661,169  | 68,325                                   | 4.1                                      | 32,710                   | 2.0                      | 214,461                        | 12.9                           | 56,335                     | 3.4                        |
| Dorset and Somerset                                | 178                              | 1,254,494  | 52,369                                   | 4.2                                      | 24,677                   | 2.0                      | 173,515                        | 13.8                           | 43,193                     | 3.4                        |
| South Yorkshire                                    | 222                              | 1,333,632  | 63,469                                   | 4.8                                      | 25,111                   | 1.9                      | 156,671                        | 11.7                           | 47,463                     | 3.6                        |
| Trent                                              | 411                              | 2,752,584  | 112,986                                  | 4.1                                      | 46,397                   | 1.7                      | 333,085                        | 12.1                           | 98,366                     | 3.6                        |
| Leicestershire, Northamptonshire and Rutland       | 228                              | 1,605,308  | 52,110                                   | 3.2                                      | 21,198                   | 1.3                      | 186,250                        | 11.6                           | 56,910                     | 3.5                        |
| Shropshire and Staffordshire                       | 256                              | 1,520,157  | 60,637                                   | 4.0                                      | 25,902                   | 1.7                      | 186,906                        | 12.3                           | 54,026                     | 3.6                        |
| Birmingham and the Black Country                   | 503                              | 2,464,027  | 88,392                                   | 3.6                                      | 33,686                   | 1.4                      | 293,257                        | 11.9                           | 95,344                     | 3.9                        |
| West Midlands South                                | 230                              | 1,606,881  | 54,752                                   | 3.4                                      | 25,599                   | 1.6                      | 194,846                        | 12.1                           | 53,329                     | 3.3                        |
| Scotland                                           | 1,025                            | 4,840,757  | 221,581                                  | 4.6                                      | 86,432                   | 1.8                      | 558,376                        | 11.5                           | 155,921                    | 3.2                        |
| Argyll & Clyde                                     | 95                               | 407,007    | 19,830                                   | 4.9                                      | 7,756                    | 1.9                      | 48,709                         | 12.0                           | 12,888                     | 3.2                        |
| Ayrshire & Arran                                   | 61                               | 353,369    | 19,163                                   | 5.4                                      | 7,133                    | 2.0                      | 42,615                         | 12.1                           | 11,617                     | 3.3                        |
| Borders                                            | 24                               | 101,008    | 4,964                                    | 4.9                                      | 2,206                    | 2.2                      | 12,769                         | 12.6                           | 3,492                      | 3.5                        |
| Dumfries & Galloway                                | 35                               | 146,100    | 7,913                                    | 5.4                                      | 3,008                    | 2.1                      | 19,171                         | 13.1                           | 5,559                      | 3.8                        |
| Fife                                               | 57                               | 318,660    | 14,924                                   | 4.7                                      | 5,974                    | 1.9                      | 38,569                         | 12.1                           | 11,276                     | 3.5                        |
| Forth Valley                                       | 57                               | 274,843    | 14,008                                   | 5.1                                      | 4,587                    | 1.7                      | 33,184                         | 12.1                           | 9,530                      | 3.5                        |
| Grampian                                           | 84                               | 444,735    | 18,170                                   | 4.1                                      | 7,065                    | 1.6                      | 48,695                         | 10.9                           | 13,383                     | 3.0                        |
| Greater Glasgow                                    | 210                              | 939,079    | 41,300                                   | 4.4                                      | 16,764                   | 1.8                      | 105,568                        | 11.2                           | 29,411                     | 3.1                        |
| Highland                                           | 70                               | 213,318    | 9,242                                    | 4.3                                      | 3,679                    | 1.7                      | 26,275                         | 12.3                           | 6,714                      | 3.1                        |
| Lothian                                            | 100                              | 544,881    | 25,055                                   | 4.6                                      | 8,521                    | 1.6                      | 60,325                         | 11.1                           | 17,789                     | 3.3                        |
| Orkney                                             | 126                              | 668,830    | 26,640                                   | 4.0                                      | 11,221                   | 1.7                      | 70,200                         | 10.5                           | 20,020                     | 3.0                        |
| Shetland                                           | 13                               | 14,322     | 569                                      | 4.0                                      | 174                      | 1.2                      | 1,451                          | 10.1                           | 473                        | 3.3                        |
| Shetland                                           | 10                               | 1,019      | 86                                       | 8.4                                      | 32                       | 3.1                      | 247                            | 24.2                           | 53                         | 5.2                        |
| Tayside                                            | 71                               | 406,532    | 19,299                                   | 4.7                                      | 8,172                    | 2.0                      | 49,418                         | 12.2                           | 13,485                     | 3.3                        |
| Western Isles                                      | 12                               | 7,014      | 418                                      | 6.0                                      | 140                      | 2.0                      | 1,180                          | 16.8                           | 231                        | 3.3                        |
| Wales                                              | 500                              | 3,064,537  | 130,756                                  | 4.3                                      | 54,031                   | 1.8                      | 382,413                        | 12.5                           | 117,670                    | 3.8                        |
| North Wales                                        |                                  | 686,530    | 30,446                                   | 4.4                                      | 11,817                   | 1.7                      | 87,283                         | 12.7                           | 24,651                     | 3.6                        |
| Mid and West Wales                                 |                                  | 1,040,780  | 47,296                                   | 4.5                                      | 20,801                   | 2.0                      | 133,924                        | 12.9                           | 42,272                     | 4.1                        |
| South East Wales                                   |                                  | 1,337,227  | 53,014                                   | 4.0                                      | 21,413                   | 1.6                      | 161,206                        | 12.1                           | 50,747                     | 3.8                        |

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Stroke refers to Stroke and Transient Ischaemic Attack

List size is the number of patients registered with the practice

Prevalence (unadjusted) = (number on disease register / list size) \* 100

Prevalence estimates for Shetland are relatively unstable, due to their being based on a smaller number of patients  
www.isdscotland.org/qof for further information and explanation of Scottish figures

Source: England - QMAS database - 2004/05 data as at end of June 2005

Wales - <http://www.statistics.wales.gov.uk/TableViewer?tableView.aspx?ReportId=2111>

Scotland - QMAS database, as at 25th August 2005. Quality & Outcomes Framework (QOF) for April 2004 - March 2005, Scotland

Figure 2.11 Prevalence of disease 2004/05, England, Scotland and Wales

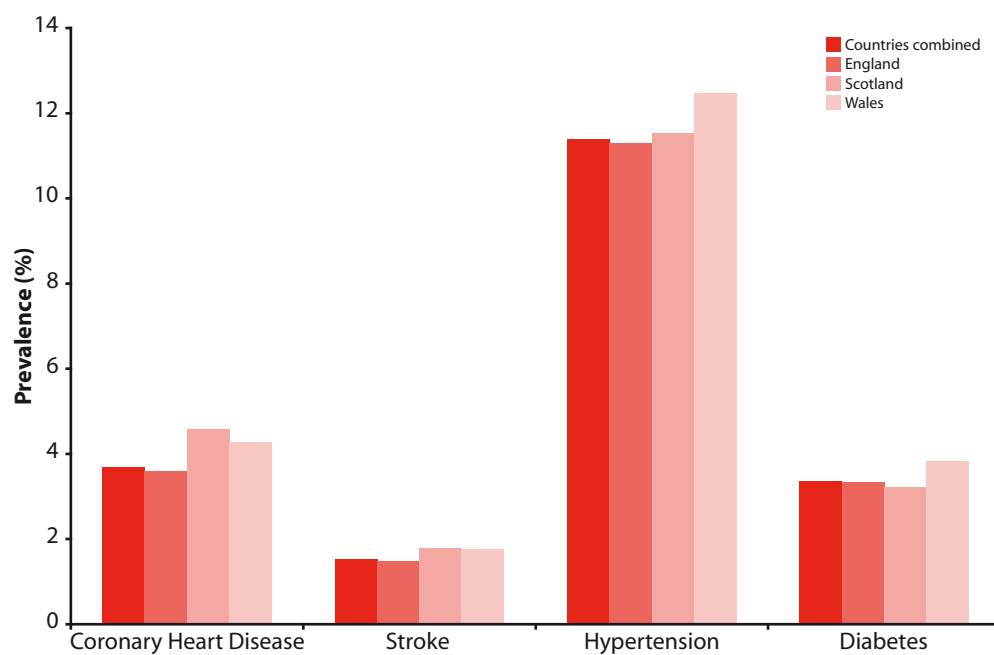


**Table 2.12** *Prevalence of cardiovascular conditions by sex and ethnic group, 2004, England*

|                           | Angina | Heart<br>attack | Heart<br>murmur<br>(MI) | Abnormal<br>heart<br>rhythm | Other<br>heart<br>trouble | Stroke | Weighted<br>base | Unweighted<br>base |
|---------------------------|--------|-----------------|-------------------------|-----------------------------|---------------------------|--------|------------------|--------------------|
|                           | %      | %               | %                       | %                           | %                         | %      |                  |                    |
| <b>MEN</b>                |        |                 |                         |                             |                           |        |                  |                    |
| Black Caribbean           | 3.4    | 3.2             | 1.6                     | 3.8                         | 1.0                       | 3.4    | 480              | 414                |
| Black African             | 0.7    | -               | 0.4                     | 0.4                         | 0.8                       | -      | 377              | 390                |
| Indian                    | 4.9    | 3.9             | 1.8                     | 1.9                         | 2.6                       | 1.1    | 903              | 550                |
| Pakistani                 | 6.9    | 4.1             | 2.6                     | 3.0                         | 2.9                       | 1.8    | 423              | 433                |
| Bangladeshi               | 3.1    | 2.9             | 0.7                     | 1.6                         | -                         | 1.8    | 178              | 411                |
| Chinese                   | 1.6    | 0.3             | 1.6                     | 3.1                         | 0.6                       | 0.7    | 151              | 348                |
| Irish                     | 4.0    | 3.0             | 2.6                     | 4.5                         | 1.7                       | 4.5    | 1,776            | 497                |
| General population (2003) | 4.8    | 3.8             | 3.1                     | 5.1                         | 2.8                       | 2.4    | 7,202            | 6,602              |
| <b>WOMEN</b>              |        |                 |                         |                             |                           |        |                  |                    |
| Black Caribbean           | 1.5    | 1.4             | 2.7                     | 2.8                         | 2.3                       | 1.8    | 676              | 653                |
| Black African             | 0.5    | -               | 1.7                     | 2.5                         | 1.3                       | 0.5    | 476              | 469                |
| Indian                    | 3.2    | 1.0             | 1.5                     | 3.0                         | 1.6                       | 1.2    | 1,067            | 634                |
| Pakistani                 | 2.5    | 1.1             | 1.4                     | 2.9                         | 1.6                       | 1.7    | 499              | 508                |
| Bangladeshi               | 2.0    | 0.6             | 1.0                     | 2.3                         | 1.0                       | 1.8    | 208              | 478                |
| Chinese                   | 1.2    | -               | 0.8                     | 3.1                         | 1.0                       | 0.4    | 163              | 375                |
| Irish                     | 2.5    | 0.8             | 2.1                     | 6.3                         | 1.4                       | 2.7    | 2,369            | 656                |
| General population (2003) | 3.4    | 1.7             | 3.4                     | 5.6                         | 1.8                       | 2.2    | 7,634            | 8,234              |

Notes: Data for the general population are from 2003.

Adults aged 16 and over.

Age-standardised percentages (standardised risk ratios x prevalence in general population).

Source: Department of Health (2005) Health Survey for England. The Health of Minority Ethnic Groups 2004 The Stationery Office: London.

**Table 2.13** *Prevalence of CHD, stroke and CHD or stroke by sex and age, 1994, 1998 and 2003, England*

| Condition     | Year | Total | 16-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+  |
|---------------|------|-------|-------|-------|-------|-------|-------|-------|------|
| <b>MEN</b>    |      |       |       |       |       |       |       |       |      |
| CHD           | 1994 | 6.0   | -     | 0.3   | 0.5   | 3.0   | 10.3  | 21.0  | 22.7 |
|               | 1998 | 7.1   | 0.1   | 0.4   | 0.9   | 4.3   | 13.6  | 20.2  | 23.4 |
|               | 2003 | 7.4   | -     | -     | 0.9   | 3.5   | 11.1  | 21.5  | 26.4 |
| Stroke        | 1994 | 1.8   | -     | 0.1   | 0.1   | 0.3   | 2.9   | 6.5   | 8.6  |
|               | 1998 | 2.3   | 0.1   | -     | 0.4   | 1.2   | 3.3   | 6.2   | 10.3 |
|               | 2003 | 2.7   | 0.1   | 0.4   | 0.3   | 1.2   | 2.2   | 7.6   | 13.3 |
| CHD or stroke | 1994 | 7.1   | -     | 0.3   | 0.6   | 3.2   | 12.3  | 25.0  | 27.7 |
|               | 1998 | 8.5   | 0.2   | 0.4   | 1.3   | 5.1   | 15.4  | 24.2  | 29.9 |
|               | 2003 | 9.1   | 0.1   | 0.4   | 1.2   | 4.2   | 12.6  | 25.7  | 34.0 |
| <b>WOMEN</b>  |      |       |       |       |       |       |       |       |      |
| CHD           | 1994 | 4.1   | 0.2   | 0.1   | 0.3   | 2.3   | 5.9   | 10.5  | 15.9 |
|               | 1998 | 4.6   | -     | 0.3   | 0.6   | 1.8   | 6.3   | 12.5  | 18.4 |
|               | 2003 | 4.5   | 0.2   | -     | 0.4   | 2.0   | 5.9   | 9.7   | 18.4 |
| Stroke        | 1994 | 1.6   | -     | 0.2   | 0.3   | 0.6   | 1.8   | 3.5   | 7.5  |
|               | 1998 | 2.1   | 0.4   | 0.4   | 0.6   | 0.7   | 2.2   | 5.0   | 8.8  |
|               | 2003 | 2.3   | 0.2   | 0.3   | 0.6   | 0.9   | 2.5   | 5.4   | 8.9  |
| CHD or stroke | 1994 | 5.2   | 0.2   | 0.3   | 0.5   | 2.8   | 7.5   | 13.4  | 20.2 |
|               | 1998 | 6.2   | 0.4   | 0.7   | 1.2   | 2.6   | 8.1   | 15.6  | 24.7 |
|               | 2003 | 6.3   | 0.4   | 0.3   | 0.9   | 2.9   | 7.8   | 13.9  | 25.0 |
| <b>Bases</b>  |      |       |       |       |       |       |       |       |      |
| Men           | 1994 | 7,193 | 875   | 1,338 | 1,305 | 1,289 | 987   | 837   | 562  |
|               | 1998 | 7,177 | 968   | 1,434 | 1,329 | 1,127 | 1,001 | 877   | 441  |
|               | 2003 | 6,602 | 746   | 1,025 | 1,263 | 1,101 | 1,103 | 807   | 557  |
| Women         | 1994 | 8,715 | 1,006 | 1,630 | 1,573 | 1,484 | 1,148 | 967   | 907  |
|               | 1998 | 8,627 | 1,080 | 1,723 | 1,520 | 1,300 | 1,059 | 1,120 | 825  |
|               | 2003 | 8,234 | 890   | 1,285 | 1,618 | 1,279 | 1,307 | 952   | 903  |

Notes: Adults aged 16 and over.

Unweighted data for all years.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London

**Figure 2.13** *Changes in prevalence rates in CHD, stroke and CHD or stroke by sex between 1994 and 2003, England*

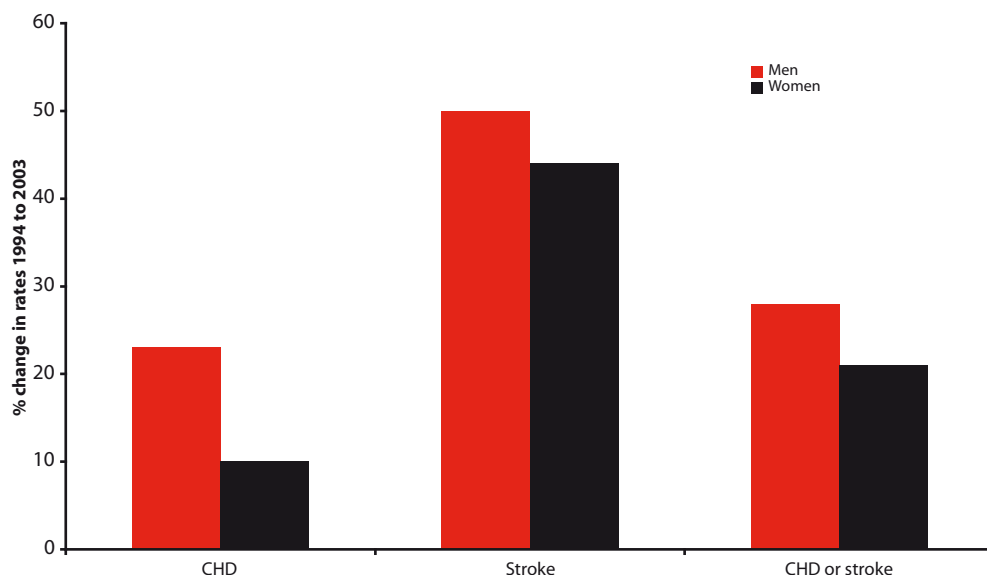


**Table 2.14** *Rates per 1,000 population reporting longstanding diseases of the circulatory system by sex and age, 1988 to 2005, Great Britain*

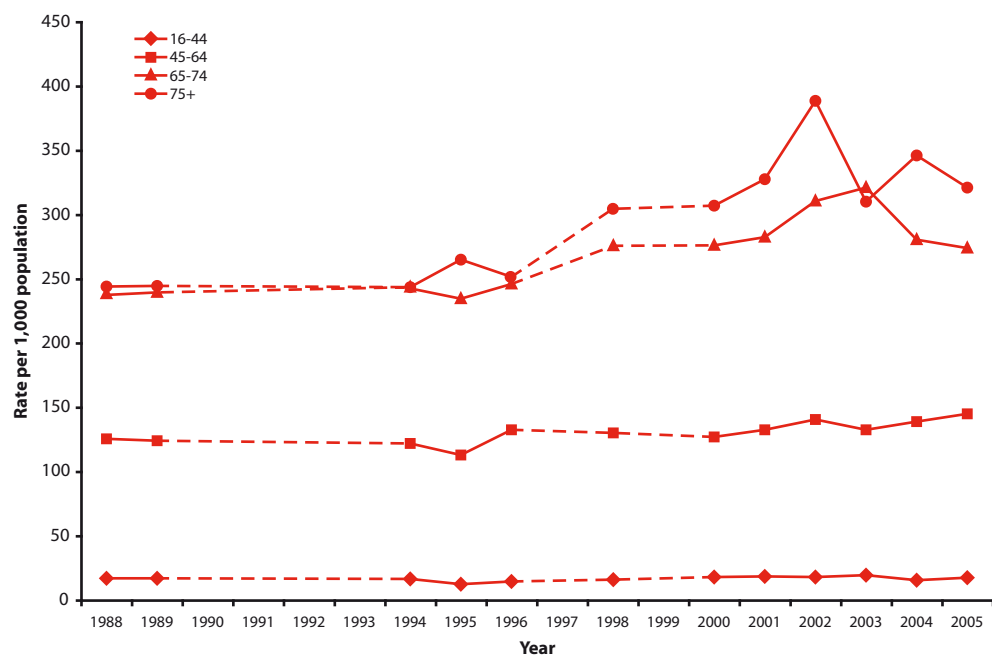
|                                        |       |      | All ages | 16-44 | 45-64 | 65-74 | 75+ |
|----------------------------------------|-------|------|----------|-------|-------|-------|-----|
| Heart attack                           | MEN   | 1988 | 22       | 2     | 47    | 75    | 82  |
|                                        |       | 1989 | 23       | 2     | 46    | 100   | 79  |
|                                        |       | 1994 | 23       | 1     | 31    | 66    | 81  |
|                                        |       | 1995 | 25       | 1     | 34    | 92    | 54  |
|                                        |       | 1996 | 23       | 1     | 30    | 66    | 75  |
|                                        |       | 1998 | 32       | 3     | 40    | 89    | 111 |
|                                        |       | 2000 | 25       | 1     | 31    | 86    | 94  |
|                                        |       | 2001 | 25       | 1     | 32    | 75    | 113 |
|                                        |       | 2002 | 24       | 1     | 26    | 70    | 118 |
|                                        |       | 2003 | 23       | 2     | 22    | 87    | 80  |
|                                        |       | 2004 | 23       | 0     | 26    | 84    | 83  |
|                                        |       | 2005 | 21       | 1     | 30    | 62    | 65  |
|                                        | WOMEN | 1988 | 17       | 1     | 20    | 67    | 66  |
|                                        |       | 1989 | 17       | 1     | 24    | 64    | 65  |
|                                        |       | 1994 | 21       | 1     | 20    | 59    | 73  |
|                                        |       | 1995 | 18       | 1     | 17    | 45    | 73  |
|                                        |       | 1996 | 24       | 1     | 28    | 65    | 83  |
|                                        |       | 1998 | 22       | 0     | 18    | 65    | 86  |
|                                        |       | 2000 | 20       | 1     | 18    | 54    | 78  |
|                                        |       | 2001 | 15       | 0     | 16    | 39    | 53  |
|                                        |       | 2002 | 20       | 0     | 15    | 58    | 90  |
|                                        |       | 2003 | 17       | 1     | 13    | 63    | 52  |
|                                        |       | 2004 | 18       | 0     | 18    | 51    | 67  |
|                                        |       | 2005 | 17       | 0     | 14    | 48    | 70  |
| Stroke                                 | MEN   | 1988 | 8        | 0     | 10    | 39    | 38  |
|                                        |       | 1989 | 7        | 0     | 10    | 30    | 48  |
|                                        |       | 1994 | 9        | 1     | 10    | 30    | 37  |
|                                        |       | 1995 | 6        | 0     | 6     | 20    | 31  |
|                                        |       | 1996 | 10       | 1     | 9     | 27    | 43  |
|                                        |       | 1998 | 8        | 1     | 8     | 26    | 30  |
|                                        |       | 2000 | 10       | 1     | 11    | 36    | 36  |
|                                        |       | 2001 | 8        | 2     | 11    | 18    | 23  |
|                                        |       | 2002 | 9        | 1     | 8     | 26    | 39  |
|                                        |       | 2003 | 8        | 1     | 9     | 20    | 37  |
|                                        |       | 2004 | 8        | 1     | 8     | 17    | 54  |
|                                        |       | 2005 | 8        | 1     | 10    | 18    | 35  |
|                                        | WOMEN | 1988 | 6        | 1     | 4     | 24    | 30  |
|                                        |       | 1989 | 6        | 1     | 4     | 15    | 40  |
|                                        |       | 1994 | 8        | 2     | 5     | 18    | 36  |
|                                        |       | 1995 | 7        | 0     | 5     | 19    | 35  |
|                                        |       | 1996 | 6        | 0     | 5     | 17    | 22  |
|                                        |       | 1998 | 8        | 1     | 5     | 15    | 41  |
|                                        |       | 2000 | 8        | 1     | 7     | 17    | 33  |
|                                        |       | 2001 | 9        | 0     | 7     | 20    | 39  |
|                                        |       | 2002 | 9        | 1     | 8     | 22    | 37  |
|                                        |       | 2003 | 6        | 0     | 4     | 19    | 26  |
|                                        |       | 2004 | 6        | 0     | 5     | 12    | 28  |
|                                        |       | 2005 | 6        | 1     | 4     | 15    | 30  |
| All diseases of the circulatory system | MEN   | 1988 | 73       | 17    | 143   | 247   | 223 |
|                                        |       | 1989 | 69       | 12    | 133   | 259   | 221 |
|                                        |       | 1994 | 93       | 16    | 138   | 246   | 236 |
|                                        |       | 1995 | 93       | 12    | 129   | 272   | 238 |
|                                        |       | 1996 | 99       | 14    | 141   | 268   | 249 |
|                                        |       | 1998 | 113      | 19    | 155   | 281   | 310 |
|                                        |       | 2000 | 107      | 18    | 137   | 290   | 308 |
|                                        |       | 2001 | 110      | 22    | 150   | 313   | 333 |
|                                        |       | 2002 | 119      | 17    | 152   | 330   | 398 |
|                                        |       | 2003 | 113      | 17    | 147   | 345   | 317 |
|                                        |       | 2004 | 111      | 14    | 146   | 295   | 373 |
|                                        |       | 2005 | 114      | 15    | 167   | 288   | 329 |
|                                        | WOMEN | 1988 | 77       | 17    | 108   | 228   | 265 |
|                                        |       | 1989 | 77       | 22    | 115   | 220   | 268 |
|                                        |       | 1994 | 92       | 17    | 106   | 239   | 251 |
|                                        |       | 1995 | 87       | 13    | 97    | 197   | 292 |
|                                        |       | 1996 | 95       | 15    | 124   | 224   | 254 |
|                                        |       | 1998 | 99       | 13    | 106   | 268   | 299 |
|                                        |       | 2000 | 104      | 18    | 117   | 262   | 306 |
|                                        |       | 2001 | 102      | 15    | 115   | 252   | 322 |
|                                        |       | 2002 | 119      | 19    | 129   | 291   | 379 |
|                                        |       | 2003 | 109      | 22    | 118   | 297   | 303 |
|                                        |       | 2004 | 110      | 17    | 132   | 266   | 319 |
|                                        |       | 2005 | 108      | 20    | 123   | 260   | 313 |

Notes: From 2000 data are weighted for non-response. See source for details.

Source: Office for National Statistics (2006) 2005 General Household Survey [www.ons.gov.uk/gbs](http://www.ons.gov.uk/gbs).

Office for National Statistics (2004) *Living in Britain. Results from the 2002 General Household Survey*. The Stationery Office: London and previous editions.

Figure 2.14 Rate of reporting longstanding cardiovascular disease by age, 1988 to 2005, Great Britain



# 3. Treatment

## *National Service Framework for Coronary Heart Disease in England*

The National Service Framework for Coronary Heart Disease<sup>1</sup> was announced in March 2000, and sets national standards for the prevention, diagnosis and treatment of CHD in England (Table 3.1).

### *Prescriptions*

There has been a significant increase in the number of prescriptions for the treatment and prevention of CVD in the last twenty years. In 2005, around 220 million prescriptions were issued for diseases of the circulatory system in England, over four times as many as issued in 1985, and an increase of nearly 10% on the number of prescriptions in 2004 (Table 3.2).

In the last ten years, the number of prescriptions for antiplatelet drugs has increased around four fold (and more than thirty fold in the last twenty years). The number of prescriptions of lipid lowering drugs has increased around sixteen fold (nearly one hundred and fifty fold in the last 20 years) (Table 3.2 and Figure 3.2).

In 2005, the cost of prescriptions for lipid lowering drugs, including statins, was £625 million, a decrease of £144 million since 2004, despite the increased number of prescriptions. Lipid lowering drugs continue to cost the NHS more than any other class of drug<sup>2</sup>.

The cost of prescriptions for antihypertensive therapy decreased by £126 million to £484 million between 2004 and 2005, despite an increase in the number of prescriptions by over 10%<sup>2</sup>. The use of both statins and antihypertensive drugs for the secondary prevention of coronary heart disease is recommended in the National Service Framework for Coronary Heart Disease, so it is likely there will continue to be increases in their use.

### *Operations*

The number of operations carried out to treat CHD has increased. The amount of coronary artery bypass surgery (CABG) has increased six fold since 1980 and by around a third between 1993 and 2003. Just under 29,000 operations for CABG were carried out in the UK in 2003 (Table 3.3). The number of percutaneous coronary interventions (PCI) is increasing at an even faster rate and over 70,000 are now carried out annually in the UK. This represents a four fold increase over the last decade and a 12% increase between 2004 and 2005 (Table 3.4 and Figure 3.4).

Rates of CABG and PCI vary substantially across the UK. Maps of coronary revascularisation rates for men and women by local authority in England in 2002 show a greater than six fold difference between the lowest and highest rates. These rates varied in men from 57 per 100,000 population in the Isle of Wight to 342 per 100,000 in Watford and in women from 21 per 100,000 in the Isle of Wight to 137 per 100,000 in Teesdale<sup>3</sup>. These maps and associated tables are available at [www.heartstats.org/chd\\_atlas](http://www.heartstats.org/chd_atlas).

In addition to coronary revascularisation operations, there were 128 heart transplants carried out in 2002/03 and 19 heart and lung transplants<sup>4</sup>.

## *Inpatient hospital cases*

Overall, there were around 428,000 inpatient cases treated for CHD in National Health Service hospitals in 2005/06 (Table 3.5). These represent 5% of all inpatient cases in men and 2% in women (Figures 3.5a and 3.5b).

The number of inpatient cases treated for CHD has increased by over 13% in the last five years<sup>5</sup>.

## *Staffing levels*

In 2002, a report on the provision of services for patients with heart disease in the UK claimed a shortage of all types of health care professionals involved in cardiovascular care<sup>6</sup>. However, since then the numbers of consultant cardiologists and cardiothoracic surgeons have increased considerably. The number of cardiologists working in the NHS increased by just under 50% between September 1999 and March 2004, from 467 to 685. Over the same period the number of consultant cardiothoracic surgeons increased by 19%, from 182 to 217<sup>7</sup>. It is estimated that between 1200 and 1500 consultant cardiologists will be needed by 2010<sup>6</sup>.

## *International differences*

Rates of coronary revascularisation and other procedures for CHD vary widely across Europe. Data from the European Society of Cardiology from around 2000 show that rates of procedures for CHD were lower in the UK than in many other European countries. For example, in Finland the rate of CABG was over twice as high and in Germany the rate of PCI around four times as high as those found in the UK (Table 3.6). When the rates of coronary procedures in 2000 were adjusted for incidence of CHD, the UK had a lower rate of PCI and a slightly higher rate of CABG than might be expected (Figures 3.6a and 3.6b).

While rates of PCI have increased significantly across Europe since the 1990s, in the UK this increase has not been as rapid as in many other countries, for example, Italy, Sweden and Germany (Table 3.7 and Figure 3.7).

## *National Service Framework priorities*

The National Service Framework (NSF) outlined a series of priorities, milestones and goals to be achieved to improve service quality, tackle variations in care and reduce the number of deaths over a ten-year period.

The NSF for CHD set three immediate priorities to be achieved by April 2001. These were the introduction of specialist smoking cessation clinics by health authorities to help 150,000 people quit smoking; the setting up of 50 rapid-access chest pain clinics to assess people with new symptoms for angina within two weeks of referral; and the reduction of call-to-needle times for thrombolysis for heart attacks, by improving ambulance response times and increasing the proportion of accident and emergency (A&E) departments able to provide thrombolysis.

Between April 2000 and March 2001, just over 132,000 people in England had set a quit date through smoking cessation services. Around 64,000 (49%) of those setting a quit date reported

that they were not smoking four weeks after their quit date. The numbers attending smoking cessation clinics have risen to over 600,000 in 2005/06, with around 330,000 (55%) reporting success at four weeks (Table 3.8)<sup>8,9</sup>. There has been £138 million invested in smoking cessation between 2003/04 and 2005/06, with a target of 800,000 successful quitters at the four-week follow up during this three-year period<sup>8</sup>. This target was achieved, with over 830,000 successful quitters during this period. Statistics from 2004/05 and 2005/06 show that around half of Northern Irish smokers who set a quit date have successfully quit at the four-week follow up (Table 3.8).

By June 2001, 150 rapid-access chest pain clinics were open across England<sup>10</sup>.

In 2000/01, of the 32 ambulance services in England, just three achieved the goal set in the NSF, that is 75% of category A (immediately life threatening) calls responded to within 8 minutes<sup>11</sup>. By 2005/06, 25 out of 31 ambulance services (81%) had achieved this goal (Table 3.9).

The NSF further outlined a number of priorities to be achieved by April 2002. These were to increase to 75% the proportion of heart attack patients receiving thrombolysis within 30 minutes of arriving at hospital; to improve the use of effective medicines after heart attack so that 80 to 90% of people discharged from hospital following a heart attack are prescribed aspirin, beta-blockers and statins; and to increase the total number of revascularisation procedures by 3,000.

Data from the National Audit of Myocardial Infarction Project (MINAP)<sup>12</sup> show that by April 2002, 59% of eligible heart attack patients were receiving thrombolysis within 30 minutes of arriving in hospital. By the end of 2003 this had risen to 81% of eligible heart attack patients, with quarter by quarter improvements<sup>7</sup>. In 2005/06, the level in England was approximately 83% (Table 3.10).

MINAP data further show that in 2005/06, at least 97% of people discharged from hospital following a heart attack in England and Wales were prescribed aspirin, 91% beta blockers and 94% statins (Table 3.10)<sup>13,14</sup>.

The NSF also outlined the importance of cardiac rehabilitation. It set an overall goal that in every hospital over 85% of people discharged with a primary diagnosis of heart attack or after coronary revascularisation should be offered cardiac rehabilitation. Data from the British Association of Cardiac Rehabilitation show that the current rate of provision is well below the goal set by the NSF. In 2003/04, only around one third of people discharged from hospital in England after a heart attack or coronary revascularisation received cardiac rehabilitation<sup>15</sup>. The rate of provision varied substantially across the country with the lowest levels found in London (Table 3.11).

In 2005 the Healthcare Commission published a national review of the NSF<sup>16</sup>. This concluded that at the half way point in its implementation, the NSF for Coronary Heart Disease has led to significant improvements. These include faster treatment of heart attack patients, higher numbers of revascularisation operations performed with shorter waiting times, and the setting up of rapid access chest pain clinics across the country to improve the speed with which people with suspected angina can be assessed. However, the review acknowledges that there are a number of standards where progress has been slower. Three particular areas are highlighted as needing further attention: preventing heart disease, the treatment and care of patients with heart failure and cardiac rehabilitation. The Healthcare Commission will be developing indicators in these areas to measure future progress.

1. Department of Health (2000) *National Service Framework for Coronary Heart Disease*. The Stationery Office: London.
2. Office for National Statistics (2006). *Prescriptions dispensed in the community. Statistics for 1995 to 2005: England*. The Information Centre: London.
3. Otreba P, Rayner M, Hill A, Goldacre M (2003) *An atlas of coronary heart disease mortality, hospital admissions and coronary revascularisations in South East England*. SEPHO: Oxford. This publication contains maps of CHD mortality, hospital admissions and coronary revascularisations by local authority across England as well as the South East Region. See [www.heartstats.org/chd\\_atlas](http://www.heartstats.org/chd_atlas)
4. Society of Cardiothoracic Surgeons of Great Britain and Ireland (2004) *Fifth National Adult Cardiac Surgical Database Report: Improving outcomes for patients*. Dendrite Clinical Systems Ltd: Henley.
5. In 2000/2001, the number of inpatient cases for CHD was 378,532 in National Health Service hospitals in England. See Table 3.5 in Petersen S, Peto V and Rayner M (2003) *Coronary heart disease statistics*. British Heart Foundation: London.
6. *Fifth report on the provision of services for patients with heart disease*. Heart 2002; 88(Suppl III):iii1-iii59.
7. Department of Health (2004) *Winning the War on Heart Disease*. The Stationery Office: London. See [www.dh.gov.uk/assetRoot/04/07/71/58/04077158.pdf](http://www.dh.gov.uk/assetRoot/04/07/71/58/04077158.pdf)
8. Department of Health Statistical Bulletin (2005) *Statistics on smoking cessation services in England, April 2004 to March 2005, and earlier editions*. See [www.dh.gov.uk/assetRoot/04/10/43/55/04104355.pdf](http://www.dh.gov.uk/assetRoot/04/10/43/55/04104355.pdf)
9. Four week self-reported quit rates only give an indication of the true short-term quit rates achieved by smoking cessation services. In 2003/04, carbon monoxide (CO) validation was offered to clients of smoking cessation services as a tool to aid smoking cessation. Around 70% of those who reported having successfully quit smoking at the 4-week follow-up had the level of carbon monoxide in their bloodstream measured. In 88% of cases this test confirmed they were not smoking at 4-weeks. Longer term success rates are currently unknown.
10. Department of Health Heart Team, personal communication.
11. Department of Health Statistical Bulletin (2005) *Ambulance services, England: 2004-2005*. See [www.dh.gov.uk](http://www.dh.gov.uk)
12. Currently 230 hospitals contribute to the MINAP database, all but one of the hospitals treating heart attacks in England and Wales. Data are collected on patients with all types of acute coronary disease.
13. These percentages have risen since 2002. The equivalent figures for January to November 2002 were 83% prescribed aspirin, 62% beta blockers and 83% statins. See Table 3.9 in Petersen S, Peto V and Rayner M (2003) *Coronary heart disease statistics*. British Heart Foundation: London.
14. For more results from the MINAP project, including hospital level data, see Royal College of Physicians (2004) *How Hospitals Manage Heart Attacks. Third Public Report of the Myocardial Infarction National Audit Project*. Royal College of Physicians: London. Also available at [www.rcplondon.ac.uk/pubs/books/minap04/index.htm](http://www.rcplondon.ac.uk/pubs/books/minap04/index.htm).
15. The British Association of Cardiac Rehabilitation Database annually surveys all centres providing cardiac rehabilitation in the UK. In 2003/04, data on cardiac rehabilitation provision were reported by 139 of the 255 English centres. The figures in Table 3.10 have been adjusted upwards to take into account non-responders to the survey. Before adjustment, the numbers receiving cardiac rehabilitation in England in 2003/04 were 36,458, representing almost 20% of those discharged from hospital with a diagnosis of heart attack or after coronary revascularisation.
16. Commission for Healthcare Audit and Inspection (2005) *National service framework report. Getting to the heart of it. Coronary heart disease in England: a review of progress towards national standards. Summary report*. Healthcare Commission: London.

*Table 3.1 National Service Framework (NSF) for Coronary Heart Disease: Standards and Quality Requirements table, England*

| NSF Area                                       | NSF Standard/Quality Requirement <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reducing heart disease in the population       | <ol style="list-style-type: none"> <li>1. <i>The NHS and partner agencies should develop, implement and monitor policies that reduce the prevalence of coronary risk factors in the population, and reduce inequalities in risks of developing heart disease.</i></li> <li>2. <i>The NHS and partner agencies should contribute to a reduction in the prevalence of smoking in the local population.</i></li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Preventing CHD in high risk patients           | <ol style="list-style-type: none"> <li>3. <i>General practitioners and primary care teams should identify all people with established cardiovascular disease and offer them comprehensive advice and appropriate treatment to reduce their risks.</i></li> <li>4. <i>General practitioners and primary care teams should identify all people at significant risk of cardiovascular disease but who have not developed symptoms and offer them appropriate advice and treatment to reduce their risks.</i></li> </ol>                                                                                                                                                                                                                                                                                                                                |
| Heart attack and other acute coronary symptoms | <ol style="list-style-type: none"> <li>5. <i>People with symptoms of a possible heart attack should receive help from an individual equipped with and appropriately trained in the use of a defibrillator within 8 minutes of calling for help, to maximise the benefits of resuscitation should it be necessary.</i></li> <li>6. <i>People thought to be suffering from a heart attack should be assessed professionally and, if indicated, receive aspirin. Thrombolysis should be given within 60 minutes of calling for professional help.</i></li> <li>7. <i>NHS Trusts should put in place protocols/systems of care so that people admitted to hospital with a proven heart attack are appropriately assessed and offered treatments of proven clinical and cost effectiveness to reduce their risks of disability and death.</i></li> </ol> |
| Stable angina                                  | <ol style="list-style-type: none"> <li>8. <i>People with symptoms of angina or suspected angina should receive appropriate investigation and treatment to relieve their pain and reduce their risk of coronary events.</i></li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Revascularisation                              | <ol style="list-style-type: none"> <li>9. <i>People with angina that is increasing in frequency or severity should be referred to a cardiologist urgently or, for those at greatest risk, as an emergency.</i></li> <li>10. <i>NHS Trusts should put in place hospital-wide systems of care so that patients with suspected or confirmed coronary heart disease receive timely and appropriate investigation and treatment to relieve their symptoms and reduce their risk of subsequent coronary events.</i></li> </ol>                                                                                                                                                                                                                                                                                                                            |
| Heart failure                                  | <ol style="list-style-type: none"> <li>11. <i>Doctors should arrange for people with suspected heart failure to be offered appropriate investigations (e.g. electrocardiography, echocardiography) that will confirm or refute the diagnosis. For those in whom heart failure is confirmed, its cause should be identified – treatments most likely to both relieve their symptoms and reduce their risk of death should be offered.</i></li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                 |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cardiac rehabilitation               | 12. <i>NHS Trusts should</i> put in place agreed protocols/systems of care so that, prior to leaving hospital, people admitted to hospital suffering from coronary heart disease have been invited to participate in a multidisciplinary programme of secondary prevention and cardiac rehabilitation receive appropriate investigation and treatment to relieve their pain and reduce their risk of coronary events. The aim of the programme will be to reduce risk of subsequent cardiac problems and to promote their return to a full and normal life.                                                 |
| Arrhythmias and sudden cardiac death | 13. <i>People with arrhythmias should</i> receive timely and high quality support and information, based on an assessment of their needs. People presenting with arrhythmias, in both emergency and elective settings, should receive timely assessment by an appropriate clinician to ensure accurate diagnosis and effective treatment and rehabilitation. When sudden cardiac death occurs, NHS services should have systems in place to identify family members at risk and provide personally tailored, sensitive and expert support, diagnosis, treatment, information and advice to close relatives. |

1. An extra chapter on arrhythmias and sudden cardiac death was added to the National Service Framework in 2005. This outlined three quality requirements for improving care in this area. Chapters in the original NSF document had outlined standards rather than quality requirements. This table combines the two.

Source: Department of Health (2000) *Coronary Heart Disease National Service Framework*. The Stationery Office: London.  
Department of Health (2005) *Coronary Heart Disease National Service Framework. Chapter Eight. Arrhythmias and Sudden Cardiac Death*. The Stationery Office: London.

**Table 3.2** *Prescriptions used in the prevention and treatment of all diseases of the circulatory system, 1981 to 2005, England*

| <i>Prescriptions (thousands)</i>                               | 1981          | 1986          | 1991          | 1992          | 1993          | 1994          | 1995          | 1996          | 1997          | 1998           | 1999           | 2000           | 2001           | 2002           | 2003           | 2004           | 2005           |
|----------------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Digoxin and other positive inotropic drugs (2.1)               | 4,243         | 3,722         | 3,822         | 3,816         | 3,825         | 3,848         | 3,860         | 3,871         | 3,843         | 3,907          | 3,954          | 3,983          | 4,031          | 4,029          | 4,043          | 4,088          | 4,103          |
| Diuretics (2.2)                                                | 20,678        | 21,996        | 22,195        | 22,039        | 22,115        | 22,521        | 22,745        | 23,106        | 23,602        | 24,313         | 25,672         | 27,738         | 30,203         | 32,185         | 34,432         | 36,546         | 37,619         |
| Anti-arrhythmic drugs (2.3)                                    | 232           | 334           | 532           | 568           | 614           | 673           | 750           | 840           | 941           | 1,047          | 1,138          | 1,214          | 1,292          | 1,338          | 1,343          | 1,325          | 1,292          |
| Beta-adrenoreceptor blocking drugs (2.4)                       | 9,827         | 12,525        | 14,282        | 14,145        | 14,018        | 13,997        | 14,050        | 14,375        | 14,693        | 15,319         | 16,584         | 18,321         | 20,439         | 22,439         | 24,336         | 26,361         | 27,460         |
| Antihypertensive therapy (2.5)                                 | 4,912         | 4,424         | 6,431         | 7,281         | 8,412         | 9,668         | 10,631        | 12,125        | 13,562        | 15,450         | 17,942         | 21,075         | 25,047         | 29,591         | 33,788         | 38,580         | 42,865         |
| Nitrates, calcium blockers and potassium activators (2.6)      | 5,156         | 10,314        | 16,718        | 17,857        | 19,039        | 20,130        | 21,083        | 21,971        | 22,645        | 23,380         | 24,316         | 25,394         | 26,814         | 27,994         | 29,156         | 30,715         | 32,309         |
| Sympathomimetics (2.7)                                         | 15            | 6             | 19            | 15            | 12            | 10            | 8             | 7             | 6             | 5              | 4              | 3              | 2              | 2              | 3              | 4              | 4              |
| Anticoagulants and protamine (2.8)                             | 629           | 900           | 1,356         | 1,489         | 1,680         | 1,976         | 2,263         | 2,609         | 2,963         | 3,340          | 3,731          | 4,152          | 4,609          | 4,975          | 5,389          | 5,871          | 6,294          |
| Antiplatelet drugs (2.9)                                       | 281           | 1,058         | 3,619         | 4,432         | 5,264         | 6,451         | 7,615         | 9,002         | 10,376        | 12,173         | 14,642         | 16,552         | 18,891         | 21,601         | 24,428         | 27,356         | 30,218         |
| Anti-fibrinolytic drugs and haemostatics (2.11)                |               |               |               |               |               |               |               |               |               | 215            | 242            | 267            | 282            | 289            | 300            | 310            | 311            |
| Lipid regulating drugs (2.12)                                  | 295           | 247           | 1,066         | 1,308         | 1,515         | 1,742         | 2,216         | 3,138         | 4,398         | 5,982          | 7,926          | 10,331         | 13,523         | 17,604         | 22,655         | 29,444         | 35,568         |
| Local sclerosants (2.13)                                       |               |               |               |               |               |               |               |               |               | 1              | 1              | 1              | 1              | 0              | 0              | 0              | 0              |
| <b>All prescriptions for disease of the circulatory system</b> | <b>46,267</b> | <b>55,526</b> | <b>70,041</b> | <b>72,951</b> | <b>76,495</b> | <b>81,016</b> | <b>85,220</b> | <b>91,044</b> | <b>97,029</b> | <b>105,131</b> | <b>116,152</b> | <b>129,030</b> | <b>145,134</b> | <b>162,046</b> | <b>179,872</b> | <b>200,598</b> | <b>218,043</b> |

Notes: BNF codes in parentheses.

The data up to 1990 are not consistent with data from 1991 onwards. Figures up to 1990 are based on fees and on a sample of 1 in 200 prescriptions dispensed by community pharmacists and appliance contractors only. Figures from 1991 are based on items and cover all prescriptions dispensed by community pharmacists, appliance contractors, dispensing doctors and prescriptions submitted by prescribing doctors for items personally administered.

Source: Office for National Statistics (2006). Prescriptions dispensed in the community. Statistics for 1995 to 2005: England. London: The Information Centre, and previous editions.

**Figure 3.2** Prescriptions used in the prevention and treatment of diseases of the circulatory system, selected BNF paragraphs, 1981 to 2005, England

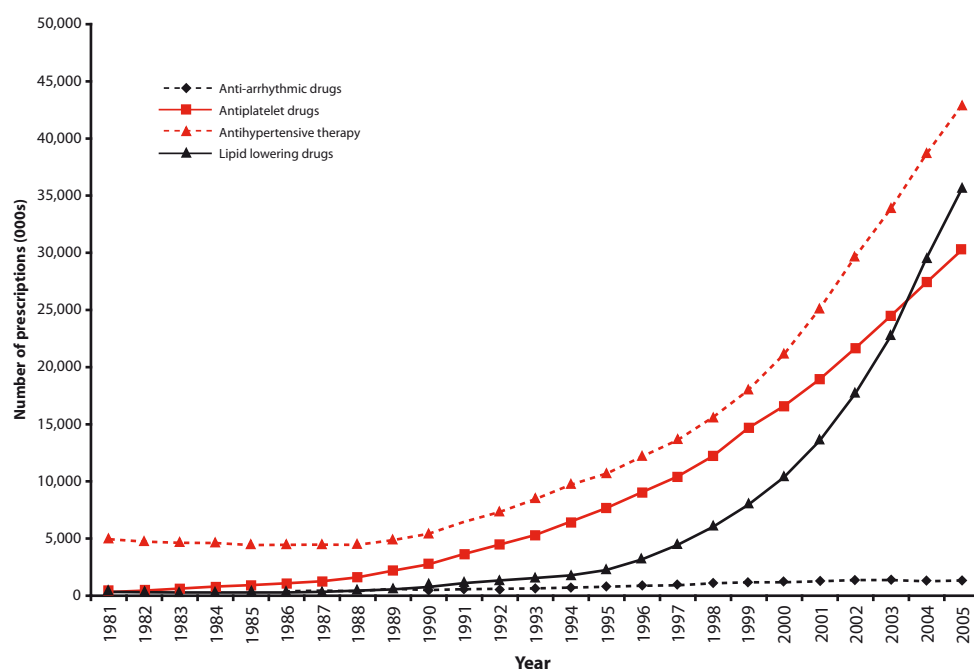


**Table 3.3** Operations for CHD, 1977 to 2003, United Kingdom

|           | Coronary artery bypass surgery (CABG) | CABG with another procedure | Procedure without CABG | Total  | Total annual % increase | Total mortality (%) |
|-----------|---------------------------------------|-----------------------------|------------------------|--------|-------------------------|---------------------|
| 1977      | 2,297                                 | 584                         | 159                    | 3,040  |                         | 9.3                 |
| 1978      | 2,653                                 | 537                         | 155                    | 3,345  | 10.0                    | 7.5                 |
| 1979      | 2,918                                 | 620                         | 150                    | 3,688  | 10.3                    | 8.4                 |
| 1980      | 4,057                                 | 802                         | 152                    | 5,011  | 35.9                    | 6.1                 |
| 1981      | 5,130                                 | 839                         | 154                    | 6,123  | 22.2                    | 5.8                 |
| 1982      | 6,008                                 | 1,224                       | 171                    | 7,403  | 20.9                    | 5.2                 |
| 1983      | 8,332                                 | 1,111                       | 174                    | 9,617  | 29.9                    | 4.8                 |
| 1984      | 9,433                                 | 1,120                       | 170                    | 10,723 | 11.5                    | 3.6                 |
| 1985      | 10,667                                | 1,133                       | 220                    | 12,020 | 12.1                    | 3.8                 |
| 1986      | 10,767                                | 1,243                       | 244                    | 12,254 | 1.9                     | 3.8                 |
| 1987      | 11,521                                | 1,299                       | 283                    | 13,103 | 6.9                     | 3.6                 |
| 1988*     | 11,113                                | 1,306                       | 235                    | 12,654 | -3.4                    | 3.8                 |
| 1989      | 12,648                                | 1,342                       | 197                    | 14,187 | 12.1                    | 3.4                 |
| 1990      | 14,431                                | 1,536                       | 178                    | 16,145 | 13.8                    | 3.7                 |
| 1991      | 15,659                                | 1,710                       | 169                    | 17,538 | 8.6                     | 3.9                 |
| 1992      | 19,241                                | 1,963                       | 194                    | 21,398 | 22.0                    | 3.5                 |
| 1993      | 21,031                                | 2,037                       | 206                    | 23,274 | 8.8                     | 3.4                 |
| 1994/95   | 22,056                                | 2,282                       | 175                    | 24,513 | 5.3                     | 3.5                 |
| 1995/96   | 22,475                                | 2,362                       | 123                    | 24,960 | 1.8                     | 4.3                 |
| 1996/97** | 22,160                                | 2,078                       | 361                    | 24,599 | -1.4                    | 3.8                 |
| 1997/98   | 25,639                                | 2,433                       | 126                    | 28,198 | 14.6                    | 3.3                 |
| 1998/99   | 25,083                                | 2,568                       | 613                    | 28,264 | 0.2                     | 3.1                 |
| 1999/00   | 24,733                                | 2,641                       | 462                    | 27,836 | -1.5                    | 3.0                 |
| 2000/01   | 25,127                                | 2,881                       | 447                    | 28,455 | 2.2                     | 3.1                 |
| 2002/03   | 25,277                                | 3,333                       | 374                    | 28,984 | 0.9                     | 2.8                 |

Notes: No data have been published for 2001/02.

\*One centre did not make a return this year.

\*\* Two centres did not make a return this year.

Data are from the UK Cardiac Surgical Register, collected by the Society of Cardiothoracic Surgeons of Great Britain and Ireland.

Operations performed within the private sector are not included.

Source: Society of Cardiothoracic Surgeons of Great Britain and Ireland (2006) <http://www.scts.org>.

**Table 3.4** *Percutaneous coronary interventions, 1991 to 2005, United Kingdom*

|      | Number of<br>intervention centres | Total PCI<br>interventions | Rate per<br>million | Annual<br>increase % | Success<br>(%) | Mortality<br>(%) |
|------|-----------------------------------|----------------------------|---------------------|----------------------|----------------|------------------|
| 1991 | 52                                | 9,933                      | 174                 |                      | 86             | 0.48             |
| 1992 | 52                                | 11,575                     | 203                 | 16.5                 | 88             | 0.71             |
| 1993 | 53                                | 12,937                     | 227                 | 11.8                 | 89             | 0.59             |
| 1994 | 54                                | 14,624                     | 256                 | 13.0                 | 90             | 0.60             |
| 1995 | 54                                | 17,344                     | 304                 | 18.6                 | 89             | 0.69             |
| 1996 | 53                                | 20,511                     | 359                 | 18.1                 | 90             | 0.72             |
| 1997 | 58                                | 22,902                     | 402                 | 11.7                 | 92             | 0.89             |
| 1998 | 61                                | 24,899                     | 437                 | 8.7                  | 92             | 0.80             |
| 1999 | 63                                | 28,133                     | 494                 | 13.0                 | 90             | 0.61             |
| 2000 | 66                                | 33,652                     | 590                 | 20.0                 | 92             | 0.70             |
| 2001 | 64                                | 38,992                     | 664                 | 12.5                 | 94             | 0.75             |
| 2002 | 64                                | 44,913                     | 759                 | 14.3                 | 92             | 0.54             |
| 2003 | 73                                | 53,261                     | 894                 | 17.8                 | 92             | 0.53             |
| 2004 | 77                                | 62,780                     | 1,050               | 17.4                 | 94             | 0.56             |
| 2005 | 83                                | 70,142                     | 1,165               | 11.0                 | 90             | 0.59             |

Source: British Cardiovascular Intervention Society (2006) [www.bcis.org.uk](http://www.bcis.org.uk)

**Figure 3.4** *Number of coronary artery bypass operations and percutaneous coronary interventions per year, 1980 to 2005, United Kingdom*

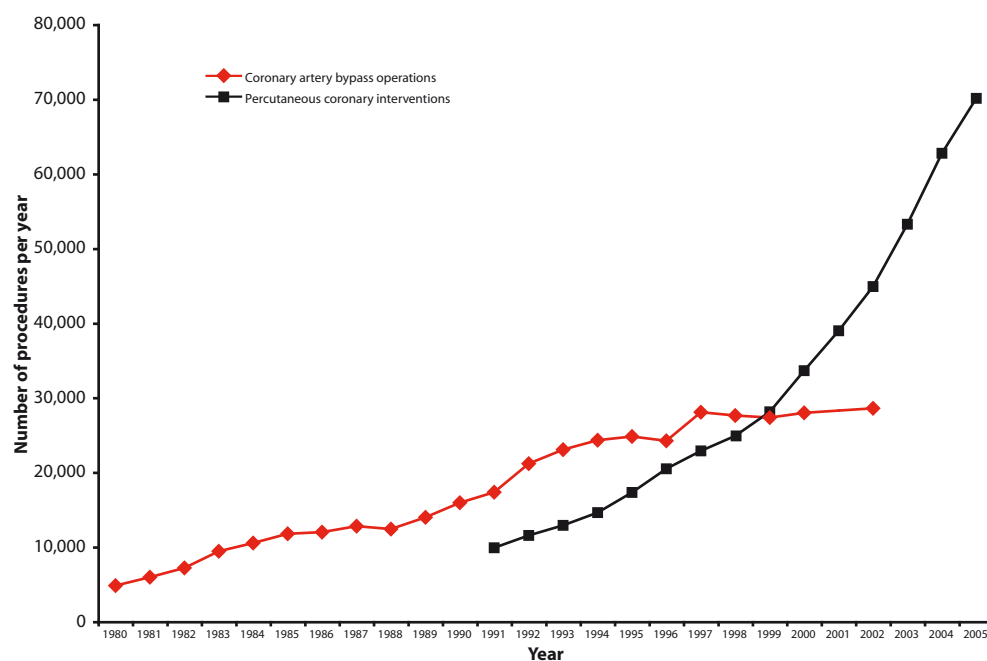


**Table 3.5** *Inpatient cases by main diagnosis and sex, National Health Service hospitals, 2005/06, England*

|                                                     | Episodes of care |           | Days in hospital |            |
|-----------------------------------------------------|------------------|-----------|------------------|------------|
|                                                     | Men              | Women     | Total            | Total days |
| All diagnoses                                       | 6,303,012        | 8,120,494 | 14,423,506       | 52,920,218 |
| All diseases of the circulatory system (I00-I99)    | 694,974          | 549,030   | 1,244,004        | 7,169,489  |
| Coronary heart disease (I20-I25)                    | 274,816          | 153,446   | 428,262          | 1,689,313  |
| Angina pectoris (I20)                               | 74,993           | 55,624    | 130,617          | 401,562    |
| Acute myocardial infarction (I21)                   | 69,770           | 43,470    | 113,240          | 638,397    |
| Chronic coronary heart disease (I25)                | 113,672          | 44,913    | 158,585          | 501,028    |
| Heart failure (I50)                                 | 54,072           | 52,428    | 106,500          | 844,215    |
| Stroke (I60-I69)                                    | 85,041           | 93,280    | 178,321          | 2,534,121  |
| Diabetes (E10-E14)                                  | 41,739           | 33,294    | 75,033           | 344,261    |
| All cancer (C00-D48)                                | 751,922          | 768,625   | 1,520,547        | 4,304,287  |
| Colo-rectal cancer (C18-C21)                        | 99,558           | 68,529    | 168,087          | 577,329    |
| Lung cancer (C33-C34)                               | 58,163           | 40,177    | 98,340           | 402,356    |
| Breast cancer (C50)                                 | 737              | 138,008   | 138,745          | 250,222    |
| Bladder cancer (C67)                                | 63,061           | 20,301    | 83,362           | 195,720    |
| All diseases of the nervous system (G00-G99)        | 136,046          | 158,577   | 294,623          | 1,696,587  |
| All diseases of the respiratory system (J00-J99)    | 473,004          | 449,921   | 922,925          | 4,209,931  |
| All diseases of the digestive system (K00-K93)      | 755,566          | 778,551   | 1,534,117        | 3,670,491  |
| All diseases of the genitourinary system (N00-N99)  | 356,595          | 557,978   | 914,573          | 2,445,532  |
| Complications of pregnancy and childbirth (O00-O99) | 0                | 1,338,513 | 1,338,513        | 2,002,852  |
| Injury and poisoning (S00-T98)                      | 495,712          | 465,305   | 961,017          | 5,299,181  |
| All other diagnoses                                 | 2,597,454        | 3,020,700 | 5,618,154        | 21,777,607 |

Notes: Finished consultant episodes; ordinary admissions and day cases combined.  
ICD codes (10th revision) in parentheses.

Source: Department of Health (2006) Hospital Episode Statistics 2005/06.  
[www.hesonline.nhs.uk](http://www.hesonline.nhs.uk)

*Figure 3.5a Inpatient cases by main diagnosis, men, National Health Service hospitals, 2005/06, England*

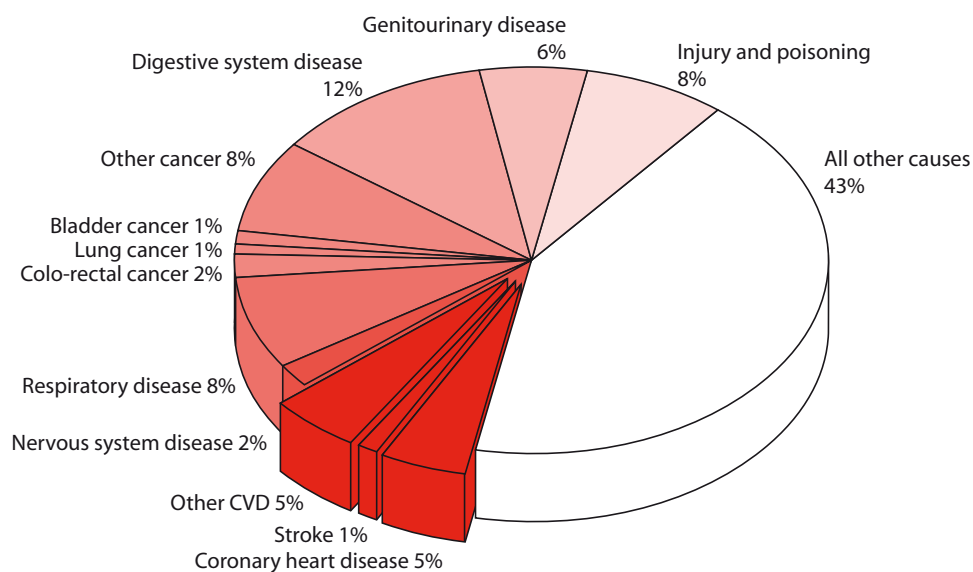


*Figure 3.5b Inpatient cases by main diagnosis, women, National Health Service hospitals, 2005/06, England*

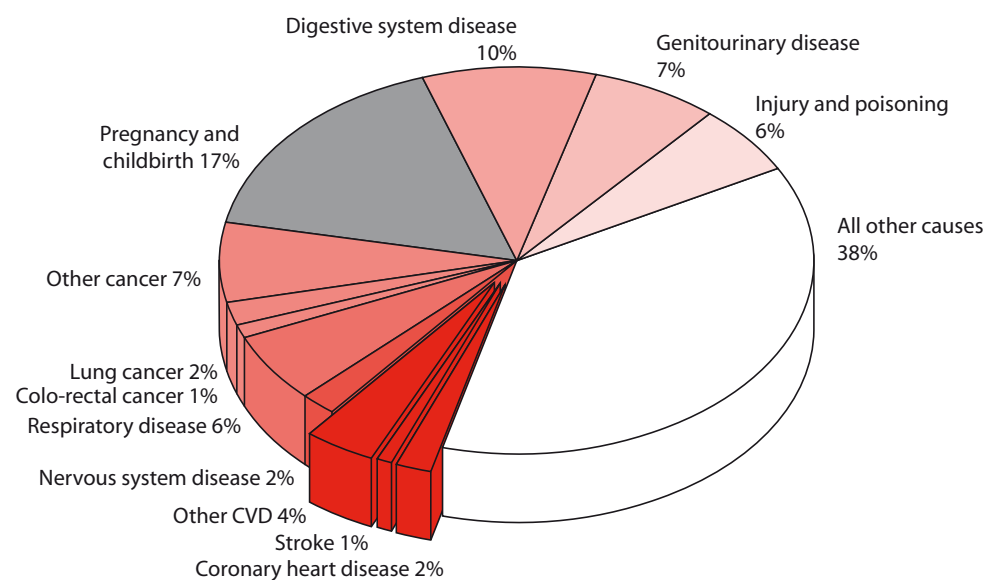


**Table 3.6** *Rates of various procedures for treating CVD, per million population, around 2000, Europe*

|                                          | Coronary<br>Angiograms | Percutaneous<br>coronary<br>interventions | Coronary<br>stents | Open<br>heart<br>surgery | Valve<br>surgery | Coronary<br>artery bypass<br>surgery | Pacemakers | Implantable<br>cardioverter<br>defibrillators |
|------------------------------------------|------------------------|-------------------------------------------|--------------------|--------------------------|------------------|--------------------------------------|------------|-----------------------------------------------|
| <i>Procedures per million population</i> |                        |                                           |                    |                          |                  |                                      |            |                                               |
| Austria                                  | 4,061                  | 1,146                                     | 848                | 815                      |                  | 468                                  |            |                                               |
| Belgium                                  | 4,798                  | 1,536                                     | 931                | 1,230                    |                  |                                      | 857        | 48                                            |
| Bulgaria                                 | 397                    | 126                                       | 38                 | 171                      | 56               | 78                                   | 169        | 0                                             |
| Croatia                                  |                        | 443                                       |                    | 305                      |                  |                                      |            |                                               |
| Czech Republic                           | 2,265                  | 724                                       | 504                | 551                      | 127              | 469                                  | 508        | 12                                            |
| Denmark                                  |                        | 825                                       |                    | 993                      |                  |                                      |            |                                               |
| Estonia                                  | 1,530                  | 388                                       | 237                | 475                      | 111              | 323                                  | 364        | 0                                             |
| Finland                                  | 2,522                  | 607                                       | 365                | 1,054                    | 183              | 921                                  | 361        | 19                                            |
| France                                   | 4,009                  | 1,560                                     | 1,501              | 679                      | 214              | 408                                  | 798        | 18                                            |
| Germany                                  |                        | 2,194                                     |                    | 1,191                    |                  |                                      |            |                                               |
| Greece                                   | 1,660                  | 382                                       | 322                |                          |                  |                                      | 442        | 15                                            |
| Hungary                                  | 1,667                  | 249                                       | 191                | 525                      | 119              | 281                                  | 368        | 14                                            |
| Iceland                                  | 4,098                  | 1,670                                     | 1,241              | 599                      | 141              | 404                                  | 520        |                                               |
| Ireland                                  |                        | 537                                       |                    | 718                      |                  |                                      |            |                                               |
| Israel                                   | 4,719                  | 2,377                                     |                    | 1,266                    | 156              | 879                                  |            |                                               |
| Italy                                    | 2,846                  | 962                                       |                    |                          |                  |                                      |            |                                               |
| Latvia                                   | 1,120                  | 365                                       | 260                | 317                      | 97               | 237                                  | 253        | 3                                             |
| Lithuania                                | 1,622                  | 523                                       | 127                | 396                      | 127              | 241                                  | 249        | 3                                             |
| FYR Macedonia                            | 967                    | 415                                       | 385                | 151                      | 21               | 115                                  | 80         | 1                                             |
| Netherlands                              |                        | 1,091                                     |                    | 904                      |                  |                                      |            |                                               |
| Norway                                   |                        |                                           |                    | 954                      |                  |                                      |            |                                               |
| Poland                                   | 1,520                  | 527                                       | 298                | 438                      | 66               | 303                                  | 358        | 7                                             |
| Portugal                                 | 2,058                  | 538                                       | 458                | 550                      | 156              | 297                                  | 390        | 9                                             |
| Romania                                  | 531                    | 77                                        | 75                 | 119                      | 48               | 49                                   | 53         | 0                                             |
| San Marino                               | 2,253                  | 789                                       | 789                | 113                      | 188              | 413                                  |            |                                               |
| Spain                                    | 1,646                  | 581                                       | 449                | 435                      | 174              | 162                                  | 371        | 38                                            |
| Sweden                                   |                        | 857                                       |                    | 1,061                    |                  | 659                                  |            |                                               |
| Switzerland                              | 3,907                  | 1,358                                     | 991                | 907                      |                  | 565                                  | 447        | 27                                            |
| Turkey                                   | 1,348                  | 249                                       | 150                |                          |                  |                                      | 24         |                                               |
| United Kingdom                           |                        | 564                                       | 473                | 645                      | 79               | 444                                  | 326        | 18                                            |

*Notes:* Data represent crude, non-standardised numbers per 1 million population. Rates for coronary artery bypass grafting include operations with and without valve surgery.

Data collated by the European Society of Cardiology from national registries and reports from national cardiology societies.

*Source:* European Society of Cardiology (2004) Personal communication.

*Figure 3.6a Rates of coronary artery bypass surgery, crude and adjusted for standardised mortality rates from CHD in adults aged 35 to 74, around 2000, Europe*

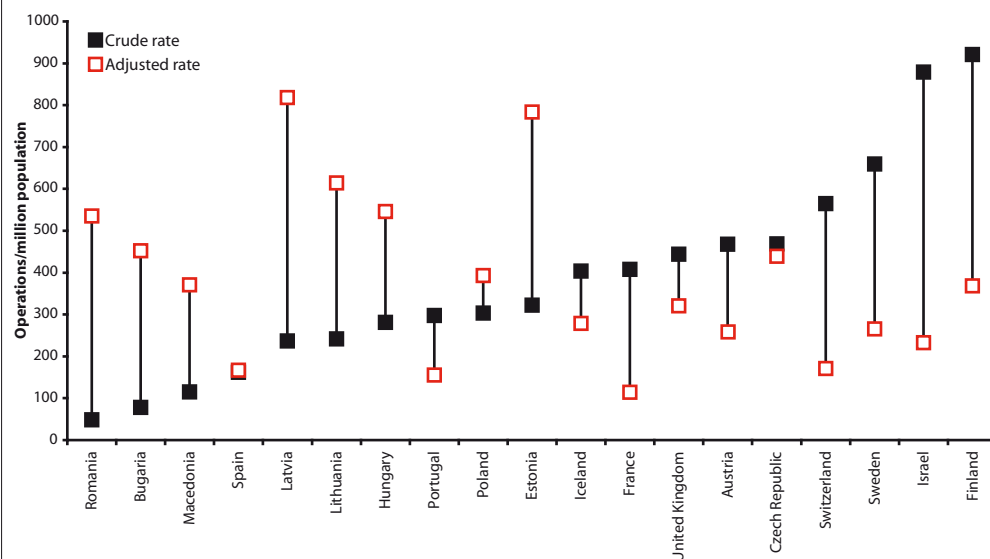


*Figure 3.6b Rates of percutaneous coronary interventions, crude and adjusted for standardised mortality rates from CHD in adults aged 35 to 74, around 2000, Europe*

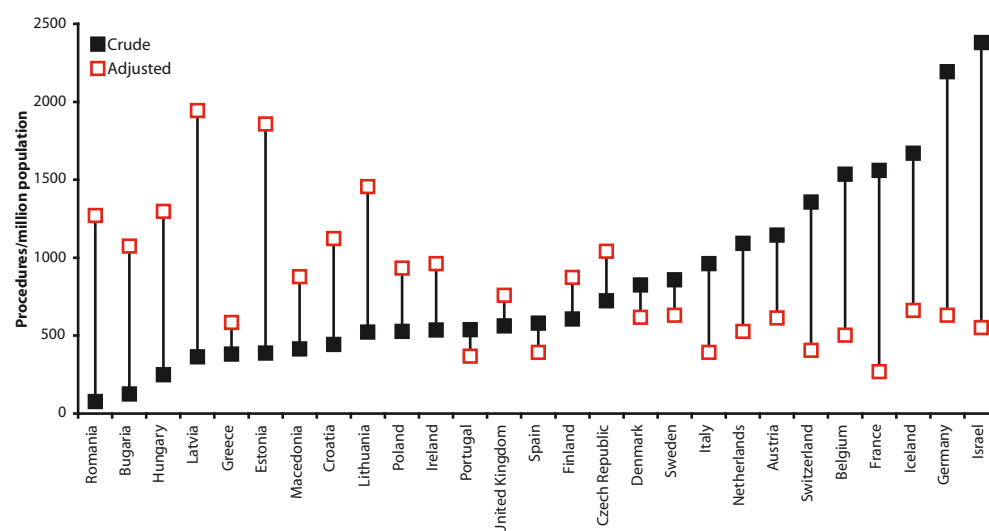


**Table 3.7** Rates of percutaneous coronary interventions, per million population, 1990 to 2003, Europe

|                | 1990 | 1991 | 1992 | 1993 | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  |
|----------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Austria        |      |      |      |      |       | 733   | 832   | 942   | 1,059 | 1,040 | 1,291 | 1,482 | 1,686 |       |
| Belgium        |      |      |      |      |       | 1,133 | 1,375 | 1,291 | 1,459 | 1,536 | 1,647 |       |       |       |
| Croatia        |      |      |      |      |       | 55    | 58    | 82    | 260   | 443   |       |       |       |       |
| Czech Republic |      |      |      | 89   | 112   | 177   | 338   | 513   | 637   | 724   | 899   | 935   | 958   |       |
| Denmark        |      |      |      |      |       | 293   | 429   | 535   | 730   | 825   |       |       |       |       |
| Estonia        |      |      |      |      |       | 155   | 236   | 261   | 321   | 430   | 388   |       |       |       |
| Finland        | 131  | 175  | 212  | 274  | 315   | 354   | 410   | 436   | 490   | 607   | 643   | 655   | 1,032 | 1,276 |
| France         |      |      |      |      |       | 924   | 1,074 | 1,200 | 1,321 | 1,426 | 1,560 |       |       |       |
| Germany        | 426  | 550  | 690  | 857  | 1,062 | 1,335 | 1,533 | 1,682 | 1,788 | 2,024 | 2,194 | 2,368 | 2,439 |       |
| Greece         |      |      |      | 218  | 216   | 308   | 397   | 477   | 359   | 382   |       |       |       |       |
| Hungary        | 14   | 34   | 36   | 64   | 124   | 100   | 134   | 170   | 195   | 231   | 249   | 256   | 276   |       |
| Iceland        | 424  | 407  | 617  | 830  | 891   | 1,272 | 1,290 | 1,377 | 1,655 | 1,670 | 1,608 |       |       |       |
| Israel         |      | 464  | 622  | 999  | 1,207 | 1,299 | 1,402 | 1,502 | 2,006 | 2,377 |       |       |       |       |
| Italy          | 89   | 121  | 164  | 185  | 228   | 275   | 341   | 471   | 630   |       | 962   | 1,148 | 1,319 | 681   |
| Larvia         |      |      |      |      | 21    | 31    | 45    | 135   | 193   | 315   | 365   | 448   | 520   |       |
| Lithuania      |      |      |      |      |       | 111   | 147   | 203   | 341   | 424   | 523   |       |       |       |
| Macedonia      |      |      |      | 6    | 26    | 36    | 113   | 154   | 157   | 193   | 415   |       |       |       |
| Netherlands    | 537  | 583  | 691  | 723  | 795   | 859   | 904   | 943   | 972   | 1,012 | 1,091 | 1,147 | 1,205 |       |
| Poland         |      |      |      |      |       | 75    | 129   | 190   | 281   | 373   | 527   |       |       |       |
| Portugal       |      | 49   | 72   | 69   | 116   | 176   | 234   | 303   | 370   | 459   | 538   |       | 148   |       |
| Romania        |      |      |      |      |       | 8     | 21    | 18    | 43    | 68    | 77    |       |       |       |
| San Marino     | 174  | 261  | 174  | 332  |       | 678   | 549   | 347   | 648   | 789   |       |       |       |       |
| Spain          | 92   | 127  | 173  | 200  | 266   | 315   | 382   | 472   | 512   | 581   | 612   | 654   |       |       |
| Sweden         | 128  | 206  | 325  | 418  | 497   | 547   | 628   | 686   | 750   | 857   | 981   | 1,102 |       |       |
| Switzerland    |      |      |      |      |       | 953   | 1,092 | 1,248 | 1,341 | 1,358 | 1,537 |       |       |       |
| Turkey         |      |      |      | 80   | 117   | 157   | 197   | 242   | 252   |       |       |       |       |       |
| UK             | 147  | 165  | 200  | 213  | 237   | 296   | 349   | 388   | 421   | 473   | 563   | 660   | 758   |       |

Notes: Data represent crude, non-standardised numbers per 1 million population.  
Data collated by the European Society of Cardiology from national registries and reports from national cardiology societies.  
Source: European Society of Cardiology (2004) Personal communication.

Figure 3.7 Rates of percutaneous coronary interventions per million population, 1990 to 2003, Europe

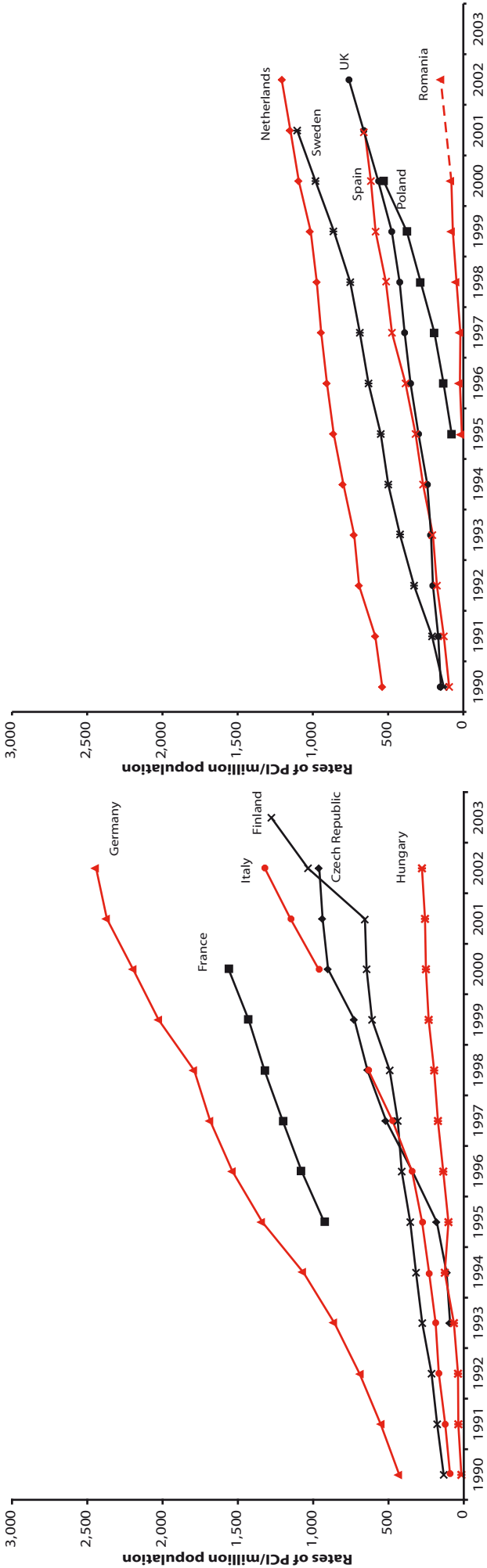


**Table 3.8 Outcome at 4 weeks and use of free Nicotine Replacement Therapy in people using National Health Service smoking cessation services, 1999/00 to 2005/06, England and Northern Ireland**

|                                                                    | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 |
|--------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>ENGLAND</b>                                                     |         |         |         |         |         |         |         |
| Total number setting a quit date                                   | 14,600  | 132,500 | 227,335 | 234,858 | 361,224 | 529,567 | 602,820 |
| Number who had successfully quit at 4 week follow-up (self report) | 5,800   | 64,600  | 119,834 | 124,082 | 204,876 | 298,124 | 329,681 |
| % who had successfully quit at 4 week follow-up (self report)      | 39%     | 49%     | 53%     | 53%     | 57%     | 56%     | 55%     |
| % receiving Nicotine Replacement Therapy                           | 64%     | 36%     | 65%     | 76%     | 78%     | 81%     | 83%     |
| <b>NORTHERN IRELAND</b>                                            |         |         |         |         |         |         |         |
| Total number setting a quit date                                   |         |         |         |         |         | 7,369   | 8,702   |
| Number who had successfully quit at 4 week follow-up (self report) |         |         |         |         |         | 3,771   | 4,119   |
| % who had successfully quit at 4 week follow-up (self report)      |         |         |         |         |         | 51%     | 47%     |
| % receiving Nicotine Replacement Therapy                           |         |         |         |         |         | 71%     | 69%     |

*Notes:* A client is counted as having successfully quit smoking at the 4 week follow-up if he/she has not smoked at all since two weeks after the quit date.  
Since 2004/05 ‘% receiving Nicotine Replacement Therapy’ refers to NRT obtained by prescription, purchase or supply free of charge.  
Prior to 2004/05 ‘% receiving Nicotine Replacement Therapy’ refers to NRT obtained free of charge.

*Source:* Health and Social Care Information Centre (2006) *Statistics on NHS stop smoking services in England, April 2005 to March 2006*. London: Department of Health, and previous editions. See <http://www.ic.nhs.uk/pubs/ss0506/sssbull/file>  
Northern Ireland Statistics & Research Agency (2006) *Statistics on smoking cessation services in Northern Ireland: 2005/06*. Belfast: Department of Health, Social Services and Public Safety.

**Table 3.9** *Emergency calls: responses within 8 minutes by Ambulance Service, 1999/00 to 2005/06, England*

| <i>Ambulance Service</i>                         | 1999/00 | 2000/01 | 2001/02     | 2002/03     | 2003/04     | 2004/05     | 2005/06      |
|--------------------------------------------------|---------|---------|-------------|-------------|-------------|-------------|--------------|
|                                                  | %       | %       | %           | %           | %           | %           | %            |
| <b>Rural Services</b>                            |         |         |             |             |             |             |              |
| Cumbria Ambulance NHS Trust                      | 61.6    | 69.2    | 72.6        | 76.6        | 76.7        | 75.0        | 74.4*        |
| North East Ambulance NHS Trust                   | 50.1    | 50.8    | 72.3        | 76.6        | 75.6        | 77.4        | 75.3         |
| Tees, East & North Yorkshire Ambulance NHS Trust | 55.5    | 52.8    | 71.9        | 73.4        | 73.7        | 77.1        | 75.0         |
| East Midlands Ambulance NHS Trust                | 37.8    | 49.0    | 73.1        | 73.2        | 75.0        | 75.4        | 75.3         |
| Lincolnshire Ambulance NHS Trust                 | 58.3    | 64.8    | 77.5        | 76.4        | 75.7        | 77.0        | 76.0         |
| East Anglian Ambulance NHS Trust                 | -       | 53.0    | 63.8        | 75.2        | 76.1        | 76.5        | 75.9         |
| Bedfordshire & Hertfordshire Ambulance NHS Trust | -       | 48.9    | 69.5        | 76.2        | 75.3        | 75.2        | 77.1         |
| Essex Ambulance NHS Trust                        | 61.8    | 72.4    | 78.1        | 67.3        | 75.7        | 77.3        | 77.1         |
| Sussex Ambulance NHS Trust                       | 56.5    | 61.3    | 71.8        | 72.4        | 71.8        | 73.4        | 75.5         |
| Kent Ambulance NHS Trust                         | 40.3    | 45.1    | 69.7        | 72.9        | 74.3        | 75.8        | 76.6         |
| Dorset Ambulance NHS Trust                       | 57.7    | 70.3    | 76.1        | 71.9        | 75.4        | 76.9        | 78.0         |
| Hampshire Ambulance NHS Trust                    | -       | -       | 66.9        | 73.0        | 74.1        | 75.6        | 75.6         |
| Wiltshire Ambulance NHS Trust                    | -       | 59.8    | 73.6        | 71.4        | 55.7        | 68.0        | 71.2         |
| Isle of Wight Ambulance (NHS Trust)              | -       | 55.8    | 69.4        | 73.3        | 76.5        | 77.2        | 75.7         |
| Royal Berkshire Ambulance NHS Trust              | 63.2    | 72.3    | 76.4        | 76.4        | 76.1        | 76.6        | 77.2         |
| The Two Shires Ambulance NHS Trust               | 60.7    | 65.0    | 73.9        | 76.0        | 76.6        | 76.0        | 72.6         |
| Oxfordshire Ambulance NHS Trust                  | -       | 50.9    | 71.3        | 75.2        | 75.4        | 77.9        | 81.6         |
| West Country Ambulance NHS Trust                 | 39.2    | 43.3    | 58.1        | 72.2        | 75.4        | 75.1        | 75.3*        |
| Gloucestershire Ambulance NHS Trust              | 49.6    | 58.3    | 71.2        | 71.5        | 73.3        | 71.2        | 69.0         |
| Hereford & Worcester Ambulance NHS Trust         | -       | 57.3    | 76.7        | 77.8        | 75.3        | 75.0        | 75.2         |
| Shropshire Ambulance NHS Trust                   | 52.8    | 53.7    | 76.2        | 78.0        |             |             |              |
| Staffordshire Ambulance NHS Trust                | 87.4    | 87.4    | 87.5        | 86.4        | 86.6        | 88.3        | 87.5         |
| Warwickshire Ambulance NHS Trust                 | 68.3    | 73.5    | 76.8        | 76.8        | 75.7        | 75.6        | 78.1         |
| Lancashire Ambulance NHS Trust                   | 68.6    | 77.3    | 78.3        | 76.7        | 77.7        | 76.7        | 75.5         |
| <b>Urban Services</b>                            |         |         |             |             |             |             |              |
| West Yorkshire Metropolitan Ambulance NHS Trust  | -       | 69.5    | 77.4        | 72.1        | 68.4        | 76.0        | 67.6*        |
| South Yorkshire Metropolitan Ambulance NHS Trust | -       | 58.8    | 77.2        | 75.3        | 71.8        | 72.5        | 78.9*        |
| Surrey Ambulance NHS Trust                       | -       | 67.0    | 76.4        | 75.0        | 77.1        | 74.8        | 75.8         |
| London Ambulance NHS Trust                       | -       | 41.8    | 57.2        | 69.1        | 76.0        | 76.6        | 75.1         |
| Avon Ambulance NHS Trust                         | 51.3    | 60.9    | 71.5        | 73.2        | 72.0        | 75.4        | 76.8         |
| West Midlands Metropolitan Ambulance NHS Trust   | 64.0    | 69.5    | 76.0        | 78.3        | 76.4        | 76.2        | 74.4*        |
| Mersey Regional Ambulance NHS Trust              | 59.9    | 77.4    | 75.6        | 76.7        | 76.1        | 73.7        | 71.2         |
| Greater Manchester Ambulance NHS Trust           | -       | 51.6    | 71.9        | 82.4        | 82.5        | 79.6        | 75.9         |
| <b>England average</b>                           |         |         | <b>70.8</b> | <b>74.6</b> | <b>75.7</b> | <b>76.2</b> | <b>75.3*</b> |

Notes: From 2003/04 Shropshire Ambulance Services are part of West Midlands Ambulance Service.  
Category A emergency incidents only. \* indicates that the accuracy of the estimate is uncertain - see source for details.

Source: Office for National Statistics (2006) Ambulance services, England: 2005-06. London: NHS, and previous editions

**Table 3.10** *Thrombolytic treatment, use of aspirins, beta blockers and statins after a heart attack, 2004/05 and 2005/06, England and Wales*

|                          | Percentage of patients having thrombolytic treatment within 30 mins of arrival at hospital |         | Percentage of patients having thrombolytic treatment within 60 mins of calling for help |         | Percentage of patients discharged on secondary prevention medication |               |         |
|--------------------------|--------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------|---------------|---------|
|                          | 2004/05                                                                                    | 2005/06 | 2004/05                                                                                 | 2005/06 | Aspirin                                                              | Beta Blockers | Statins |
|                          |                                                                                            |         |                                                                                         |         | 2005/06                                                              | 2005/06       | 2005/06 |
|                          | %                                                                                          | %       | %                                                                                       | %       | %                                                                    | %             | %       |
| Target                   | 75                                                                                         | 75      | 58                                                                                      | 68      | 80                                                                   | 80            | 80      |
| England National Average | 84                                                                                         | 83      | 54                                                                                      | 58      | 97                                                                   | 92            | 96      |
| Wales National Average   | 70                                                                                         | 74      | 28                                                                                      | 30      | 98                                                                   | 91            | 94      |

Notes: Data are from the MINAP project, based at the Royal College of Physicians. For more details of the project see [www.rcplondon.ac.uk/index.asp](http://www.rcplondon.ac.uk/index.asp)

Source: Royal College of Physicians (2006) Myocardial Infarction National Audit Project. How the NHS manages heart attacks. Fifth public report 2006. London: UCL

**Table 3.11** *Percentage of patients receiving cardiac rehabilitation after hospitalisation for heart attack, coronary artery bypass surgery or percutaneous coronary interventions by Government Office Region, 2003/04, England*

| Government Office Region | Number hospitalised for heart attack, CABG or PCI* | Number receiving cardiac rehabilitation post heart attack, CABG or PCI** | % receiving cardiac rehabilitation post heart attack, CABG or PCI |
|--------------------------|----------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------|
| North East               | 12,864                                             | 6,516                                                                    | 51                                                                |
| North West               | 30,757                                             | 11,276                                                                   | 37                                                                |
| Yorkshire and the Humber | 20,398                                             | 5,890                                                                    | 29                                                                |
| East Midlands            | 16,581                                             | 4,196                                                                    | 25                                                                |
| West Midlands            | 21,372                                             | 6,906                                                                    | 32                                                                |
| East of England          | 21,329                                             | 5,125                                                                    | 24                                                                |
| London                   | 22,484                                             | 4,872                                                                    | 22                                                                |
| South East               | 27,928                                             | 9,373                                                                    | 34                                                                |
| South West               | 23,692                                             | 6,636                                                                    | 28                                                                |
| England                  | 197,405                                            | 62,495                                                                   | 32                                                                |

Notes: \* Hospital Episode Statistics

\*\* British Association of Cardiac Rehabilitation Database, data adjusted for non-response.

Sources: Department of Health (2005) Hospital Episode Statistics, personal communication.

British Association Cardiac Rehabilitation Database (2005), personal communication.

# 4. Smoking

Smoking increases the risk of CHD. The long-term risk of smoking to individuals has been quantified in a 50-year cohort study of British doctors. The study found that mortality from CHD was around 60% higher in smokers (and 80% higher in heavy smokers) than in non-smokers. Observing deaths in smokers and non-smokers over a 50-year period, the study concluded “about half of all regular smokers will eventually be killed by their habit”<sup>1</sup>.

Second hand smoke (smoke that has been exhaled by a smoker) is also harmful to cardiovascular health. Regular exposure to second hand smoke increases the risk of CHD by around 25%<sup>2-4</sup>.

It is estimated that smoking caused about 31,000 deaths from CVD in 2000 in the UK. Overall, around one in eight deaths from CVD were attributable to smoking. For men, the proportion of CVD deaths attributable to smoking fell between 1995 and 2000, from 16% to 13% in England and Wales, and from 22% to 18% in Scotland. For women, the proportion of CVD deaths attributable to smoking fell by 1% between 1995 and 2000, from 12% to 11% in England and Wales, and from 19% to 18% in Scotland (Table 4.2). A higher proportion of premature deaths from CVD, around one in five, were attributable to smoking<sup>5</sup>.

Research from the World Health Organization has estimated the impact of smoking on total disease burden (both mortality and morbidity) in terms of disability-adjusted life years (DALYs) lost. The World Health Report 2002 estimated that in developed countries around 12% of all disease burden and over 20% of CVD was due to smoking<sup>6</sup>.

More recently the INTERHEART case-control study estimated that 29% of heart attacks in Western Europe were due to smoking, and that smokers and former smokers were at almost twice the risk of a heart attack compared to never smokers<sup>7</sup>.

A systematic review of the evidence on smoking cessation in patients with CHD concluded that, in this group, quitting smoking reduces the risk of dying by 36%<sup>8</sup>.

## *Public health targets*

In England, new targets for smoking were announced in 1998<sup>9</sup> which were less ambitious than the Health of the Nation targets they replaced<sup>10</sup> (Table 4.1). The *Smoking Kills* targets for smoking among adults are to reduce rates to 26% by 2005, and 21% by 2010.

The most recent data suggest the 2005 milestone has been met in both men and women, with overall smoking prevalence falling to 24% in 2005. The 2010 target is likely to be achieved (Figure 4.1a)<sup>11</sup>.

The 2005 target for smoking in children has already been met and the 2010 target is also likely to be achieved (Figure 4.1b)<sup>12</sup>.

In 2000, an inequalities target was added to the general smoking targets in England<sup>13</sup>. This aims to reduce smoking rates among manual groups from 32% in 1998 to 26% in 2010. The latest smoking figures indicate some progress towards this target, although 31% of men and 28% of

women in manual groups currently smoke (Table 4.7). Scotland appears to be making progress towards the target of a reduction in the proportion of adults smoking to 22% by 2010. Smoking prevalence among Scottish adults has reduced from 35% in 1998 to 28% in 2005.

## *Overall prevalence of smoking*

In 2005, 25% of men and 23% of women smoked cigarettes in Great Britain (Table 4.3).

From the age-specific smoking rates in Table 4.3, we estimate that there are over 12.0 million adult cigarette smokers in the UK today.

## *Age and sex differences*

Overall, smoking prevalence in 2005 was higher among men than among women for all age groups except 16 to 19 years. The greatest difference was found in those aged 25 to 34 years where smoking rates were 34% for men and 29% for women (Table 4.3 and Figure 4.3a).

In both men and women, the proportion of adults who smoked was highest in those aged 20 to 34 years. Rates declined steadily with age and were lowest in those aged 60 and above (14% in men and 13% in women) (Table 4.3). This pattern has only emerged since the mid-1980s – prior to that, smoking prevalence was similar in all but the youngest and oldest age groups. This change reflects an increase in the number of men and women aged 35 and over who have given up smoking.

## *Young people and smoking*

In 2006, just under one in ten young people aged 11 to 15 in England were regular smokers (defined as usually smoking at least one cigarette per week) (Table 4.4). As in previous years, girls were more likely to be regular smokers than boys (10% of girls compared to 7% of boys). The proportion of regular smokers increased sharply with age in young people: 1% of 11 year olds in England smoked regularly compared with 21% of 15 year olds<sup>14</sup>. From the age-specific rates in England, we estimate there are over 300,000 regular smokers aged 11 to 15 in the UK today.

## *Temporal trends*

The highest recorded level of smoking among men in the UK was 82%, found in the first national survey of smoking behaviour in 1948. Among women, smoking prevalence remained fairly constant between 1948 and 1970, peaking at 45% in 1966<sup>15</sup>.

The 1970s and early 1980s saw a substantial fall in the proportion of adult smokers in Great Britain. This decline in smoking prevalence continued at a slower rate for another decade. Results from the General Household Survey (GHS) show that since the early 1990s the decline in smoking prevalence has levelled off and smoking rates have remained relatively stable at between 26% and 28% (Figure 4.1a).

The decline in smoking rates over the last 30 years has been faster in men than in women, resulting in a major narrowing of the gap between the proportions of men and women who smoke cigarettes (Table 4.3 and Figures 4.3a and 4.3b). In 1974, for example, men were much more likely to be smokers than women (51% of men compared to 41% of women). By 1990 the difference in smoking prevalence had reduced to just two percentage points (31% men compared

to 29% of women), and since then there has been an excess in male smoking rates of between 1 and 4 percentage points.

The decline in smoking prevalence since the 1970s has not occurred equally across all age groups. Smoking rates have declined most in those aged over 35 and least in younger age groups (Table 4.3).

As well as a decline in the numbers of adults smoking cigarettes there has been an overall decline in the average number of cigarettes smoked by men. This fall in cigarette consumption has occurred mainly in younger smokers. The number of cigarettes smoked by those aged 50 years and over has changed very little since the mid 1970s (Table 4.5).

In teenagers, particularly girls, rates of smoking increased in England during the 1990s, peaking in 1996 (Figure 4.1b). The most recent survey data show the prevalence of regular smoking in young people in England in 2004 was 9%, unchanged from 2003, and down from 10% in 2002 (Table 4.4). In Scotland, trend data show that while the proportion of boys who smoke has declined from 11% in 2002 to 9% in 2004, the proportion of girls who smoke has remained unchanged at 16%. The most recent data from Northern Ireland show a decline in smoking prevalence in both boys and girls (Table 4.4).

## *National and regional differences*

In 2005, 28% of men and 25% of women in Scotland smoked, compared to 24% of men and 21% of women in Wales, 27% of men and 25% of women in Northern Ireland and 25% of men and 22% of women in England. Smoking rates have been consistently higher in Scotland for over 25 years (Table 4.6).

Within England, smoking prevalence rates are generally higher in the North of the country, although this pattern is more marked in women than men (Figures 4.6a and 4.6b). In 2005, among men, the highest proportion of smokers was found in the North East (28%) and the lowest in the West Midlands (23%). Among women, smoking prevalence was highest in the North West (30%) and lowest in London (20%) (Table 4.6 and Figure 4.6).

Regional patterns of smoking among young people in the UK are unclear (Table 4.4). Surveys in each country used different methodologies.

## *Socio-economic differences*

There is a strong association between cigarette smoking and socio-economic position. Cigarette smoking is more prevalent among manual social groups than among non-manual groups (Table 4.7), and is lowest among higher managerial and professional classes (Table 4.8 and Figure 4.8). In 2005, 31% of men and 28% of women in manual households smoked compared to 19% of men and 18% of women in non-manual households (Table 4.7). This class difference has persisted since the 1990s, and recent data suggest no narrowing of the gap. However, the introduction of a new socio-economic classification by the Office for National Statistics in 2001 makes comparisons with earlier years problematic<sup>16</sup>.

## *Ethnic differences*

Smoking rates vary considerably between ethnic groups in the UK. In 2004, the rates for men were particularly high in the Bangladeshi communities (40% current smokers). With the exception of

Black Caribbean (24%) and Irish women (26%) who had similar rates to women in the general population (23%), smoking rates in ethnic minority women were very low (10% and below) (Table 4.9 and Figure 4.9).

Chewing tobacco is consumed more often among the Bangladeshi community where 16% of Bangladeshi women use this form of tobacco<sup>17</sup>.

## International differences

Tobacco is used across the world in many forms including cigarettes, chewing tobacco and snuff. In many countries, cigarette smoking is only a small part of tobacco use, and comparable data on tobacco use are not widely available. Recent data from the World Health Organization show the known prevalence of adult smoking varies among men from 65% in Kazakhstan and the Republic of Korea to 6% in Ethiopia, and among women from 57% in Lebanon to less than 1% in Algeria, Ethiopia, Egypt and Morocco (Table 4.10). Smoking rates in the UK are, by international standards, relatively low in men (within the second lowest quintile) and relatively high in women (within the highest quintile) (Figures 4.10a and 4.10b).

Data from the World Health Organization's Europe Region "Health for All Database" show that, in 2004, the overall UK adult smoking rate of 25% was below the average for the European Union (EU-25 30%) and for Europe (2002) as a whole (29%). The decline in smoking prevalence in the UK since the mid 1990s has been slight (2%). Cyprus, Denmark, Kazakhstan, Kyrgyzstan and Switzerland all showed a decline of 10% or more (Table 4.11 and Figure 4.11).

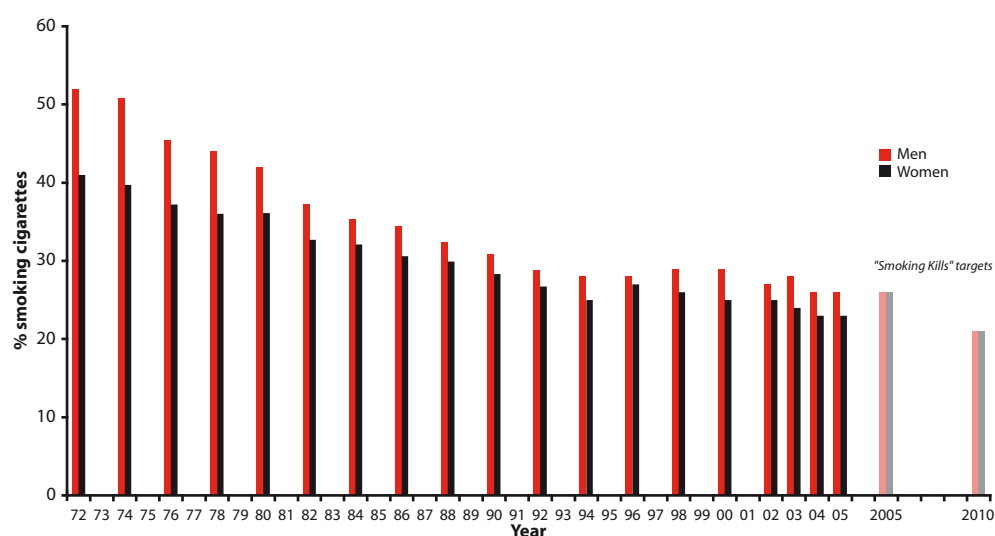
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2. Law MR, Morris JK, Wald NJ (1997) Environmental tobacco smoke exposure and ischaemic heart disease: an evaluation of the evidence. *BMJ*; 315:973-80.
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4. For more information and statistics on secondhand smoke, see Chapter 3 in Petersen S and Peto V (2004) Smoking statistics. British Heart Foundation: London (also available at [www.heartstats.org/smokingstatistics](http://www.heartstats.org/smokingstatistics) ).
5. Data available at [www.ctsu.ox.ac.uk/~tobacco](http://www.ctsu.ox.ac.uk/~tobacco). See Table 1.3 in Petersen S and Peto V (2004) Smoking statistics. British Heart Foundation: London (also available at [www.heartstats.org/smokingstatistics](http://www.heartstats.org/smokingstatistics) ).
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9. Department of Health (1998) *Smoking Kills: A White paper on Tobacco*. The Stationery Office: London.
10. *The Health of the Nation outlined four smoking targets: to reduce the prevalence of smoking in adults to 20% by the year 2000 (from a prevalence in 1990 of 31% in men and 28% in women); to reduce the consumption of cigarettes by at least 40% by the year 2000 (from 98 billion manufactured cigarettes per year in 1990 to 59 billion); to reduce smoking prevalence among 11-15 year olds by at least 33% by 1994 (from 8% in 1988 to less than 6%) and for at least a third of women smokers to stop smoking at the start of their pregnancy by the year 2000*. Department of Health (1992) *The Health of the Nation*. HMSO: London.
11. Smoking Kills targets were based on un-weighted GHS baseline data, but are currently monitored using weighted data. Because of this methodological change it has been suggested by the Office for National Statistics that these targets be revised upwards by one percentage point.
12. Smoking prevalence in pregnant women is measured every five years in the Infant Feeding Survey. The latest data show the prevalence of smoking in pregnant women fell from 23% in 1995 to 20% in 2000. If this rate of decline continues the Smoking Kills targets for smoking in pregnant women (18% by 2005 and 15% by 2010) should be met. See [www.dh.gov.uk/PublicationsAndStatistics/PressReleases/PressReleasesNotices/fs/en?CONTENT\\_ID=4013168&chk=Xri4zW](http://www.dh.gov.uk/PublicationsAndStatistics/PressReleases/PressReleasesNotices/fs/en?CONTENT_ID=4013168&chk=Xri4zW)
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15. Wald N and Nicolaides-Bouman A (1991) *UK Smoking Statistics*. 2nd Edition. Oxford University Press: Oxford.
16. Smoking prevalence is also measured in the ONS Omnibus Survey. The most recent data from this source show no narrowing between 2001 and 2002 of the gap between manual and non-manual classes. Office for National Statistics (2004) *Smoking Related Behaviour and Attitudes*, 2003. The Stationery Office: London.
17. Department of Health (2005) *Health Survey for England 2004. The Health of Minority Ethnic Groups - headline tables*. NHS Health and Social Care Information Centre.

**Table 4.1** *Smoking targets for the United Kingdom*

|                                     |                                                                                                                                   |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>England<sup>1,2,3,4</sup></b>    |                                                                                                                                   |
| Adults                              | To reduce adult smoking in all social classes so that the overall rate falls from 28% in 1996 to 21% or less by the year 2010     |
| Pregnant women                      | To reduce the percentage of women who smoke during pregnancy from 23% in 1995 to 15% by the year 2010                             |
| Children                            | To reduce smoking among children from 13% in 1996 to 9% or less by the year 2010                                                  |
| Inequalities target                 | To reduce smoking rates among manual groups from 32% in 1998 to 26% by 2010, in order to narrow the health gap                    |
| <b>Scotland<sup>5,6</sup></b>       |                                                                                                                                   |
| Adults                              |                                                                                                                                   |
| - Target                            | To reduce the rate of smoking among adults aged 16+ from 26.5% in 2004 to 22.0% in 2010                                           |
| - Inequalities target               | To reduce the rate of smoking among adults aged 16+, for the most deprived areas of Scotland, from 37.3% in 2004 to 33.2% in 2008 |
| Pregnant women                      |                                                                                                                                   |
| - Target                            | To reduce the proportion of women who smoke during pregnancy from 29% to 23% between 1995 and 2005 and to 20% by 2010             |
| - Inequalities target               | To reduce the rate of smoking during pregnancy, for the most deprived communities, from 35.8% in 2003 to 32.2% in 2008            |
| Young people                        |                                                                                                                                   |
| - Target                            | To reduce smoking among young people aged 12-15 years, from 14% to 12% between 1995 and 2005 and to 11% by 2010                   |
| <b>Wales<sup>7</sup></b>            |                                                                                                                                   |
| No target set                       |                                                                                                                                   |
| <b>Northern Ireland<sup>8</sup></b> |                                                                                                                                   |
| Adults                              | To increase the proportion of the adults who do not smoke cigarettes from 73% in 2000/01 to 75% by the year 2006/07               |
| Pregnant women                      | To increase the proportion of pregnant women who do not smoke from 78% in 2000 to 82% by the year 2005                            |
| Children                            | To increase the proportion of the population aged 11-16 who do not smoke cigarettes from 86.5% in 2000 to 89% by the year 2006    |
| Inequalities target                 | To increase the proportion of non-smokers in manual groups from 65% in 2000/01 to 69% in 2006/07                                  |

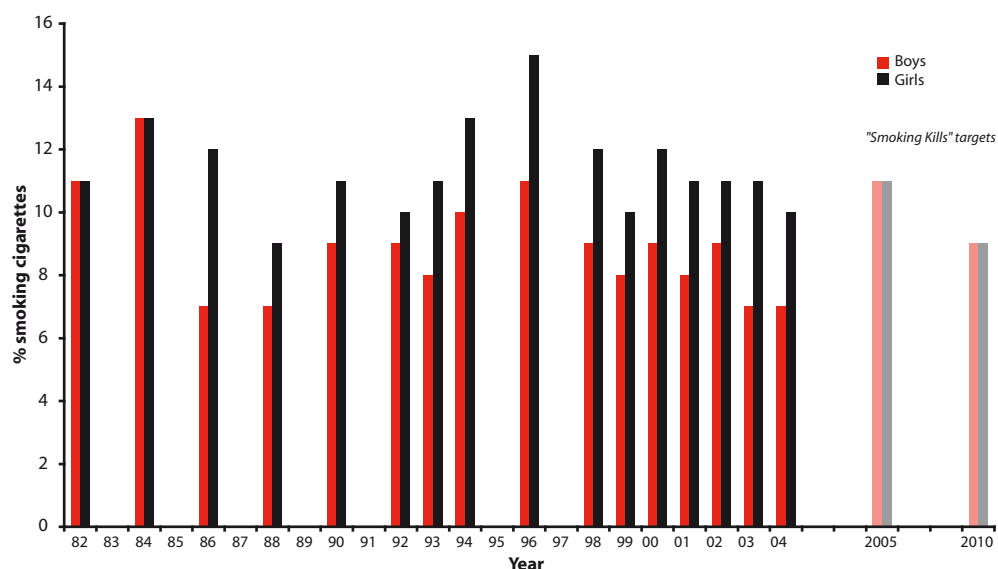
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3. Department of Health (2000) *The NHS Cancer Plan*. Department of Health: London.
4. Department of Health Public Service Agreement (2004) <http://www.dh.gov.uk/assetRoot/04/08/67/82/04086782.pdf>
5. Scottish Executive (2004) *Building a Better Scotland. Spending Proposals 2005-2008: Enterprise, Opportunity and, Fairness*. The Scottish Executive: Edinburgh
6. Scottish Executive (2004) *A Breath of Fresh Air for Scotland. Improving Scotland's Health: the challenge tobacco control action plan*. The Scottish Executive: Edinburgh
7. The Welsh Assembly Government is currently developing new determinants of health indicators. The first stage of this work is underway and includes a focus on CHD. See the Chief Medical Officer Wales website [www.cmo.wales.gov.uk/content/work/health-gain-targets/determinants-of-health-e.htm](http://www.cmo.wales.gov.uk/content/work/health-gain-targets/determinants-of-health-e.htm)
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Figure 4.1a Cigarette smoking by sex, adults aged 16 and over, 1972 to 2005, England with “Smoking Kills” national targets



Source: Office for National Statistics (2006) Results from the 2005 General Household Survey. The Stationery Office: London and previous editions.

Figure 4.1b Cigarette smoking by sex, children aged 11 to 15, 1982 to 2004, England, with “Smoking Kills” national targets



Source: Office for National Statistics (2005) Smoking, drinking and drug use among young people in England in 2004: Headline Figures. See [www.dh.gov.uk](http://www.dh.gov.uk)

**Table 4.2** *Smoking-attributed deaths by cause, sex and age, 1995 and 2000, England and Wales, and Scotland*

| YEAR                     | AGE     | Males      |             |                  | Females    |             |                  |
|--------------------------|---------|------------|-------------|------------------|------------|-------------|------------------|
|                          |         | All causes | All cancers | Vascular disease | All causes | All cancers | Vascular disease |
|                          |         | %          | %           | %                | %          | %           | %                |
| <b>England and Wales</b> |         |            |             |                  |            |             |                  |
| 1995                     | 35-69   | 29         | 40          | 23               | 21         | 18          | 22               |
|                          | 70+     | 24         | 39          | 14               | 14         | 20          | 10               |
|                          | Any age | 25         | 39          | 16               | 15         | 19          | 12               |
| 2000                     | 35-69   | 25         | 36          | 19               | 20         | 18          | 20               |
|                          | 70+     | 21         | 36          | 12               | 15         | 21          | 10               |
|                          | Any age | 21         | 35          | 13               | 15         | 20          | 11               |
| <b>Scotland</b>          |         |            |             |                  |            |             |                  |
| 1995                     | 35-69   | 36         | 50          | 31               | 29         | 26          | 31               |
|                          | 70+     | 29         | 47          | 18               | 21         | 29          | 16               |
|                          | Any age | 30         | 48          | 22               | 22         | 28          | 19               |
| 2000                     | 35-69   | 30         | 43          | 25               | 29         | 28          | 30               |
|                          | 70+     | 25         | 42          | 15               | 22         | 29          | 16               |
|                          | Any age | 26         | 42          | 18               | 23         | 28          | 18               |

*Notes:* To be conservative, no deaths before age 35 were attributed to smoking

*Source:* Peto R, Lopez AD, Boreham J and Thun M. (2006) *Mortality from smoking in developed countries (2nd Ed)*. Oxford University Press, Oxford. Also see: [www.deathsfromsmoking.net](http://www.deathsfromsmoking.net)

Table 4.3 Cigarette smoking by sex and age, 1972 to 2005, Great Britain

|                      | 1972   | 1974   | 1976   | 1978   | 1980   | 1982   | 1984   | 1986   | 1988   | 1990   | 1992   | 1994   | 1996   | 1998   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      | %      |
| <b>MEN</b>           |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 16-19                | 43     | 42     | 39     | 35     | 32     | 31     | 29     | 30     | 28     | 28     | 29     | 28     | 26     | 30     | 30     | 25     | 22     | 27     | 23     | 23     |
| 20-24                | 55     | 52     | 47     | 45     | 44     | 41     | 40     | 41     | 37     | 38     | 39     | 40     | 43     | 42     | 35     | 40     | 37     | 38     | 36     | 34     |
| 25-34                | 56     | 56     | 48     | 48     | 47     | 40     | 40     | 37     | 37     | 36     | 34     | 34     | 38     | 37     | 39     | 38     | 36     | 38     | 35     | 34     |
| 35-49                | 55     | 55     | 50     | 48     | 45     | 40     | 39     | 37     | 37     | 34     | 32     | 31     | 30     | 32     | 31     | 31     | 29     | 32     | 31     | 29     |
| 50-59                | 54     | 53     | 49     | 48     | 47     | 42     | 39     | 35     | 33     | 28     | 28     | 27     | 28     | 27     | 27     | 26     | 27     | 26     | 26     | 25     |
| 60+                  | 47     | 44     | 40     | 38     | 36     | 33     | 30     | 29     | 26     | 24     | 21     | 18     | 18     | 16     | 16     | 16     | 17     | 16     | 15     | 14     |
| All men              | 52     | 51     | 46     | 45     | 42     | 38     | 36     | 35     | 33     | 31     | 29     | 28     | 29     | 28     | 29     | 28     | 27     | 28     | 26     | 25     |
| Unweighted base      | 10,351 | 9,852  | 10,888 | 10,480 | 10,454 | 9,199  | 8,417  | 8,874  | 8,673  | 8,106  | 8,417  | 7,642  | 7,172  | 6,579  | 6,593  | 7,055  | 6,837  | 8,097  | 6,868  | 10,038 |
| Weighted base (000s) |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 20,350 | 19,913 | 19,561 | 19,187 | 19,561 | 19,496 |
| <b>WOMEN</b>         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 16-19                | 39     | 38     | 34     | 33     | 32     | 30     | 32     | 30     | 28     | 32     | 25     | 27     | 32     | 31     | 28     | 31     | 29     | 25     | 25     | 26     |
| 20-24                | 48     | 44     | 45     | 43     | 40     | 40     | 36     | 38     | 37     | 39     | 37     | 38     | 36     | 39     | 35     | 35     | 38     | 34     | 29     | 30     |
| 25-34                | 49     | 46     | 43     | 42     | 44     | 37     | 36     | 35     | 35     | 34     | 34     | 30     | 34     | 33     | 32     | 31     | 33     | 31     | 28     | 29     |
| 35-49                | 48     | 49     | 45     | 43     | 43     | 38     | 36     | 34     | 35     | 33     | 30     | 28     | 30     | 28     | 27     | 28     | 27     | 28     | 28     | 26     |
| 50-59                | 47     | 48     | 46     | 42     | 44     | 40     | 39     | 35     | 34     | 29     | 29     | 26     | 26     | 27     | 28     | 25     | 24     | 23     | 22     | 23     |
| 60+                  | 25     | 26     | 24     | 24     | 24     | 23     | 23     | 22     | 21     | 20     | 19     | 17     | 19     | 16     | 15     | 17     | 14     | 14     | 14     | 13     |
| All women            | 41     | 41     | 38     | 37     | 37     | 33     | 32     | 31     | 30     | 29     | 28     | 26     | 28     | 26     | 25     | 26     | 25     | 24     | 23     | 23     |
| Unweighted base      | 12,143 | 11,480 | 12,554 | 12,156 | 12,100 | 10,641 | 9,788  | 10,304 | 10,122 | 9,445  | 9,764  | 9,108  | 8,501  | 7,830  | 7,496  | 8,299  | 7,951  | 9,327  | 8,029  | 11,627 |
| Weighted base (000s) |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 22,044 | 21,987 | 22,236 | 21,842 | 22,396 | 22,315 |
| <b>TOTAL</b>         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 16-19                | 41     | 40     | 37     | 34     | 32     | 30     | 31     | 30     | 28     | 30     | 27     | 27     | 29     | 31     | 29     | 28     | 25     | 26     | 24     | 24     |
| 20-24                | 51     | 48     | 46     | 44     | 42     | 40     | 38     | 39     | 37     | 38     | 38     | 39     | 39     | 40     | 35     | 37     | 38     | 36     | 32     | 32     |
| 25-34                | 52     | 51     | 46     | 45     | 45     | 38     | 38     | 36     | 36     | 35     | 34     | 32     | 36     | 35     | 35     | 34     | 34     | 34     | 31     | 31     |
| 35-49                | 51     | 52     | 47     | 45     | 44     | 39     | 37     | 36     | 36     | 34     | 31     | 30     | 30     | 30     | 29     | 29     | 28     | 30     | 29     | 27     |
| 50-59                | 50     | 51     | 47     | 45     | 45     | 41     | 39     | 35     | 33     | 29     | 29     | 27     | 27     | 27     | 27     | 26     | 26     | 25     | 24     | 24     |
| 60+                  | 34     | 34     | 31     | 30     | 29     | 27     | 26     | 25     | 23     | 21     | 20     | 17     | 18     | 16     | 16     | 17     | 15     | 15     | 14     | 14     |
| All adults           | 46     | 45     | 42     | 40     | 39     | 35     | 34     | 33     | 32     | 30     | 28     | 27     | 28     | 27     | 27     | 27     | 26     | 26     | 25     | 24     |
| Unweighted base      | 22,494 | 21,332 | 23,442 | 22,636 | 22,554 | 19,840 | 18,205 | 19,178 | 18,795 | 17,551 | 18,181 | 16,750 | 15,673 | 14,409 | 14,089 | 15,354 | 14,788 | 17,424 | 14,897 | 21,665 |
| Weighted base (000s) |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 42,394 | 41,899 | 41,798 | 41,029 | 41,957 | 41,811 |

Notes: From 2000 data are weighted for non-response. Pre-2000 data are unweighted. The effect of weighting on smoking data appears slight: it increased the overall prevalence of smoking in 2000 by one percentage point, from 26% to 27%.  
From 2000, the weighted base is the base for percentages. For 1972-1998, the unweighted sample is the base for percentages.

Source: Office for National Statistics (2006) Results from the 2005 General Household Survey ([www.ons.gov.uk/ghs](http://www.ons.gov.uk/ghs)) and previous years.

Figure 4.3a Prevalence of cigarette smoking by sex and age, 2005, Great Britain

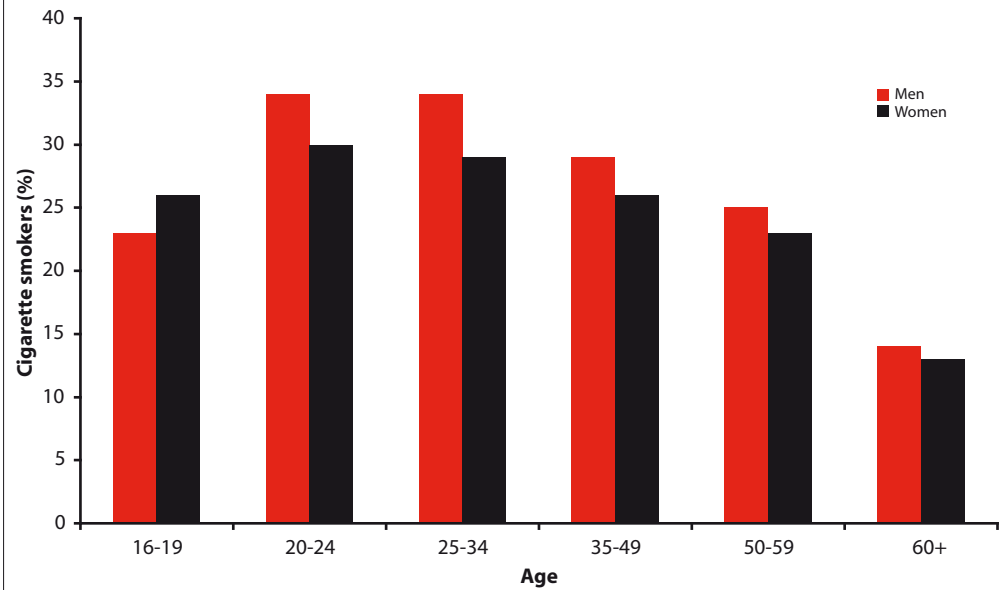


Figure 4.3b Prevalence of cigarette smoking by sex, 1972 to 2005, Great Britain

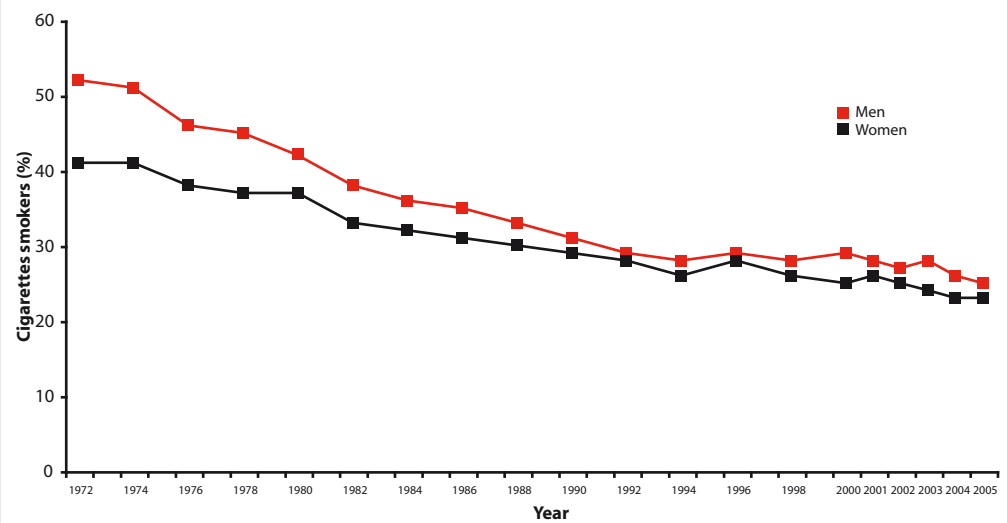


**Table 4.4** Regular cigarette smoking by sex, in young people aged 11 to 15, 1982 to 2006, England, Scotland, Wales and Northern Ireland

|                  | 1982 | 1983 | 1984 | 1986 | 1988 | 1990 | 1992 | 1994 | 1996 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| %                | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    |
| <b>BOYS</b>      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| England          | 11   |      | 13   | 7    | 7    | 9    | 9    | 10   | 11   | 9    | 8    | 9    | 8    | 9    | 7    | 7    | 7    | 7    |
| Wales            |      |      |      | 9    | 8    | 8    | 10   | 8    | 12   | 10   |      | 10   |      | 8    |      | 9    |      |      |
| Scotland         | 15   |      | 16   | 10   |      | 11   | 10   | 11   | 14   | 11   |      | 10   |      | 11   |      | 9    |      |      |
| Northern Ireland |      | 14   |      | 13   |      | 12   |      |      |      |      |      | 8    |      |      |      |      |      |      |
| <b>GIRLS</b>     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| England          | 11   |      | 13   | 12   | 9    | 11   | 10   | 13   | 15   | 12   | 10   | 12   | 11   | 11   | 11   | 10   | 10   | 10   |
| Wales            |      |      |      | 12   | 11   | 12   | 13   | 13   | 16   | 17   |      | 16   |      | 14   |      | 13   |      |      |
| Scotland         | 14   |      | 17   | 14   |      | 12   | 13   | 13   | 14   | 13   |      | 16   |      | 16   |      | 16   |      |      |
| Northern Ireland |      | 12   |      | 9    |      | 13   |      |      |      |      |      | 10   |      |      |      |      |      |      |

Notes: In Scotland, rates are for children aged 12-15 up to 1999, and aged 13-15 from 2000.

Sources: Department of Health (2007) Smoking, drinking and drug use among young people in England in 2006: Headline Figures. See <http://www.ic.nhs.uk/pubs/smokedrinkdrug06/report/file>

Welsh Assembly Government "Healthschool" website (2003) [www.healthschool.org.uk/smoking/smoking\\_data.htm](http://www.healthschool.org.uk/smoking/smoking_data.htm)

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National Centre for Social Research and the National Foundation for Educational Research (2001). Smoking, drinking & drug use among young people in Scotland in 2000. The Stationery Office: Edinburgh.

Child and Adolescent Health Research Unit, The University of Edinburgh, (2004) The Scottish Adolescent Lifestyle and Substance Use Surveys (Salsus) 2002 and 2004. The Stationery Office: Edinburgh (and previous editions).

Department of Health and Social Security Northern Ireland (1991) Smoking and Drinking Amongst 11-15 year olds in Northern Ireland in 1990. DHSS NI: Belfast.

Northern Ireland Statistics and Research Agency (2002) Young Person's Behaviour and Attitudes Survey. See [www.csu.nisra.gov.uk/archive/surveys/yphasresults/yphas%20bulletin.pdf](http://www.csu.nisra.gov.uk/archive/surveys/yphasresults/yphas%20bulletin.pdf)

**Table 4.5** *Average daily cigarette consumption per smoker by sex and age, 1974 to 2005, Great Britain*

|                  | 1974      | 1978      | 1982      | 1986      | 1988      | 1990      | 1992      | 1994      | 1996      | 1998      | 2000      | 2001      | 2002      | 2003      | 2004      | 2005      | Weighted<br>base 2005<br>(000s) | Unweighted<br>base 2005 |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------------|-------------------------|
| <b>MEN</b>       |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |                                 |                         |
| 16-19            | 16        | 14        | 12        | 12        | 12        | 13        | 12        | 10        | 12        | 10        | 12        | 11        | 11        | 13        | 11        | 13        | 253                             | 113                     |
| 20-24            | 19        | 17        | 16        | 15        | 16        | 16        | 13        | 13        | 14        | 14        | 12        | 12        | 12        | 12        | 11        | 11        | 468                             | 201                     |
| 25-34            | 19        | 19        | 17        | 16        | 17        | 16        | 14        | 15        | 15        | 13        | 13        | 13        | 13        | 13        | 12        | 12        | 1,081                           | 520                     |
| 35-49            | 20        | 20        | 20        | 19        | 19        | 19        | 19        | 18        | 18        | 17        | 17        | 17        | 17        | 16        | 16        | 15        | 1,541                           | 752                     |
| 50-59            | 18        | 20        | 18        | 17        | 19        | 17        | 18        | 20        | 17        | 18        | 17        | 18        | 18        | 18        | 18        | 17        | 829                             | 418                     |
| 60+              | 14        | 15        | 16        | 15        | 15        | 15        | 15        | 14        | 15        | 16        | 15        | 15        | 16        | 15        | 14        | 15        | 730                             | 392                     |
| <b>All men</b>   | <b>18</b> | <b>18</b> | <b>17</b> | <b>16</b> | <b>17</b> | <b>17</b> | <b>16</b> | <b>16</b> | <b>16</b> | <b>16</b> | <b>15</b> | <b>15</b> | <b>15</b> | <b>15</b> | <b>15</b> | <b>14</b> | <b>4,903</b>                    | <b>2,396</b>            |
| <b>WOMEN</b>     |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |                                 |                         |
| 16-19            | 12        | 13        | 11        | 11        | 11        | 11        | 10        | 10        | 10        | 10        | 10        | 12        | 12        | 10        | 11        | 10        | 272                             | 131                     |
| 20-24            | 14        | 14        | 14        | 12        | 14        | 13        | 13        | 13        | 11        | 12        | 10        | 11        | 10        | 11        | 11        | 11        | 490                             | 236                     |
| 25-34            | 15        | 16        | 16        | 14        | 15        | 15        | 14        | 14        | 13        | 12        | 12        | 12        | 12        | 12        | 12        | 11        | 1,032                           | 534                     |
| 35-49            | 15        | 16        | 15        | 16        | 16        | 15        | 16        | 15        | 16        | 15        | 14        | 15        | 15        | 14        | 14        | 14        | 1,583                           | 791                     |
| 50-59            | 13        | 14        | 14        | 14        | 15        | 15        | 15        | 15        | 16        | 15        | 15        | 15        | 15        | 15        | 15        | 15        | 830                             | 428                     |
| 60+              | 10        | 11        | 11        | 12        | 12        | 12        | 12        | 13        | 13        | 12        | 12        | 12        | 13        | 13        | 13        | 13        | 836                             | 451                     |
| <b>All women</b> | <b>13</b> | <b>14</b> | <b>14</b> | <b>14</b> | <b>14</b> | <b>14</b> | <b>14</b> | <b>14</b> | <b>14</b> | <b>13</b> | <b>13</b> | <b>13</b> | <b>13</b> | <b>13</b> | <b>13</b> | <b>13</b> | <b>5,044</b>                    | <b>2,571</b>            |

Notes: From 2000 data are weighted for non-response. Pre-2000 data are unweighted.

From 2000, the weighted base is the base for percentages. Up to 1998, the unweighted bases are the base for percentages. Unweighted bases for earlier years are of similar size to the unweighted sample and can be found in General Household Reports for each year.

2005 data includes last quarter of 2004/5 data due to survey change from financial year to calendar year.

Source: Office for National Statistics (2005) Results from the 2004 General Household Survey (www.ons.gov.uk/ghs) and previous years.

**Table 4.6** *Cigarette smoking by sex and country of United Kingdom, 1976 to 2005, and by Government Office Region 1998 to 2005, United Kingdom*

|                          | 1976 | 1978 | 1980 | 1982 | 1984 | 1986 | 1988 | 1990 | 1992 | 1994 | 1996 | 1998 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | Weighted<br>base 2005<br>(000s) | Unweighted<br>base 2005 |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------------|-------------------------|
| <b>MEN</b>               | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    | %    |                                 |                         |
| England                  | 45   | 44   | 42   | 37   | 35   | 34   | 32   | 31   | 29   | 28   | 28   | 29   | 29   | 28   | 27   | 27   | 26   | 25   | 16,834                          | 8,663                   |
| North East               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| North West               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| Yorkshire and the Humber |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| East Midlands            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| West Midlands            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| East of England          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| London                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| South East               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| South West               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| Wales                    | 46   | 44   | 45   | 36   | 42   | 33   | 35   | 30   | 32   | 28   | 28   | 29   | 25   | 27   | 27   | 29   | 24   | 24   | 956                             | 503                     |
| Scotland                 | 50   | 48   | 46   | 45   | 43   | 37   | 36   | 33   | 34   | 31   | 33   | 35   | 30   | 32   | 29   | 35   | 29   | 28   | 1,706                           | 872                     |
| Great Britain            | 46   | 45   | 42   | 38   | 36   | 35   | 33   | 31   | 29   | 28   | 29   | 30   | 29   | 28   | 27   | 28   | 26   | 25   | 19,496                          | 10,038                  |
| <b>WOMEN</b>             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| England                  | 37   | 36   | 36   | 32   | 32   | 31   | 30   | 28   | 27   | 25   | 27   | 26   | 25   | 25   | 25   | 24   | 23   | 22   | 19,102                          | 9,950                   |
| North East               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| North West               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| Yorkshire and the Humber |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| East Midlands            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| West Midlands            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| East of England          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| London                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| South East               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| South West               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |                         |
| Wales                    | 37   | 37   | 39   | 34   | 32   | 30   | 28   | 31   | 33   | 27   | 27   | 26   | 24   | 26   | 27   | 26   | 22   | 21   | 1,159                           | 609                     |
| Scotland                 | 43   | 42   | 42   | 39   | 35   | 35   | 37   | 35   | 34   | 29   | 31   | 29   | 30   | 30   | 28   | 28   | 22   | 25   | 2,054                           | 1,068                   |
| Great Britain            | 38   | 37   | 37   | 33   | 32   | 31   | 30   | 29   | 28   | 26   | 28   | 26   | 25   | 26   | 25   | 24   | 23   | 23   | 22,315                          | 11,627                  |

Notes: Men and women aged 16 and over.

From 1998 data are weighted. Pre 1998 data are unweighted. See source for details.

Source: Office for National Statistics (2006) Living in Britain: Results from the 2005 General Household Survey. The Stationery Office: London and previous editions.

|                  |      |         |        |        |        |         |         |         |         |                    |
|------------------|------|---------|--------|--------|--------|---------|---------|---------|---------|--------------------|
|                  | 1983 | 1990/01 | 1992/3 | 1994/5 | 1996/7 | 1998/99 | 2000/01 | 2002/03 | 2004/05 | Unweighted<br>base |
| Northern Ireland |      |         |        |        |        |         |         |         |         |                    |
| MEN              | 39   | 33      | 31     | 29     | 31     | 28      | 26      | 27      | 27      | 1,710              |
| WOMEN            | 29   | 31      | 29     | 27     | 27     | 29      | 28      | 26      | 25      | 2,328              |

Notes: Men and women aged 16 and over.

Source: Northern Ireland Statistics and Research Agency Central Survey Unit (2006) Continuous Household Survey 2004/05. See [www.csu.nisra.gov.uk/](http://www.csu.nisra.gov.uk/)

Fig 4.6a *Percentage of men smoking by region, 2003/05 United Kingdom*

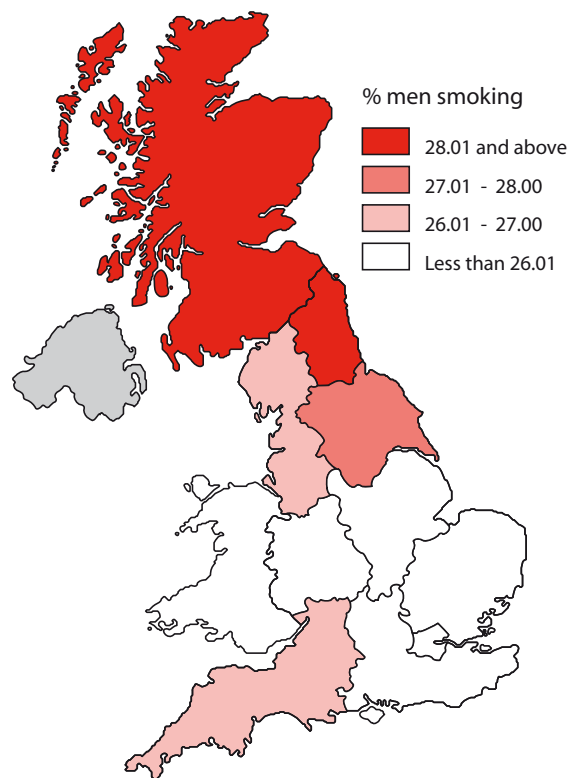


Fig 4.6b *Percentage of women smoking by region, 2003/05 United Kingdom*

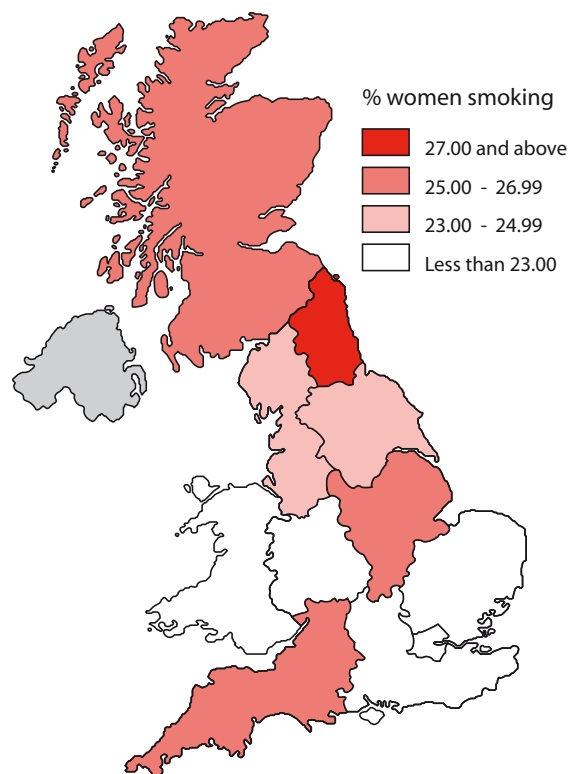


**Table 4.7 Cigarette smoking by sex and social class, 1992 to 2005, England**

|                         | <i>Unweighted</i> |      |      |      | <i>Weighted</i> |      |      |      |      |      |      |                      |                   |
|-------------------------|-------------------|------|------|------|-----------------|------|------|------|------|------|------|----------------------|-------------------|
|                         | 1992              | 1994 | 1996 | 1998 | 1998            | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | <i>Weighted base</i> | <i>Unweighted</i> |
|                         | %                 | %    | %    | %    | %               | %    | %    | %    | %    | %    | %    | <i>2005 (000s)</i>   | <i>base 2005</i>  |
| MEN                     |                   |      |      |      |                 |      |      |      |      |      |      |                      |                   |
| Total non-manual        | 22                | 21   | 21   | 21   | 22              | 24   | 22   | 21   | 22   | 22   | 19   | 8,777                | 4,646             |
| Total manual            | 35                | 34   | 35   | 34   | 35              | 34   | 34   | 32   | 33   | 31   | 31   | 6,962                | 3,533             |
| Ratio manual:non-manual | 1.59              | 1.62 | 1.67 | 1.62 | 1.59            | 1.42 | 1.55 | 1.52 | 1.50 | 1.41 | 1.63 |                      |                   |
| WOMEN                   |                   |      |      |      |                 |      |      |      |      |      |      |                      |                   |
| Total non-manual        | 23                | 21   | 22   | 21   | 22              | 22   | 20   | 20   | 20   | 19   | 18   | 10,140               | 5,380             |
| Total manual            | 30                | 30   | 33   | 31   | 31              | 29   | 31   | 30   | 29   | 28   | 28   | 6,878                | 3,535             |
| Ratio manual:non-manual | 1.30              | 1.43 | 1.50 | 1.48 | 1.41            | 1.32 | 1.55 | 1.50 | 1.45 | 1.47 | 1.56 |                      |                   |

Notes: Adults aged 16 and over

2005 data includes last quarter of 2004/05 data due to survey change from financial year to calendar year.

From 1998 data are weighted for non-response. Pre-1998 data are unweighted. This table shows weighted and unweighted figures for 1998 to give an indication of the effect of the weighting.

From 1998, the weighted base is the base for percentages. Up to 1996, the unweighted samples are the base for percentages. Unweighted samples for earlier years are of similar size to the unweighted sample and can be found in General Household Reports for each year.

Figures for 2001 to 2005 are based on the new NS-SEC classification recoded to produce manual or non-manual socio-economic group and should therefore be treated with caution.

For similar trend data for Great Britain 1972-2002, see [www.heartstats.org](http://www.heartstats.org)

Source: Office for National Statistics (2006) Results from the 2005 General Household Survey ([www.ons.gov.uk/ghs](http://www.ons.gov.uk/ghs)) and previous years.

**Figure 4.7 Cigarette smoking by sex and social class, 1992 to 2005, England**

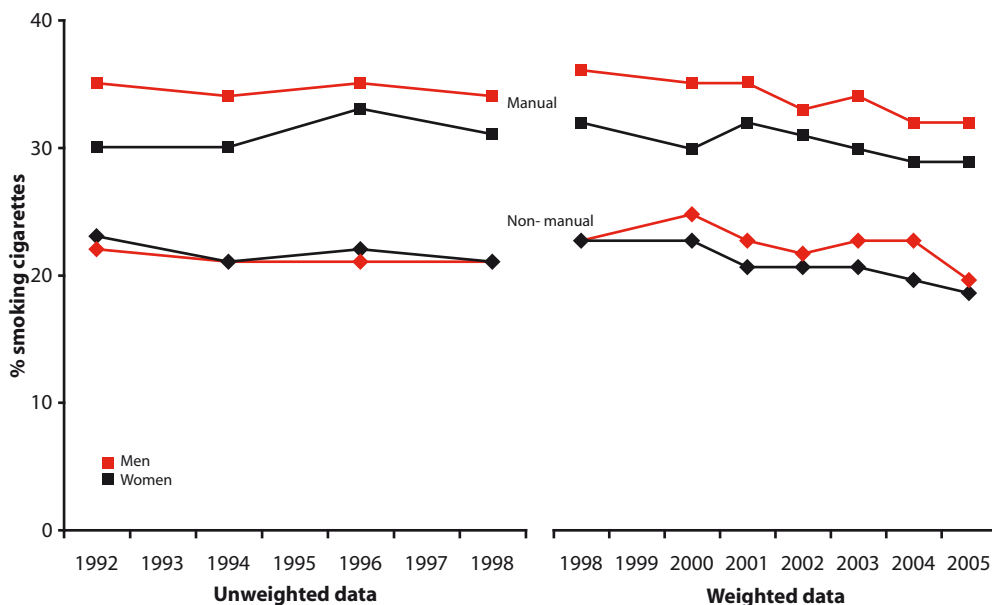


**Table 4.8** *Cigarette smoking by sex and socio-economic classification, 2005, Great Britain*

| <i>Socio-economic classification of the household reference person</i> | <b>Men</b><br>% | <b>Women</b><br>% | <b>All</b><br>% |
|------------------------------------------------------------------------|-----------------|-------------------|-----------------|
| <b>Managerial and professional</b>                                     | 18              | 16                | 17              |
| Large employers and higher managerial                                  | 16              | 14                | 15              |
| Higher professional                                                    | 14              | 10                | 12              |
| Lower managerial and professional                                      | 21              | 19                | 20              |
| <b>Intermediate</b>                                                    | 24              | 21                | 22              |
| Intermediate                                                           | 22              | 19                | 20              |
| Small employers and own account                                        | 26              | 24                | 25              |
| <b>Routine and manual</b>                                              | 33              | 30                | 31              |
| Lower supervisory and technical                                        | 28              | 28                | 28              |
| Semi routine                                                           | 35              | 29                | 31              |
| Routine                                                                | 34              | 32                | 33              |
| <b>Total</b>                                                           | 25              | 23                | 24              |
| <i>Weighted base (000s)</i>                                            | 19,496          | 22,315            | 41,811          |
| <i>Unweighted base</i>                                                 | 10,038          | 11,627            | 21,665          |

Notes: Adults aged 16 and over.

2005 data includes last quarter of 2004/05 data due to change from financial year to calendar year.

From April 2001 the National Statistics Socio-economic classification (NS-SEC) was introduced for all official statistics and surveys. It has replaced Social Class based on Occupation and Socio-economic Groups. Persons whose household reference person was a full-time student, had an inadequately described occupation, had never worked or was long term unemployed are not shown as separate categories but are included in the figure for all persons.

Source: Office for National Statistics (2006) Results from the 2005 General Household Survey ([www.ons.gov.uk/gbs](http://www.ons.gov.uk/gbs)) and previous years.

**Figure 4.8** *Cigarette smoking by sex and socio-economic classification, 2005, Great Britain*

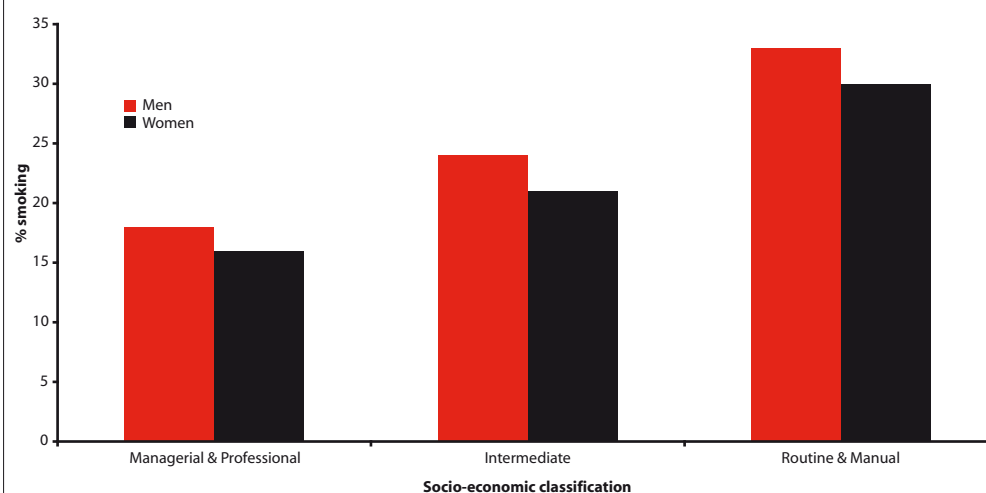


**Table 4.9** *Cigarette smoking by sex and ethnic group, 2004, England*

|                                  | General population | Black Caribbean | Black African | Indian | Pakistani | Bangladeshi | Chinese | Irish |
|----------------------------------|--------------------|-----------------|---------------|--------|-----------|-------------|---------|-------|
| <i>Current cigarette smokers</i> | %                  | %               | %             | %      | %         | %           | %       | %     |
| <b>MEN</b>                       | 24                 | 25              | 21            | 20     | 29        | 40          | 21      | 30    |
| <i>Base</i>                      | 45,652             | 472             | 366           | 899    | 412       | 172         | 150     | 1,773 |
| <b>WOMEN</b>                     | 23                 | 24              | 10            | 5      | 5         | 2           | 8       | 26    |
| <i>Base</i>                      | 48,357             | 658             | 464           | 1,061  | 490       | 197         | 162     | 2,362 |

Notes: Adults aged 16 and over.

Age-standardised percentages (standardised risk ratios x percentage in general population); see source for method of age-standardisation.

Source: Department of Health (2005) Health Survey for England 2004. The Health of Minority Ethnic Groups. <http://www.ic.nhs.uk/pubs/hlthsvyeng2004ethnic>

**Figure 4.9** *Cigarette smoking by sex and ethnic group, 2004, England*

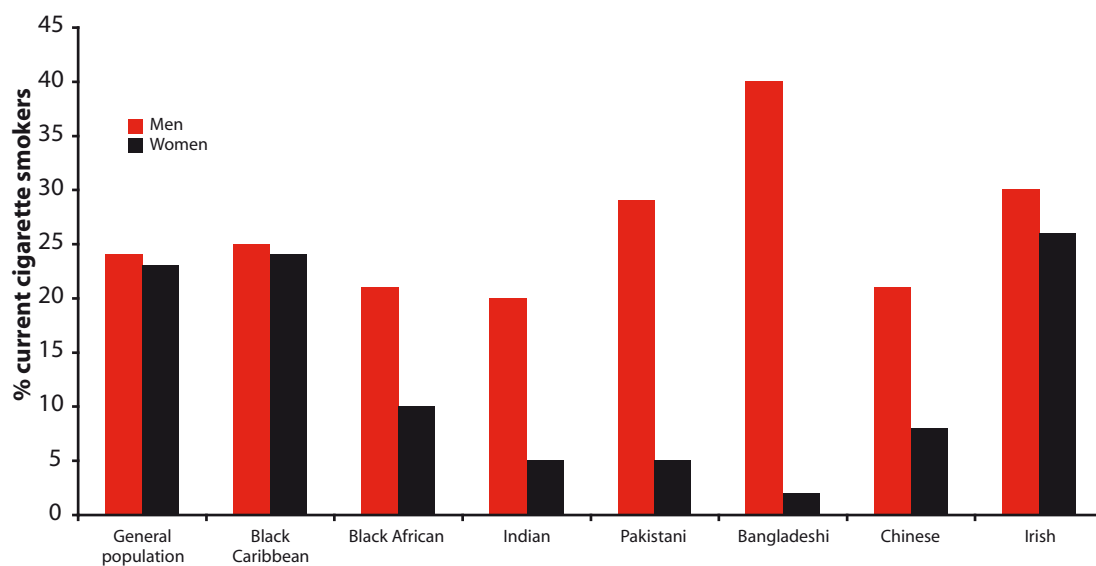


**Table 4.10** *Prevalence of smoking, latest available data, 1995 to 2004, all available countries, the World*

| Region                       | Country                    | Study year | Men % | Women % | Both % |
|------------------------------|----------------------------|------------|-------|---------|--------|
| African Region               | Algeria                    | 2003       | 32    | <1      | 13     |
|                              | Benin                      | 2001       |       | 3       |        |
|                              | Burundi                    | 1995       | 16    | 11      |        |
|                              | Cameroon                   | 2000       | 9     | 1       |        |
|                              | Congo                      | 2004       |       |         | 8      |
|                              | Eritrea                    | 2004       |       |         | 7      |
|                              | Ethiopia                   | 2003       | 6     | <1      |        |
|                              | Gambia                     | 1996/1997  | 39    | 4       |        |
|                              | Ghana                      | 2003       | 7     | 1       |        |
|                              | Kenya                      | 2004       | 21    | 1       |        |
|                              | Malawi                     | 2003       | 21    | 5       |        |
|                              | Mauritius                  | 2003       | 32    | 1       |        |
|                              | Nigeria                    | 2003       |       | 1       |        |
|                              | Rwanda                     | 2000       |       | 8       |        |
|                              | Sao Tome and Principe      | 1997       | 29    | 14      | 25     |
|                              | South Africa               | 2002/2003  | 23    | 8       |        |
|                              | Swaziland                  | 2003       | 11    | 3       |        |
|                              | Uganda                     | 2001/2002  | 25    | 3       |        |
|                              | United Rep. of Tanzania    | 1998/1999  | 23    | 1       |        |
|                              | Zambia                     | 2001/2002  | 26    | 3       |        |
|                              | Zimbabwe                   | 2003       | 20    | 2       |        |
| Region of the Americas       | Argentina                  | 2004       | 32    | 25      | 29     |
|                              | Bolivia                    | 1998       | 38    | 19      | 27     |
|                              | Brazil                     | 2003       | 22    | 14      |        |
|                              | Canada                     | 2003       | 19    | 16      | 18     |
|                              | Chile                      | 2003       | 48    | 37      | 42     |
|                              | Costa Rica                 | 2000       | 23    | 8       | 16     |
|                              | Cuba                       | 1995       | 48    | 26      | 37     |
|                              | Dominican Republic         | 2003       | 16    | 11      |        |
|                              | Guatemala                  | 2000       | 21    | 2       |        |
|                              | Haiti                      | 2000       | 16    | 4       |        |
|                              | Jamaica                    | 1994/1995  | 38    | 12      | 23     |
|                              | Mexico                     | 2002/2003  | 13    | 5       |        |
|                              | Nicaragua                  | 2001       |       | 5       |        |
|                              | Paraguay                   | 2003       | 23    | 7       |        |
|                              | Peru                       | 2002/2003  | 53    | 24      | 38     |
|                              | USA                        | 2002/2003  | 20    | 16      | 18     |
|                              | Uruguay                    | 2003       | 35    | 24      |        |
|                              | Venezuela                  | 1997       | 28    | 24      | 26     |
| Eastern Mediterranean Region | Bahrain                    | 2001       | 15    | 3       | 10     |
|                              | Egypt                      | 2000       |       | <1      |        |
|                              | Iran (Islamic Republic of) | 1999/2000  | 22    | 2       | 11     |
|                              | Jordan                     | 2002       | 51    | 8       | 30     |
|                              | Kuwait                     | 1996       | 34    | 2       | 17     |
|                              | Lebanon                    | 1998/2002  | 61    | 57      | 59     |
|                              | Morocco                    | 2003       | 29    | <1      |        |
|                              | Oman                       | 1995       | 16    | 2       |        |
|                              | Saudi Arabia               | 1995/2000  | 19    | 7       | 13     |
|                              | Syrian Arabic Republic     | 2000       |       | 8       |        |
|                              | Tunisia                    | 2003       | 50    | 2       |        |
|                              | United Arab Emirates       | 2003       | 17    | 1       | 9      |
| European Region              | Albania                    | 2002       | 46    | 3       |        |
|                              | Andorra                    | 1997       | 44    | 28      | 36     |
|                              | Armenia                    | 2001       | 62    | 2       |        |
|                              | Austria                    | 1999       | 34    | 24      |        |
|                              | Azerbaijan                 | 2001       |       | 1       |        |
|                              | Belarus                    | 2001       | 56    | 12      |        |
|                              | Belgium                    | 2001       | 28    | 20      | 24     |
|                              | Bosnia & Herzegovina       | 2002       | 49    | 30      | 38     |
|                              | Bulgaria                   | 1997       | 38    | 17      |        |
|                              | Croatia                    | 2003       | 31    | 20      |        |
|                              | Cyprus                     | 1997       |       |         | 37     |
|                              | Czech Republic             | 2003       | 32    | 23      | 27     |
|                              | Denmark                    | 2003       |       |         | 28     |
|                              | Estonia                    | 2002       | 45    | 18      | 29     |

| Region                        | Country                      | Study year | Men<br>% | Women<br>% | Both<br>% |
|-------------------------------|------------------------------|------------|----------|------------|-----------|
|                               | Finland                      | 2003       | 26       | 19         | 22        |
|                               | France                       | 2000       | 33       | 21         | 27        |
|                               | Georgia                      | 2003       | 46       | 4          |           |
|                               | Germany                      | 2000       | 32       | 27         |           |
|                               | Greece                       | 2001/2002  | 47       | 40         |           |
|                               | Hungary                      | 2003       | 36       | 27         |           |
|                               | Iceland                      | 2003       |          |            | 22        |
|                               | Ireland                      | 2002       |          |            | 27        |
|                               | Israel                       | 2003       |          |            | 24        |
|                               | Italy                        | 2002       | 31       | 22         | 27        |
|                               | Kazakhstan                   | 2001       | 65       | 9          |           |
|                               | Kyrgyzstan                   | 2001       | 51       | 5          |           |
|                               | Latvia                       | 2002       | 51       | 19         | 33        |
|                               | Lithuania                    | 2002       | 44       | 13         | 27        |
|                               | Luxembourg                   | 2003       |          |            | 33        |
|                               | Macedonia, FYR               | 1999       |          |            | 36        |
|                               | Malta                        | 2002       | 30       | 6          | 23        |
|                               | Netherlands                  | 2001       | 32       | 25         | 29        |
|                               | Norway                       | 2004       | 27       | 25         | 26        |
|                               | Poland                       | 2002       |          |            | 32        |
|                               | Portugal                     | 1999       | 29       | 8          | 21        |
|                               | Republic of Moldova          | 2002       | 36       | 2          | 17        |
|                               | Romania                      | 2003       | 33       | 10         | 21        |
|                               | Russian Federation           | 2003       | 41       | 7          |           |
|                               | Serbia & Montenegro          | 2000       |          |            | 40        |
|                               | Slovakia                     | 2002       | 36       | 20         |           |
|                               | Slovenia                     | 2001       | 28       | 20         | 24        |
|                               | Spain                        | 2001       | 39       | 25         |           |
|                               | Sweden                       | 2002/2003  | 17       | 19         |           |
|                               | Switzerland                  | 2002       | 34       | 25         | 31        |
|                               | Turkey                       | 2003       | 47       | 15         |           |
|                               | Ukraine                      | 2001       | 53       | 11         |           |
|                               | UK                           | 2003       | 27       | 24         |           |
|                               | Uzbekistan                   | 2002       | 24       | 1          |           |
| <b>South-East Asia Region</b> | Bangladesh                   | 2003       | 55       | 27         |           |
|                               | India                        | 2003       | 47       | 17         |           |
|                               | Indonesia                    | 2003       | 32       | 4          | 17        |
|                               | Maldives                     | 2001       | 37       | 16         |           |
|                               | Myanmar                      | 2003       | 36       | 12         |           |
|                               | Nepal                        | 2003       | 49       | 24         |           |
|                               | Sri Lanka                    | 2003       | 23       | 2          |           |
|                               | Thailand                     | 2001       | 49       | 3          | 26        |
| <b>Western Pacific Region</b> | Australia                    | 2001       | 25       | 20         | 22        |
|                               | Brunei Darussalam            | 1997       |          |            | 20        |
|                               | China                        | 2002       | 46       | 2          |           |
|                               | Fiji                         | 2002       | 26       | 4          |           |
|                               | Japan                        | 2003       | 47       | 15         |           |
|                               | Kiribati                     | 1999       | 57       | 32         | 42        |
|                               | Lao People's Democratic Rep. | 2003       | 59       | 13         |           |
|                               | Malaysia                     | 2003       | 43       | 2          |           |
|                               | Mongolia                     | 1999       | 52       | 8          |           |
|                               | New Zealand                  | 2002/2004  | 24       | 22         | 23        |
|                               | Niue                         | 2002       | 38       | 15         |           |
|                               | Philippines                  | 2003       | 41       | 8          |           |
|                               | Republic of Korea            | 1999       | 65       | 4          |           |
|                               | Samoa                        | 1995       | 60       | 24         |           |
|                               | Singapore                    | 2001       | 24       | 4          | 14        |
|                               | Tonga                        | 1998/2000  | 53       | 11         |           |
|                               | Vanuatu                      | 1998       | 49       | 5          | 27        |
|                               | Vietnam                      | 2002/2003  | 35       | 2          |           |

Notes: Adults: ages vary between countries, see source for details

Smokers defined: smoker, current smoker, current daily smoker or regular smoker

Source: World Health Organization (2005) *European Health for All* statistical database. <http://www.who.dk.hfadbf>;

World Health Organization (2005) *The Surf Report 2. Surveillance of chronic disease Risk Factors - Country-level data and comparable estimates.*

Figure 4.10a Prevalence of smoking, men, latest available data, 1995-2004, the World

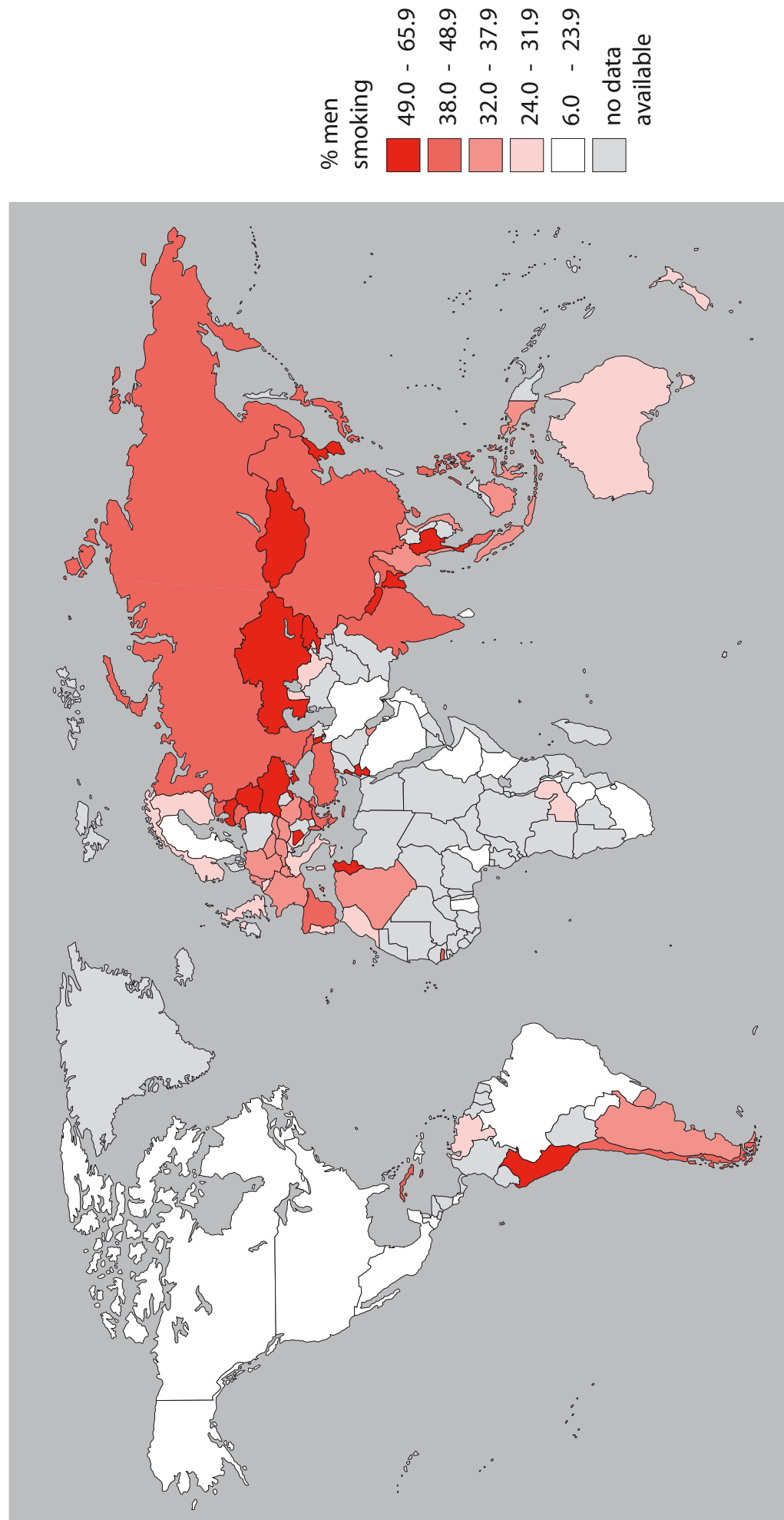


Figure 4.10b Prevalence of smoking, women, latest available data, 1995-2004, the World

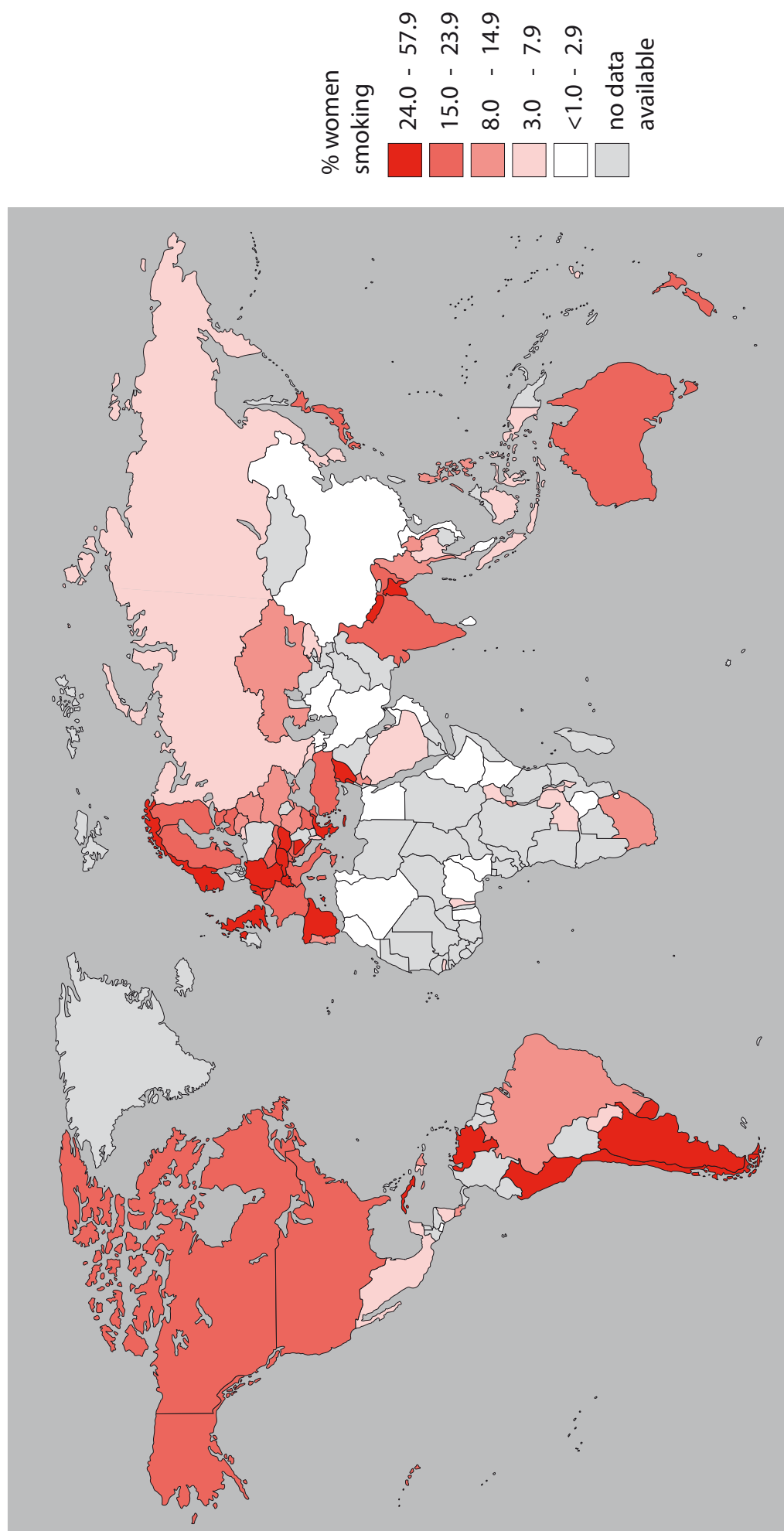


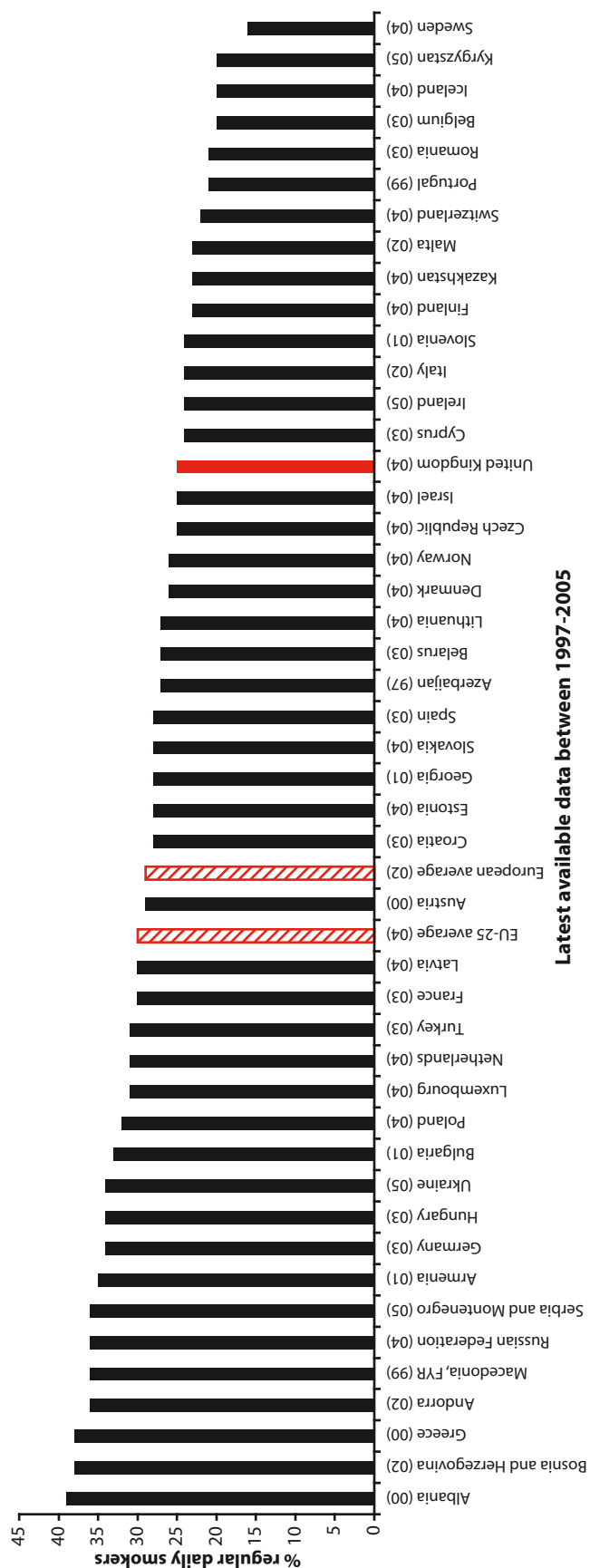
*Table 4.11 Percentage regular daily smokers by country, adults aged 15 and over, 1995 to 2005, selected European countries*

| Countries              | 1995<br>% | 1996<br>% | 1997<br>% | 1998<br>% | 1999<br>% | 2000<br>% | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Albania                |           |           |           |           |           | 39        |           |           |           |           |           |
| Andorra                |           |           | 36        |           |           |           |           | 36        |           |           |           |
| Armenia                |           |           |           | 29        |           |           | 35        |           |           |           |           |
| Austria                | 24        |           | 24        |           |           | 29        |           |           |           |           |           |
| Azerbaijan             |           |           | 27        |           |           |           |           |           |           |           |           |
| Belarus                | 28        | 28        | 26        | 27        | 26        | 27        | 26        | 27        | 27        |           |           |
| Belgium                | 28        | 30        | 26        | 27        | 29        | 30        | 28        | 27        | 20        |           |           |
| Bosnia and Herzegovina |           |           |           |           |           |           |           | 38        |           |           |           |
| Bulgaria               | 34        | 36        |           |           |           |           | 33        |           |           |           |           |
| Croatia                | 33        |           |           |           |           | 30        |           |           | 28        |           |           |
| Cyprus                 |           |           | 37        |           |           |           |           |           | 24        |           |           |
| Czech Republic         |           | 26        |           |           | 24        | 29        | 23        | 24        | 27        | 25        |           |
| Denmark                | 36        | 34        | 33        | 33        | 31        | 31        | 30        | 28        | 28        | 26        |           |
| Estonia                |           | 33        |           | 29        |           | 29        |           | 29        |           | 28        |           |
| Finland                | 24        | 22        | 24        | 25        | 23        | 23        | 24        | 23        | 22        | 23        |           |
| France                 |           | 28        |           |           |           | 27        |           | 26        | 30        |           |           |
| Georgia                |           |           |           | 33        |           |           | 28        |           |           |           |           |
| Germany                |           |           | 37        |           |           | 36        |           |           | 34        |           |           |
| Greece                 | 39        |           |           |           |           | 38        |           |           |           |           |           |
| Hungary                | 37        |           |           |           | 33        | 33        |           |           | 34        |           |           |
| Iceland                | 27        | 28        | 27        | 25        | 25        | 23        | 24        | 22        | 22        | 20        |           |
| Ireland                | 29        |           |           | 31        |           |           |           | 27        |           | 24        | 24        |
| Israel                 | 28        | 29        | 28        | 29        |           | 27        |           | 24        | 24        | 25        |           |
| Italy                  | 26        | 26        | 25        | 25        | 25        | 24        | 24        | 24        |           |           |           |
| Kazakhstan             |           | 33        |           |           |           | 28        | 24        |           |           | 23        |           |
| Kyrgyzstan             |           |           | 32        |           | 30        |           | 25        |           |           | 20        | 20        |
| Latvia                 |           |           |           | 36        | 29        |           |           | 33        |           | 30        |           |
| Lithuania              |           | 28        |           | 28        |           | 32        |           | 28        |           | 27        |           |
| Luxembourg             | 28        |           |           | 32        |           | 30        |           | 30        | 33        | 31        |           |
| Macedonia, FYR         |           |           |           |           | 36        |           |           |           |           |           |           |
| Malta                  | 24        |           |           |           |           |           |           | 23        |           |           |           |
| Netherlands            | 36        | 36        | 36        | 35        | 34        | 32        | 35        | 34        | 32        | 31        |           |
| Norway                 | 33        | 33        | 33        | 33        | 32        | 31        | 30        | 29        | 26        | 26        |           |
| Poland                 |           | 34        |           |           |           | 33        |           | 32        |           | 32        |           |
| Portugal               |           | 20        |           |           | 21        |           |           |           |           |           |           |
| Republic of Moldova    |           |           |           |           |           | 19        | 18        | 17        | 16        | 15        |           |
| Romania                |           |           |           |           |           | 21        |           |           | 21        |           |           |
| Russian Federation     |           |           |           | 36        |           | 35        | 35        |           |           | 36        |           |
| Serbia and Montenegro  |           |           |           |           |           | 40        |           |           |           | 36        | 36        |
| Slovakia               |           |           |           | 32        |           |           |           |           |           | 28        |           |
| Slovenia               |           | 26        |           |           | 25        |           | 24        |           |           |           |           |
| Spain                  | 34        |           | 33        |           |           |           | 32        |           | 28        |           |           |
| Sweden                 | 23        | 22        | 19        | 19        | 19        | 19        | 19        | 18        | 18        | 16        |           |
| Switzerland            |           |           | 33        |           |           |           | 24        | 32        |           | 22        |           |
| Turkey                 |           |           |           |           |           |           |           |           | 31        |           |           |
| Ukraine                | 35        |           |           |           |           | 34        |           |           |           | 26        | 36        |
| United Kingdom         | 27        | 28        |           | 27        |           | 27        | 27        | 26        | 26        | 25        |           |
| Uzbekistan             |           |           |           |           |           |           |           | 13        |           |           |           |
| European average       | 31        | 31        | 30        | 30        | 30        | 30        | 30        | 29        |           |           |           |
| EU-25 average          | 30        | 31        | 30        | 30        | 30        | 32        | 31        | 30        | 31        | 30        |           |

Source: World Health Organization (2006) European Health for All statistical database. <http://www.euro.who.int/hfad>.

Office for National Statistics (2005) Living in Britain. Results from the 2004 General Household Survey. The Stationery Office: London.

Figure 4.11 Percentage regular daily smokers by country, adults aged 15 years and over, latest year between 1997 and 2005, selected European countries



# 5. Diet

It is now universally recognised that a diet which is high in fat, particularly saturated fat, sodium and sugar and which is low in complex carbohydrates, fruit and vegetables increases the risk of chronic diseases – particularly cardiovascular disease (CVD) and cancer. These risks are outlined in the World Health Organization 2003 report *Diet, nutrition and the prevention of chronic diseases*<sup>1</sup>. The more recent World Health Organization *Global strategy on diet, physical activity and health* emphasised further the need to improve diets in individuals and populations across the world<sup>2</sup>.

The dietary changes which would help to reduce rates of coronary heart disease (CHD) in the UK population were detailed in the 1994 report of the Government's Committee on the Medical Aspects of Food and Nutrition Policy (COMA)<sup>3</sup>. This recommended a reduction in fat intake, particularly saturated fat intake, a reduction in sodium intake and an increase in fruit and vegetable and complex carbohydrate intake. In the 2003 report *Salt and Health*, the Scientific Advisory Committee on Nutrition (SACN) (which replaced COMA in 2000) repeated COMA's guidance on salt intake in adults and introduced additional guidance on reducing salt intake in children<sup>4</sup>. In 2005 the Government dietary objectives were reiterated in *Choosing a Better Diet: a food and health action plan*<sup>5</sup>.

Research from the World Health Organization and others highlight the specific importance of low fruit and vegetable consumption as a cause of CHD. The World Health Report 2002 estimated that around 4% of all disease burden in developed countries was caused by low fruit and vegetable consumption, and that just under 30% of CHD and almost 20% of stroke in developed countries was due to fruit and vegetable consumption levels below 600g/day<sup>6</sup>. The World Health Organization has yet to calculate the precise proportion of the disease burden due to high sodium intake or high saturated fat intake.

## *Public health targets*

There are a number of public health targets and objectives for healthy diets in England, Wales and Scotland, but none have been set for Northern Ireland (Table 5.1). Progress towards the targets for saturated fat, total fat, sugar, fibre and fruit and vegetable consumption has been limited (Table 5.2 and Figures 5.2a and 5.2b).

## *Overall levels of consumption – sex and age differences*

Levels of consumption of food and nutrients are fairly difficult to assess. The National Diet and Nutrition Survey (NDNS) provides data on food and nutrient consumption collected using a seven-day food diary. The 2000/01 NDNS suggested that the percentage of food energy derived from fat was around 36% in men and 35% in women compared with COMA's recommendation of 35%, and from saturated fat it was just over 13% for both men and women (compared with the recommendation of 11%). In 2000/01 the NDNS reported that, on average, both men and women consumed fewer than three portions of fruit and vegetables a day – 2.7 for men and 2.9 for women (Table 5.3).

Overall, just 13% of men and 15% of women consumed the recommended five or more portions of fruit and vegetables a day. These proportions increased with age: none of the men and just 4% of the women aged 19 to 24 years surveyed in the NDNS consumed five or more portions of fruit and vegetables, compared with 24% of men and 22% of women aged 50 to 64 years<sup>7</sup>.

The NDNS used 24-hour urine collections to determine salt intake. Data from 2000/01 suggest that the average daily salt intake for men was 11.0g and for women 8.1g, both exceeding the SACN target of no more than 6g a day (Table 5.3 and Figure 5.3).

## *Temporal trends*

Data from the National Food Survey (up to 2000) and the more recent Expenditure and Food Survey (2001/02 onwards) allow us to look at general trends in the British diet over time.

The percentage of total energy derived from total fat in the British diet is decreasing, but only gradually, from around 40% in 1975 to just less than 37% in 2004/05. The type of fat eaten has changed more significantly. The proportion of total energy derived from saturated fat fell from around 19% in 1975 to just less than 15% in 2004/05. Consumption of both non-milk extrinsic sugars (NME sugars)<sup>8</sup> and fibre has not changed markedly in the last ten years (Table 5.2 and Figure 5.2a).

The trends in fat consumption are associated with changes in food purchasing patterns. Since the 1970s there have been falls in the consumption of many different types of foods with a relatively high total fat and saturated fat content, including whole milk and butter. There have also been increases in the consumption of foods which are relatively low in total fat and/or saturated fat such as reduced fat milks and spreads (Table 5.4 and Figures 5.4a and 5.4b).

Data from the Expenditure and Food Survey show that between 1975 and 2004/05 the combined consumption of fruit and vegetables rose only slightly<sup>9</sup>. Data from the National Food Survey and the Expenditure and Food Survey suggest that the total consumption of fresh fruit had increased around fourfold since the early 1940s, but total consumption of fresh vegetables had declined (Table 5.4 and Figure 5.4c).

Trends in the consumption of salt are harder to assess than for other nutrients. Data from the National Food Survey suggest that the consumption of salt added to cooking and at the table has declined considerably over the last half century. However, this does not mean that total salt intake has declined because around 75% of dietary salt in the UK is obtained from manufactured foods<sup>10</sup>, and the reliance on some such foods – particularly convenience foods that are often high in salt – has increased in recent years. Between 1986 and 2001 the National Diet and Nutrition Survey shows that there has been an increase in the average salt consumption of men (up by 9% from 10.1g to 11.0g) and women (up by 5% from 7.7g to 8.1g) (Table 5.5).

## *Children and young people*

The 2005 Health Survey for England assessed fruit and vegetable consumption in children aged 5 to 15 years. Overall, only 17% of both boys and girls reported eating the recommended five portions of fruit and vegetables daily. There was very little change in the amount of fruit and vegetables consumed by children between 2001 and 2004, but results for 2005 seem more promising (Table 5.6).

In the UK school meals contribute significantly to the diets of children. Primary and secondary school meals in England were recently compared with the Caroline Walker Trust guidelines for healthy school meals<sup>11</sup>. Primary schools meals were found to be broadly in line with the guidelines. In secondary schools, however, the average nutritional content of the consumed meals failed to meet the guidelines for fat, saturated fat, non-milk extrinsic sugars and fibre (Table 5.7).

### *National and regional differences*

The 2004/05 Expenditure and Food Survey shows that people in Northern Ireland, Scotland, Wales and the North of England consumed less fruit and vegetables than those in the South East, South West, East or London. For example, people living in the South West consumed nearly 50% more fruit and vegetables (excluding potatoes) than people living in Northern Ireland. The consumption of table salt varied widely in the UK. Within England salt consumption appeared to be lower in London than in other regions. There appeared to be no regional differences in total fat, saturated fat and non-milk extrinsic sugars consumption (Table 5.8).

### *Socio-economic differences*

The 2004/05 Expenditure and Food Survey suggests that while there was little difference in the fat and saturated fat intake of different socio-economic groups, more fruit and vegetables were consumed in higher socio-economic groups (Table 5.9). Similar patterns for fat and fruit and vegetable consumption were shown for income quintiles; people in the highest income quintile consumed 15% more fruit and vegetables than those in the lowest income quintile (Table 5.10).

### *Ethnic differences*

The 2004/05 Expenditure and Food Survey shows considerable variation in nutritional intake for different ethnic groups in the UK. The percentage of food energy derived from total fat was lower in Chinese people than in any other ethnic group. Intake of saturated fat in Asian, Black and Chinese people was much lower than for White people (under 12% of food energy, compared to 15%). Vegetable consumption was highest among Asian and Chinese populations while fruit consumption was highest among Mixed and Black/British populations. Salt consumption was below the target of 6g/day for all ethnic groups except the White population. The consumption of non-milk extrinsic sugars was lowest in the Asian and Chinese ethnic groups (Table 5.11).

### *International differences*

Data for 2003 from the World Health Organization show that the proportion of energy available from fat varied across European countries from 14% in Azerbaijan to 42% in France. The proportion of energy available from fat in UK diets (just over 35%) was lower than the EU-25 average of 37% but markedly higher than the European average of 32% (Table 5.12 and Figure 5.12a).

The availability<sup>12</sup> of fruit and vegetables was generally higher in Southern European countries than Northern, Western, Central and Eastern European countries (Table 5.12 and Figure 5.12b).

There are no comparable international data for saturated fat and salt intakes.

1. World Health Organization (2003) *Diet, Nutrition and the prevention of chronic diseases. Report of a Joint AHO/FAO Expert Consultation.* World Health Organization: Geneva.
2. World Health Organization (2004) *Global strategy on diet and physical activity.* World Health Organization: Geneva.
3. Department of Health (1994) *Nutritional Aspects of Cardiovascular Disease. Report of the Cardiovascular Review Group of the Committee on Medical Aspects of Food Policy.* HMSO: London.
4. Scientific Advisory Committee on Nutrition (2003) *Salt and Health.* The Stationery Office: London. See [www.sacn.gov.uk/pdfs/sacn\\_salt\\_final.pdf](http://www.sacn.gov.uk/pdfs/sacn_salt_final.pdf)
5. Department of Health (2005) *Choosing a better diet: a food and health action plan.* Department of Health: London. See [www.dh.gov.uk/assetRoot/04/10/57/09/04105709.pdf](http://www.dh.gov.uk/assetRoot/04/10/57/09/04105709.pdf)
6. World Health Organization (2002) *The World Health Report 2002. Reducing Risks, Promoting Healthy Life.* World Health Organization: Geneva.
7. Office of National Statistics (2003) *The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volumes 1–4.* The Stationery Office: London.
8. *Extrinsic sugars refer to sugars that are not contained within the cell walls of fruit, vegetables and plants. Non-milk extrinsic sugars refer to such sugars that are not naturally present in milk. Almost all sugar added to processed food consists of non-milk extrinsic sugars, which are more strongly associated with dental caries than all other sugars.*
9. *Food purchase data do not accurately describe food consumption patterns as not all food that is bought is consumed due to wastage. Levels of wastage may be different for different food types, so comparisons across food categories are tricky.*
10. Social Survey Division of the Office of National Statistics and Medical Research Council Human Nutrition Unit (2003) *The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 3. Vitamin and mineral intake and urinary analytes.* The Stationery Office: London. [www.food.gov.uk/multimedia/pdfs/ndnsu3.pdf](http://www.food.gov.uk/multimedia/pdfs/ndnsu3.pdf)
11. Crawley, H. (2005). *Nutrient-based standards for school food: A summary of the standards and recommendations of the Caroline Walker Trust and the National Heart Forum.* The Caroline Walker Trust: St Austell. See <http://www.cwt.org.uk/pdfs/eatingwell.pdf>
12. *The WHO definition of food availability refers to the amount produced nationally plus imports minus exports.*

**Table 5.1** *Selected dietary targets for the United Kingdom*

|                             |                                                                                                                                                                                                                                |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>England<sup>1</sup></b>  |                                                                                                                                                                                                                                |
| Total fat                   | To maintain the average total intake of fat at 35% of food energy                                                                                                                                                              |
| Saturated fat               | To reduce the average total intake of saturated fat to 11% of food energy                                                                                                                                                      |
| Fruit and vegetables        | To increase the average consumption of a variety of fruit and vegetables to at least five portions per day                                                                                                                     |
| Fibre                       | To increase the average intake of dietary fibre to 18 grams per day                                                                                                                                                            |
| Sugar                       | To reduce the average intake of added sugar to 11% of food energy                                                                                                                                                              |
| Salt                        | To reduce the average intake of salt to 6 grams per day by 2010                                                                                                                                                                |
| <b>Scotland<sup>2</sup></b> |                                                                                                                                                                                                                                |
| Total fat                   | Average intake of total fat to reduce to no more than 35% of food energy                                                                                                                                                       |
| Saturated fat               | Average intake of saturated fat to reduce to no more than 11% of food energy                                                                                                                                                   |
| Fruit and vegetables        | Average intake to double to more than 400g per day                                                                                                                                                                             |
| Total complex carbohydrates | Increase average non-sugar carbohydrates intake by 25% from 124g per day, through increased consumption of fruit and vegetables, bread, breakfast cereals, rice and pasta and through an increase of 25% in potato consumption |
| Sugar                       | Average intake of NME sugars in adults not to increase                                                                                                                                                                         |
| Salt                        | Average intake to reduce to 100mmol per day                                                                                                                                                                                    |
| <b>Wales<sup>3</sup></b>    |                                                                                                                                                                                                                                |
| Total fat                   | 35% of food energy                                                                                                                                                                                                             |
| Saturated fat               | 10% of total energy                                                                                                                                                                                                            |
| Fruit and vegetables        | At least five portions per day                                                                                                                                                                                                 |
| Starchy food                | 37% of total dietary intake                                                                                                                                                                                                    |
| Sugar                       | Average intake of non-milk extrinsic sugars not to exceed 60g/day                                                                                                                                                              |
| Salt                        | Reduce average intake to 6 grams per day                                                                                                                                                                                       |
| <b>Northern Ireland</b>     |                                                                                                                                                                                                                                |
| No targets set              |                                                                                                                                                                                                                                |

Source:

1. Department of Health (2005) *Choosing a Better Diet: a food and health action plan*. DH: London.
2. The Scottish Executive (2004) *Eating for Health. Meeting the challenge*. The Scottish Executive: Edinburgh.
3. Food Standards Agency Wales (2003) *Food and well being: reducing inequalities through a nutrition strategy for Wales*. FSA Wales: Cardiff.

**Table 5.2** *Consumption of total fat, saturated fat, salt, sugar, fibre and fruit and vegetables, adults aged 16 and over, 1975 to 2004/05, Great Britain*

| <i>Consumption per person per day,<br/>total diet (i.e. including alcohol)</i> | 1975  | 1980  | 1985  | 1990  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001/02 | 2002/03 | 2003/04 | 2004/05 |
|--------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|---------|---------|---------|
| Energy (kcal)                                                                  | 2,489 | 2,439 | 2,208 | 2,058 | 2,143 | 2,241 | 2,168 | 2,102 | 2,056 | 2,152 | 2,089   | 2,099   | 2,077   | 2,048   |
| Energy (kJ)                                                                    | 10.4  | 10.3  | 9.3   | 8.6   | 9.0   | 9.4   | 9.1   | 8.8   | 8.6   | 9.0   | 8.8     | 8.8     | 8.7     | 8.6     |
| Fat (g)                                                                        | 111.7 | 112.0 | 102.1 | 93.5  | 89.1  | 93.5  | 89.0  | 85.9  | 82.7  | 86.2  | 85.7    | 85.4    | 84.8    | 83.4    |
| Fat (% total energy)                                                           | 40.4  | 41.3  | 41.6  | 40.9  | 37.4  | 37.6  | 36.9  | 36.8  | 36.2  | 36.1  | 36.9    | 36.6    | 36.7    | 36.7    |
| Saturated fat (g)                                                              | 53.4  | 49.1  | 43.0  | 37.2  | 35.5  | 36.8  | 35.4  | 34.3  | 32.8  | 34.6  | 33.9    | 33.7    | 33.6    | 32.9    |
| Saturated fat (% total energy)                                                 | 19.3  | 18.1  | 17.5  | 16.3  | 14.9  | 14.8  | 14.7  | 14.7  | 14.4  | 14.5  | 14.6    | 14.4    | 14.6    | 14.5    |
| Total sugars (g)                                                               | -     | -     | -     | -     | 129.0 | 134.0 | 130.0 | 125.0 | 123.0 | 131.0 | 122.3   | 123.7   | 124.3   | 122.5   |
| Non-milk extrinsic sugars (g)                                                  | -     | -     | -     | -     | 87.0  | 91.0  | 88.0  | 84.0  | 82.0  | 88.0  | 80.9    | 82.0    | 81.5    | 80.0    |
| Non-milk extrinsic sugars (% total energy)                                     | -     | -     | -     | -     | 15.2  | 15.2  | 15.2  | 15.0  | 15.0  | 15.3  | 14.5    | 14.7    | 14.7    | 14.7    |
| Non-starch polysaccharide fibre (g)                                            | -     | -     | -     | -     | 12.8  | 13.7  | 13.6  | 13.4  | 13.2  | 13.9  | 13.3    | 13.5    | 13.1    | 13.2    |
| Sodium (g)                                                                     | -     | -     | 2.80  | 2.73  | 2.80  | 2.92  | 2.88  | 2.81  | 2.79  | 2.90  | 2.87    | 2.81    | 2.75    | 2.71    |
| Salt (g)                                                                       | -     | -     | 7.00  | 6.83  | 7.00  | 7.30  | 7.20  | 7.03  | 6.98  | 7.25  | 7.17    | 7.03    | 6.87    | 6.77    |
| <i>Purchase per person per week</i>                                            |       |       |       |       |       |       |       |       |       |       |         |         |         |         |
| Fruit and vegetables<br>(excluding potatoes) (g)                               | 1,818 | 2,059 | 2,018 | 2,164 | 2,254 | 2,334 | 2,369 | 2,329 | 2,322 | 2,381 | 2,248   | 2,306   | 2,269   | 2,274   |

Notes: Data pre-1996 are unadjusted National Food Survey data. 2001/02 data onwards are Expenditure and Food Survey data. 1996 to 2000 data are adjusted estimates from the National Food Survey. Because of the discontinuity between datasets, these trends need to be interpreted with caution. Consumption assumed from purchase data.

Source: Office for National Statistics (2006) Expenditure and Food Survey 2004/05. The Stationery Office: London and previous editions.  
Department for Environment, Food and Rural Affairs (2003) National Food Survey 2000. The Stationery Office: London and previous editions.

Figure 5.2a Consumption of total fat, saturated fat and NME sugars, adults aged 16 and over, 1975 to 2004/05, Great Britain, with “Choosing a Better Diet” targets

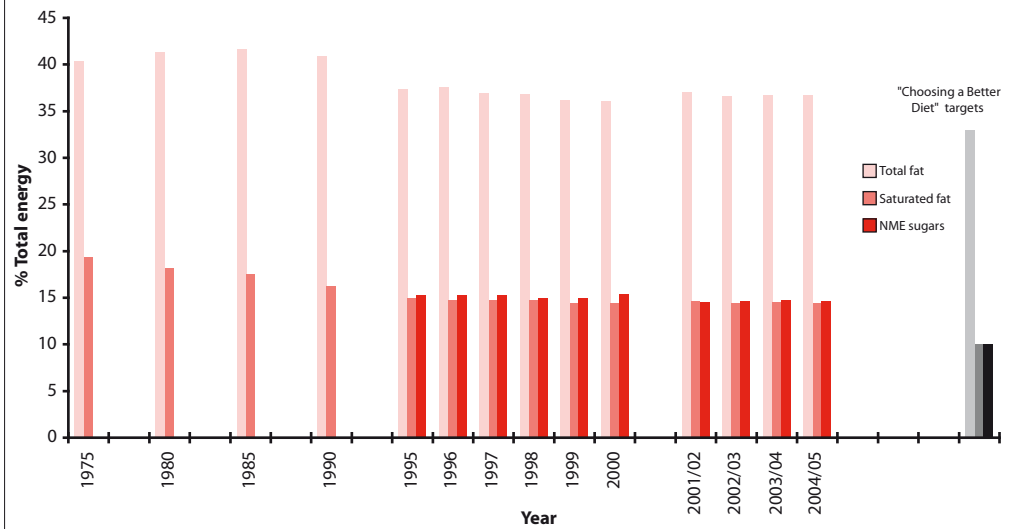


Figure 5.2b Consumption of fruit and vegetables, adults aged 16 and over, 1975 to 2004/05, Great Britain, with 5-a-day benchmark

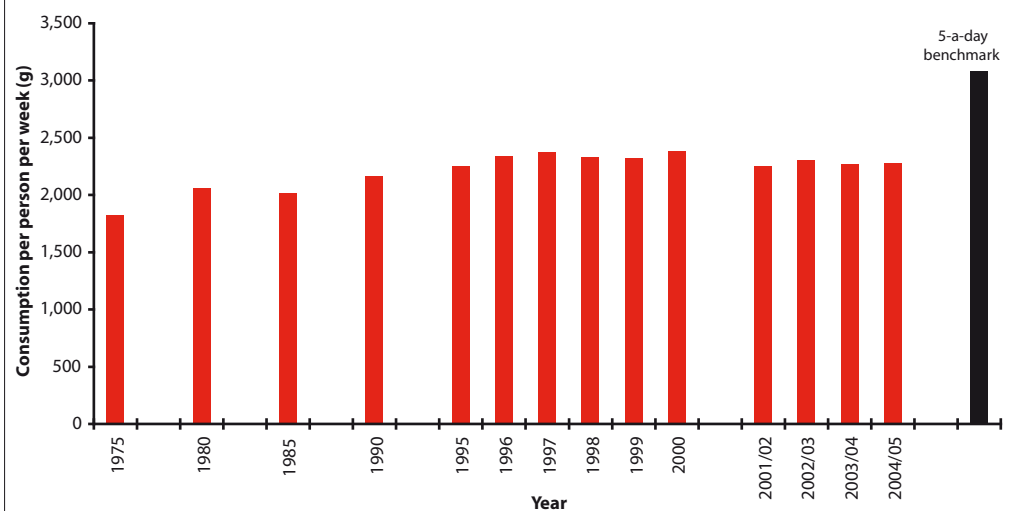


**Table 5.3** *Food energy from fat and saturated fat, consumption of fruit and vegetables, and salt consumption by sex and age, 2000/01, Great Britain*

|                                                                  | MEN   |       |       |       |      | WOMEN |       |       |       |      |
|------------------------------------------------------------------|-------|-------|-------|-------|------|-------|-------|-------|-------|------|
|                                                                  | 19-24 | 25-34 | 35-49 | 50-64 | All  | 19-24 | 25-34 | 35-49 | 50-64 | All  |
| <i>Percentage of food energy, total fat</i>                      |       |       |       |       |      |       |       |       |       |      |
| Mean                                                             | 36.0  | 35.8  | 35.9  | 35.6  | 35.8 | 35.5  | 35.4  | 34.7  | 34.5  | 34.9 |
| % exceeding recommended daily consumption                        | 54    | 56    | 60    | 55    | 57   | 51    | 55    | 51    | 44    | 50   |
| <i>Percentage of food energy, saturated fat</i>                  |       |       |       |       |      |       |       |       |       |      |
| Mean                                                             | 13.5  | 13.2  | 13.5  | 13.4  | 13.4 | 12.9  | 13.2  | 13.2  | 13.3  | 13.2 |
| % exceeding recommended daily consumption                        | 86    | 92    | 88    | 87    | 88   | 82    | 84    | 84    | 80    | 83   |
| <i>Daily number of portions of fruit and vegetables consumed</i> |       |       |       |       |      |       |       |       |       |      |
| Mean                                                             | 1.3   | 2.2   | 3.0   | 3.6   | 2.7  | 1.8   | 2.4   | 2.9   | 3.8   | 2.9  |
| % eating recommended 5 or more portions a day                    | 0     | 7     | 14    | 24    | 13   | 4     | 9     | 17    | 22    | 15   |
| <i>Salt consumption (grams per day)</i>                          |       |       |       |       |      |       |       |       |       |      |
| Mean                                                             | 11.0  | 11.4  | 11.1  | 10.5  | 11.0 | 9.1   | 8.7   | 8.0   | 7.5   | 8.1  |
| % exceeding recommended daily consumption                        | 98    | 80    | 87    | 82    | 85   | 83    | 71    | 69    | 62    | 69   |
| Base (total fat, saturated fat, fruit and vegetables)            | 108   | 219   | 253   | 253   | 833  | 104   | 210   | 318   | 259   | 891  |
| Base (salt)                                                      | 62    | 152   | 170   | 183   | 567  | 60    | 129   | 203   | 187   | 580  |

Notes: Data are weighted for non-response.

Salt consumption estimates based on 24 hour urine collection.

Source: Office for National Statistics (2002) *The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 1. Types and quantities of foods consumed.* The Stationery Office: London.

Office for National Statistics (2003) *The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 2. Energy, protein, carbohydrate, fat and alcohol intake.* The Stationery Office: London.

Office for National Statistics (2003) *The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 3. Vitamin and mineral intake and urinary analytes.* The Stationery Office: London.

**Figure 5.3** *Percentage of adults failing to meet daily recommended consumption targets for fruit and vegetables and salt by sex and age, 2000/01, Great Britain*

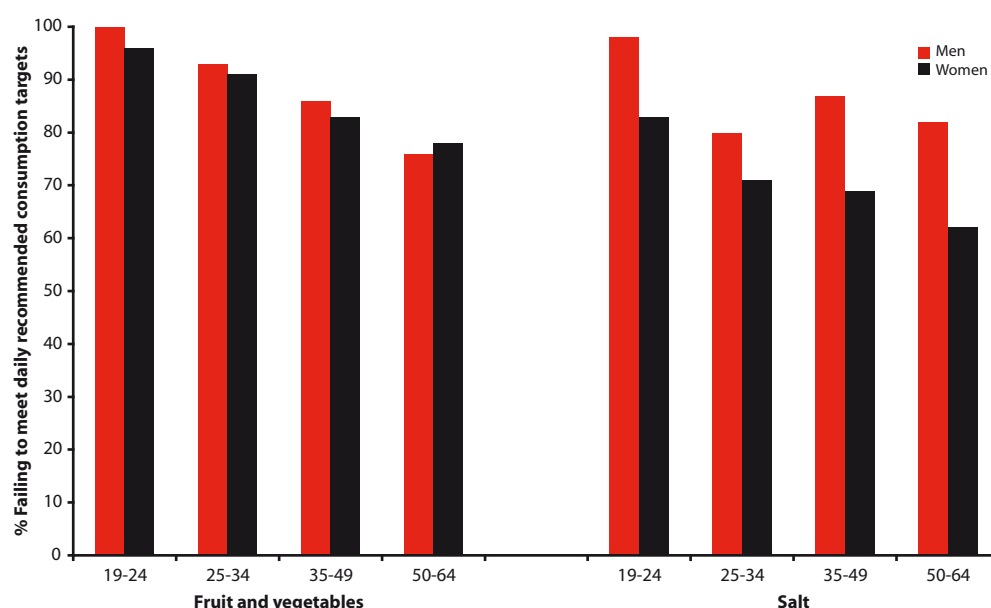


**Table 5.4 Consumption of selected foods, adults aged 16 and over, 1942 to 2004/05, United Kingdom**

|                                                     | 1942         | 1945         | 1950         | 1955         | 1960         | 1965         | 1970         | 1975         | 1980         | 1985         | 1990         | 1995         | 2000         | 2004/05      |
|-----------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <i>Litres per person per week</i>                   |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Liquid wholemilk                                    | 1.98         | 2.34         | 2.72         | 2.73         | 2.75         | 2.76         | 2.63         | 2.71         | 2.37         | 1.90         | 1.24         | 0.82         | 0.68         | 0.49         |
| Skimmed milks                                       |              |              |              |              |              |              |              | 0.01         | 0.02         | 0.25         | 0.73         | 1.12         | 1.16         | 1.13         |
| Yoghurt                                             |              |              |              |              |              |              |              | 0.03         | 0.06         | 0.08         | 0.11         | 0.15         | 0.16         | 0.19         |
| <b>Total milk and cream</b>                         | <b>2.14</b>  | <b>2.52</b>  | <b>2.94</b>  | <b>2.89</b>  | <b>2.92</b>  | <b>2.95</b>  | <b>2.89</b>  | <b>2.98</b>  | <b>2.68</b>  | <b>2.41</b>  | <b>2.23</b>  | <b>2.24</b>  | <b>2.16</b>  | <b>1.98</b>  |
| <i>Number per person per week</i>                   |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Eggs                                                | 1.4          | 3.0          | 3.5          | 4.2          | 4.6          | 4.8          | 4.7          | 3.8          | 3.4          | 2.9          | 2.0          | 1.7          | 1.6          | 1.6          |
| <i>Grams per person per week</i>                    |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Natural cheese                                      |              |              |              | 70           | 75           | 81           | 92           | 99           | 103          | 103          | 105          | 98           | 97           | 96           |
| Processed cheese                                    |              |              |              | 10           | 11           | 10           | 10           | 8            | 6            | 7            | 9            | 10           | 12           | 14           |
| <b>Total cheese</b>                                 | <b>101</b>   | <b>71</b>    | <b>72</b>    | <b>80</b>    | <b>86</b>    | <b>91</b>    | <b>102</b>   | <b>107</b>   | <b>110</b>   | <b>111</b>   | <b>113</b>   | <b>108</b>   | <b>109</b>   | <b>110</b>   |
| Oranges and other citrus fruits                     |              | 75           | 93           | 108          | 124          | 122          | 142          | 143          | 153          | 119          | 136          | 136          | 137          | 145          |
| Apples and pears                                    |              |              | 201          | 190          | 230          | 231          | 234          | 219          | 260          | 235          | 249          | 233          | 235          | 220          |
| Bananas                                             |              |              | 37           | 83           | 96           | 101          | 85           | 85           | 91           | 83           | 130          | 184          | 214          | 217          |
| <b>Total fresh fruit</b>                            | <b>197</b>   | <b>318</b>   | <b>409</b>   | <b>457</b>   | <b>522</b>   | <b>533</b>   | <b>543</b>   | <b>511</b>   | <b>608</b>   | <b>540</b>   | <b>624</b>   | <b>693</b>   | <b>765</b>   | <b>805</b>   |
| Fruit juice (ml)                                    |              |              | 7            | 8            | 14           | 19           | 17           | 42           | 97           | 165          | 225          | 272          | 332          | 280          |
| Total other fruit                                   |              |              | 97           | 156          | 162          | 173          | 163          | 185          | 152          | 120          | 113          | 103          | 92           | 83           |
| <b>Total fruit</b>                                  | <b>197</b>   | <b>318</b>   | <b>513</b>   | <b>621</b>   | <b>698</b>   | <b>725</b>   | <b>723</b>   | <b>738</b>   | <b>857</b>   | <b>825</b>   | <b>962</b>   | <b>1,068</b> | <b>1,189</b> | <b>1168</b>  |
| Fresh green vegetables                              | 438          | 517          | 392          | 415          | 430          | 407          | 372          | 341          | 366          | 287          | 287          | 233          | 246          | 225          |
| Other fresh vegetables                              | 450          | 442          | 433          | 415          | 427          | 406          | 394          | 405          | 466          | 461          | 475          | 486          | 506          | 536          |
| <b>Total fresh vegetables (excludes potatoes)</b>   | <b>888</b>   | <b>959</b>   | <b>825</b>   | <b>830</b>   | <b>857</b>   | <b>813</b>   | <b>766</b>   | <b>746</b>   | <b>832</b>   | <b>748</b>   | <b>762</b>   | <b>719</b>   | <b>752</b>   | <b>761</b>   |
| All processed vegetables (includes frozen & canned) | 136          | 188          | 214          | 224          | 260          | 304          | 382          | 506          | 554          | 625          | 638          | 697          | 671          | 597          |
| <b>Fresh potatoes</b>                               | <b>1,877</b> | <b>1,863</b> | <b>1,759</b> | <b>1,698</b> | <b>1,588</b> | <b>1,509</b> | <b>1,470</b> | <b>1,257</b> | <b>1,176</b> | <b>1,175</b> | <b>1,008</b> | <b>810</b>   | <b>727</b>   | <b>570</b>   |
| Bread                                               | 1,718        | 1,752        | 1,637        | 1,563        | 1,289        | 1,151        | 1,080        | 1,029        | 949          | 947          | 859          | 818          | 782          | 695          |
| Flour                                               | 181          | 176          | 206          | 243          | 192          | 173          | 161          | 156          | 169          | 121          | 95           | 60           | 69           | 55           |
| Cakes, buns and pastries                            |              |              | 190          | 158          | 179          | 191          | 161          | 173          | 153          | 141          | 146          | 173          | 187          | 164          |
| Biscuits (includes crispbreads)                     | 74           | 82           | 104          | 145          | 161          | 165          | 163          | 211          | 205          | 198          | 199          | 181          | 189          | 165          |
| Breakfast cereals                                   | 23           | 26           | 40           | 48           | 51           | 56           | 78           | 82           | 94           | 109          | 121          | 127          | 135          | 131          |
| <b>Total cereals (excludes breads)</b>              | <b>593</b>   | <b>672</b>   | <b>678</b>   | <b>706</b>   | <b>711</b>   | <b>729</b>   | <b>711</b>   | <b>649</b>   | <b>655</b>   | <b>638</b>   | <b>692</b>   | <b>775</b>   | <b>846</b>   | <b>827</b>   |
| <b>Bread and cereal products</b>                    | <b>2,310</b> | <b>2,424</b> | <b>2,315</b> | <b>2,269</b> | <b>2,000</b> | <b>1,880</b> | <b>1,791</b> | <b>1,678</b> | <b>1,604</b> | <b>1,585</b> | <b>1,551</b> | <b>1,593</b> | <b>1,628</b> | <b>1522</b>  |
| Sugar                                               | 238          | 259          | 287          | 500          | 503          | 498          | 480          | 394          | 392          | 294          | 211          | 169          | 130          | 99           |
| Preserves                                           | 140          | 155          | 179          | 116          | 91           | 85           | 73           | 76           | 63           | 58           | 52           | 43           | 37           | 35           |
| Tea                                                 |              |              | 61           | 79           | 79           | 74           | 73           | 66           | 62           | 53           | 46           | 42           | 36           | 31           |
| Coffee                                              |              |              | 6            | 10           | 11           | 12           | 16           | 19           | 20           | 21           | 19           | 18           | 16           | 16           |
| <b>Total beverages</b>                              |              |              | <b>77</b>    | <b>100</b>   | <b>101</b>   | <b>98</b>    | <b>102</b>   | <b>103</b>   | <b>99</b>    | <b>90</b>    | <b>84</b>    | <b>74</b>    | <b>70</b>    | <b>56</b>    |
| Fresh white fish                                    |              |              | 89           | 90           | 67           | 64           | 50           | 37           | 32           | 28           | 24           | 20           | 15           | 18           |
| Fresh fatty fish                                    |              |              | 16           | 11           | 9            | 7            | 6            | 5            | 7            | 7            | 8            | 10           | 14           | 16           |
| Shell fish                                          |              |              | 3            | 3            | 3            | 2            | 1            | 2            | 3            | 4            | 5            | 6            | 6            | 11           |
| Takeaway fish                                       |              |              | 29           | 23           | 24           | 28           | 29           | 18           | 20           | 16           | 15           | 14           | 7            | 11           |
| <b>Total fish and fish products</b>                 | <b>187</b>   | <b>261</b>   | <b>188</b>   | <b>169</b>   | <b>166</b>   | <b>164</b>   | <b>152</b>   | <b>128</b>   | <b>137</b>   | <b>140</b>   | <b>147</b>   | <b>147</b>   | <b>144</b>   | <b>158</b>   |
| <b>Salt</b>                                         |              |              |              | <b>26</b>    | <b>25</b>    | <b>28</b>    | <b>25</b>    | <b>32</b>    | <b>27</b>    | <b>15</b>    | <b>13</b>    | <b>9</b>     | <b>9</b>     |              |
| Butter                                              | 56           | 61           | 129          | 127          | 161          | 173          | 170          | 147          | 106          | 74           | 42           | 34           | 37           | 35           |
| Margarine                                           | 118          | 119          | 112          | 133          | 104          | 86           | 81           | 78           | 115          | 113          | 96           | 43           | 22           | 11           |
| Low fat spreads                                     |              |              |              |              |              |              |              |              |              | 14           | 27           | 27           | 22           | 23           |
| Reduced fat spreads                                 |              |              |              |              |              |              |              |              |              |              | 20           | 48           | 50           | 44           |
| Lard                                                | 50           | 43           | 56           | 62           | 58           | 60           | 63           | 62           | 57           | 45           | 25           | 14           | 7            | 4            |
| <b>Total fats</b>                                   | <b>245</b>   | <b>245</b>   | <b>329</b>   | <b>337</b>   | <b>339</b>   | <b>336</b>   | <b>339</b>   | <b>315</b>   | <b>324</b>   | <b>293</b>   | <b>265</b>   | <b>227</b>   | <b>193</b>   | <b>182</b>   |
| Beef and veal                                       | 230          | 179          | 228          | 265          | 248          | 229          | 221          | 215          | 208          | 167          | 134          | 109          | 113          | 123          |
| Mutton and lamb                                     | 150          | 173          | 154          | 186          | 188          | 167          | 149          | 119          | 128          | 92           | 82           | 54           | 54           | 50           |
| Pork                                                | 11           | 40           | 9            | 66           | 57           | 79           | 80           | 79           | 118          | 98           | 84           | 71           | 68           | 56           |
| Bacon and ham                                       | 112          | 100          | 128          | 172          | 175          | 179          | 177          | 137          | 145          | 132          | 115          | 111          | 109          | 113          |
| Poultry                                             |              |              | 10           | 14           | 50           | 100          | 143          | 160          | 170          | 177          | 204          | 217          | 235          | 246          |
| Sausages                                            | 113          | 110          | 114          | 99           | 103          | 106          | 106          | 99           | 100          | 92           | 74           | 68           | 66           | 67           |
| <b>Total meat and meat products</b>                 | <b>746</b>   | <b>746</b>   | <b>846</b>   | <b>976</b>   | <b>1,017</b> | <b>1,066</b> | <b>1,121</b> | <b>1,055</b> | <b>1,160</b> | <b>1,069</b> | <b>999</b>   | <b>986</b>   | <b>1,014</b> | <b>1,049</b> |
| Soft drinks, low calorie (ml)                       |              |              |              |              |              |              |              |              |              |              |              | 504          | 516          | 441          |
| Soft drinks, not low calorie (ml)                   |              |              |              |              |              |              |              |              |              |              |              | 1,150        | 1,184        | 1,391        |
| <b>Total soft drinks (ml)</b>                       |              |              |              |              |              |              |              |              |              |              |              | <b>1,654</b> | <b>1,699</b> | <b>1,832</b> |
| Chocolate bars                                      |              |              |              |              |              |              |              |              |              |              |              | 87           | 113          | 90           |
| <b>Confectionery</b>                                |              |              |              |              |              |              |              |              |              |              |              | <b>125</b>   | <b>151</b>   | <b>131</b>   |

**Notes:** Figures differ from actual food and drink consumption for a number of reasons e.g. food may be discarded during food preparation (e.g. vegetable peelings), food may be left on the plate at the end of a meal or food may become inedible before it can be consumed and is therefore thrown away. Data for 1942 to 1970 from non-adjusted National Food Survey (GB only). Data for 1975 to 1995 from adjusted National Food Survey (GB only). Data for 1996 to 2000 from adjusted National Food Survey (UK). Data for 2004/05 from Expenditure and Food Survey (UK). Because of the discontinuity between datasets, these trends need to be interpreted with caution.

**Source:** Office for National Statistics (2006) Expenditure and Food Survey 2004/05. The Stationery Office: London, and previous editions.

Department for Environment, Food and Rural Affairs (2001) National Food Survey 2000. The Stationery Office: London, and previous editions.

Figure 5.4a Consumption of fats, adults aged 16 and over, 1942 to 2004/05, United Kingdom

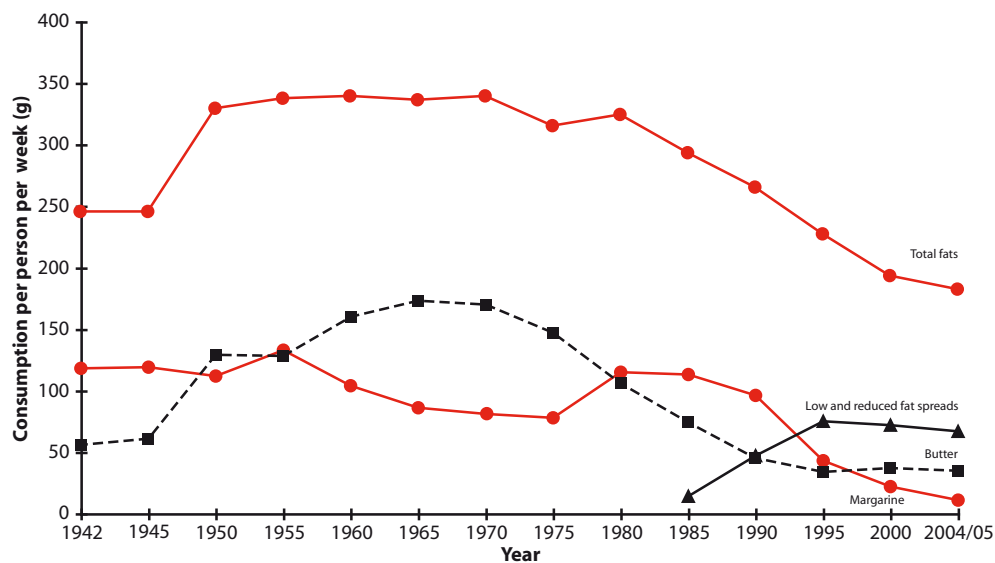


Figure 5.4b Consumption of milk and milk products, adults aged 16 and over, 1942 to 2004/05, United Kingdom

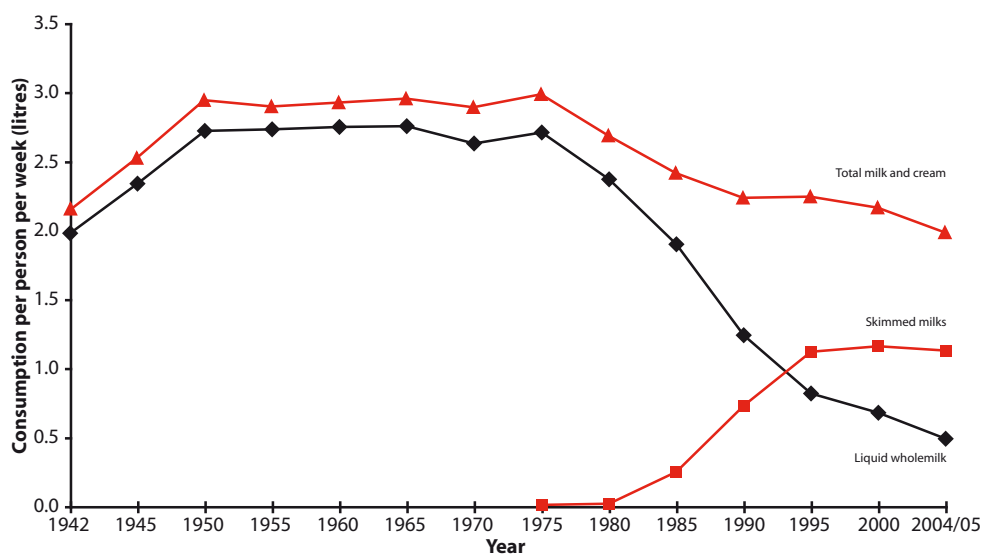


**Figure 5.4c** Consumption of fresh fruit and vegetables, adults aged 16 and over, 1942 to 2004/05, United Kingdom

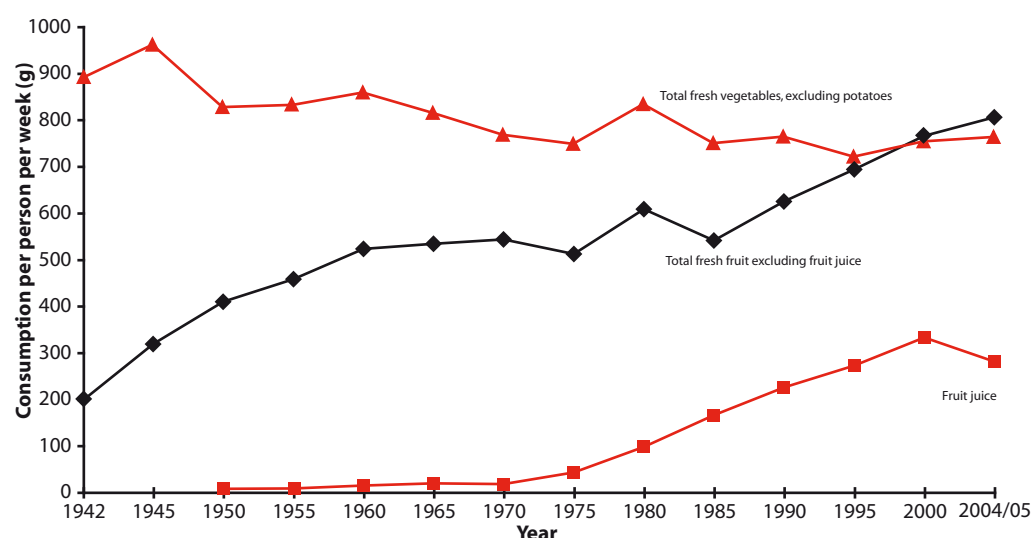


**Table 5.5** Consumption of selected nutrients, adults aged 16 to 64, 1986/87 and 2000/01, Great Britain

|                                           | 1986/87 |       | 2000/01 |       | % change |       |
|-------------------------------------------|---------|-------|---------|-------|----------|-------|
|                                           | MEN     | WOMEN | MEN     | WOMEN | MEN      | WOMEN |
| Total energy (kcal/day)                   | 2,450   | 1,680 | 2,313   | 1,632 | -5.6     | -2.9  |
| Food energy (kcal/day)                    | 2,281   | 1,633 | 2,110   | 1,554 | -7.5     | -4.8  |
| Carbohydrate (g/day)                      | 272     | 193   | 275     | 203   | +1.1     | +5.2  |
| Carbohydrate (% food energy)              | 44.7    | 44.2  | 47.7    | 48.5  | +6.7     | +9.7  |
| Non-milk extrinsic sugars (g/day)         |         |       | 79      | 51    |          |       |
| Non-milk extrinsic sugars (% food energy) |         |       | 13.6    | 11.9  |          |       |
| Intrinsic and milk sugars (g/day)         |         |       | 39      | 37    |          |       |
| Intrinsic and milk sugars (% food energy) |         |       | 6.9     | 8.9   |          |       |
| Total sugars (g/day)                      | 115     | 86    | 118     | 88    | +2.6     | +2.3  |
| Total sugars (% food energy)              | 18.9    | 19.7  | 21.0    | 21.2  | +10.9    | +7.5  |
| Fat (g/day)                               | 102     | 74    | 87      | 61    | -15.4    | -16.5 |
| Fat (% food energy)                       | 40.4    | 40.3  | 35.8    | 34.9  | -11.4    | -13.4 |
| Saturated fat (g/day)                     | 42      | 31    | 33      | 23    | -22.6    | -25.1 |
| Saturated fat (% food energy)             | 16.5    | 17.0  | 13.4    | 13.2  | -18.8    | -22.4 |
| Protein (g/day)                           | 85      | 62    | 88      | 64    | +4.1     | +2.7  |
| Protein (% food energy)                   | 15.2    | 15.6  | 16.5    | 16.6  | +8.6     | +6.4  |
| Salt (g/day)                              | 10.1    | 7.7   | 11.0    | 8.1   | +8.9     | +5.2  |

Notes: 1986/87 survey covered adults aged 16-64, whereas 2000/01 survey covered adults aged 19-64.

*Italicised entries are estimates using average values.*

Source: Office of National Statistics (2002) *The National Diet and Nutrition Survey: adults aged 19 to 64. Volumes 2 and 3.* The Stationery Office: London.

Office of Population Censuses and Surveys (1990) *The Dietary and Nutritional Survey of British Adults.* The Stationery Office: London.

**Table 5.6** *Consumption of fruit and vegetables by sex and age, children aged 5 to 15, 2001 to 2005, England*

| MALES                                         | AGE (YEARS) | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | All ages |
|-----------------------------------------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| <i>Mean number of portions per day</i>        | 2001        | 2.4 | 2.5 | 2.1 | 2.3 | 2.3 | 2.4 | 2.5 | 2.1 | 2.3 | 2.9 | 2.7 | 2.4      |
|                                               | 2002        | 2.6 | 2.4 | 2.5 | 2.4 | 2.4 | 2.4 | 2.5 | 2.7 | 2.5 | 2.7 | 2.5 | 2.5      |
|                                               | 2003        | 2.7 | 2.2 | 2.4 | 2.2 | 2.6 | 2.6 | 2.3 | 2.3 | 2.2 | 2.4 | 2.3 | 2.4      |
|                                               | 2004        | 2.8 | 2.7 | 2.4 | 2.7 | 2.9 | 2.5 | 2.8 | 2.9 | 2.4 | 2.7 | 3.2 | 2.7      |
|                                               | 2005        | 3.0 | 3.0 | 3.6 | 2.8 | 3.1 | 3.1 | 2.7 | 3.4 | 3.6 | 2.6 | 2.7 | 3.1      |
| <i>% consuming 5 or more portions per day</i> | 2001        | 9   | 11  | 9   | 8   | 11  | 13  | 12  | 7   | 13  | 15  | 18  | 11       |
|                                               | 2002        | 12  | 10  | 10  | 10  | 9   | 10  | 12  | 15  | 12  | 15  | 14  | 12       |
|                                               | 2003        | 9   | 4   | 11  | 6   | 11  | 14  | 10  | 10  | 9   | 11  | 11  | 10       |
|                                               | 2004        | 9   | 10  | 8   | 7   | 14  | 10  | 13  | 20  | 19  | 8   | 23  | 13       |
|                                               | 2005        | 18  | 18  | 18  | 14  | 23  | 21  | 7   | 20  | 22  | 16  | 13  | 17       |
| <i>Unweighted base</i>                        | 2001        | 139 | 137 | 128 | 138 | 143 | 127 | 143 | 144 | 144 | 124 | 131 | 1,498    |
|                                               | 2002        | 287 | 304 | 336 | 317 | 296 | 331 | 322 | 299 | 290 | 309 | 275 | 3,367    |
|                                               | 2003        | 105 | 130 | 122 | 119 | 110 | 128 | 110 | 128 | 117 | 116 | 116 | 1,301    |
|                                               | 2004        | 56  | 63  | 52  | 61  | 63  | 61  | 43  | 61  | 59  | 52  | 50  | 621      |
|                                               | 2005        | 89  | 83  | 89  | 102 | 115 | 84  | 97  | 96  | 87  | 86  | 80  | 1,010    |
| FEMALES                                       | AGE (YEARS) | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | All ages |
| <i>Mean number of portions per day</i>        | 2001        | 2.4 | 2.4 | 2.2 | 2.7 | 2.4 | 2.6 | 2.8 | 2.9 | 2.9 | 2.6 | 2.8 | 2.6      |
|                                               | 2002        | 2.6 | 2.5 | 2.7 | 2.5 | 2.6 | 2.6 | 2.7 | 2.6 | 2.5 | 2.9 | 2.8 | 2.6      |
|                                               | 2003        | 2.5 | 2.6 | 2.4 | 2.6 | 2.2 | 2.3 | 2.5 | 2.9 | 2.6 | 2.9 | 2.7 | 2.6      |
|                                               | 2004        | 2.8 | 2.9 | 2.1 | 3.1 | 2.7 | 2.6 | 2.6 | 3.0 | 3.0 | 2.5 | 2.4 | 2.7      |
|                                               | 2005        | 3.4 | 3.2 | 2.9 | 3.3 | 3.1 | 2.8 | 3.1 | 3.3 | 3.1 | 2.6 | 3.1 | 3.1      |
| <i>% consuming 5 or more portions per day</i> | 2001        | 8   | 8   | 7   | 12  | 9   | 12  | 14  | 13  | 12  | 9   | 13  | 11       |
|                                               | 2002        | 11  | 9   | 13  | 11  | 10  | 11  | 13  | 13  | 11  | 15  | 14  | 12       |
|                                               | 2003        | 13  | 11  | 6   | 14  | 5   | 6   | 12  | 16  | 12  | 19  | 15  | 12       |
|                                               | 2004        | 10  | 9   | 2   | 18  | 9   | 19  | 6   | 19  | 19  | 6   | 12  | 12       |
|                                               | 2005        | 24  | 16  | 10  | 21  | 17  | 12  | 17  | 23  | 15  | 10  | 19  | 17       |
| <i>Unweighted base</i>                        | 2001        | 147 | 125 | 146 | 154 | 146 | 160 | 149 | 128 | 132 | 131 | 142 | 1,560    |
|                                               | 2002        | 301 | 296 | 298 | 300 | 300 | 281 | 310 | 304 | 296 | 280 | 270 | 3,236    |
|                                               | 2003        | 123 | 112 | 118 | 118 | 126 | 128 | 122 | 128 | 128 | 127 | 112 | 1,342    |
|                                               | 2004        | 39  | 48  | 44  | 66  | 35  | 52  | 45  | 57  | 53  | 56  | 56  | 552      |
|                                               | 2005        | 95  | 102 | 93  | 75  | 89  | 97  | 108 | 99  | 81  | 94  | 95  | 1,027    |

Notes: Data are weighted for child selection, but not for non-response. Comparisons over time should be made with caution, due to the relatively low sample size for the 2004 results.

Source: The Information Centre (2006) Health Survey for England 2005. Updating of trend tables. The Information Centre: London. See <http://www.ic.nhs.uk/pubs/hseupdate05>

**Table 5.7** *Consumption of energy, fat, saturated fat, sugar, sodium and fibre from school meals in primary and secondary schools, by sex, children aged 4 to 18, 2003 and 2005, England*

| Nutrient per meal                    | CHILDREN (AGED 4-12 YEARS) |               | BOYS (AGED 11-18 YEARS) |               | GIRLS (AGED 11-18 YEARS) |               |
|--------------------------------------|----------------------------|---------------|-------------------------|---------------|--------------------------|---------------|
|                                      | Mean                       | CWT guideline | Mean                    | CWT guideline | Mean                     | CWT guideline |
| Energy (kcal)                        | 469                        | 489           | 678                     | 705           | 596                      | 574           |
| Fat (g)                              | 18.8                       |               | 32.1                    |               | 27.9                     |               |
| Fat (% energy)                       | 35.2                       | <35.0         | 41.5                    | <35.0         | 40.8                     | <35.0         |
| Saturated fat (g)                    | 6.6                        |               | 10.5                    |               | 9.4                      |               |
| Saturated fat (% energy)             | 12.3                       | <11.0         | 13.4                    | <11.0         | 13.7                     | <11.0         |
| Non-milk extrinsic sugars (g)        | 14.1                       |               | 23.4                    |               | 21.2                     |               |
| Non-milk extrinsic sugars (% energy) | 11.1                       | <11.0         | 13.4                    | <11.0         | 13.6                     | <11.0         |
| Sodium (mg)                          | 699                        | n/a           | 1059                    | n/a           | 906                      | n/a           |
| Non-starch polysaccharide fibre (g)  | 4.1                        | 3.9           | 4.0                     | 5.6           | 3.7                      | 4.6           |
| Unweighted base                      | 3,035                      |               | 2,534                   |               |                          | 3,161         |

Notes: CWT guidelines refer to the Caroline Walker Trust guidelines for school meals. The guidelines provide figures for the recommended nutrient content of an average school meal provided for children over a one-week period. Data comes from a nationally representative sample of 151 primary schools (2005) and 79 secondary schools in England (2003).

Source: Nelson M, Nicholas J, Suleiman S, Davies O, Prior G, Hall L, Wreford S, Poulter J (2006). *School meals in primary schools in England*.

Department for Education and Skills: London.

Nelson M, Bradbury J, Poulter J, McGee A, Msebele S, Jarvis L (2004). *School meals in secondary schools in England*. Department for Education and Skills: London.

**Table 5.8** *Consumption of energy, fat, saturated fat, sugar, salt, fibre and fruit and vegetables, by country of the United Kingdom, and by Government Office Region in England, 2002 to 2005, United Kingdom*

| Consumption per person per day            | UK country |          |       |                  |            |            |                          |               |               |       | Government Office Region in England |            |            |  |  |  |
|-------------------------------------------|------------|----------|-------|------------------|------------|------------|--------------------------|---------------|---------------|-------|-------------------------------------|------------|------------|--|--|--|
|                                           | ENGLAND    | SCOTLAND | WALES | NORTHERN IRELAND | North East | North West | Yorkshire and the Humber | East Midlands | West Midlands | East  | London                              | South East | South West |  |  |  |
| Energy (kcal/day)                         | 2,320      | 2,179    | 2,326 | 2,258            | 2,372      | 2,445      | 2,262                    | 2,361         | 2,266         | 2,309 | 2,092                               | 2,274      | 2,369      |  |  |  |
| Energy (MJ/day)                           | 9.8        | 9.2      | 9.8   | 9.5              | 10.0       | 10.3       | 9.5                      | 9.9           | 9.5           | 9.7   | 8.8                                 | 9.6        | 10.0       |  |  |  |
| Total fat (g)                             | 94.0       | 87.0     | 96.0  | 91.0             | 97         | 99         | 91                       | 95            | 91            | 94    | 84                                  | 93         | 97         |  |  |  |
| Total fat (% food energy)                 | 37.6       | 37.3     | 38.3  | 37.4             | 38.2       | 37.9       | 37.7                     | 37.5          | 37.6          | 37.9  | 37.3                                | 38.2       | 38.0       |  |  |  |
| Saturated fat (g)                         | 36.7       | 34.4     | 37.6  | 36.2             | 38.5       | 38.3       | 35.8                     | 37.5          | 35.6          | 36.9  | 31.2                                | 36.6       | 38.3       |  |  |  |
| Saturated fat (% food energy)             | 14.7       | 14.7     | 15.0  | 14.8             | 15.1       | 14.6       | 14.8                     | 14.8          | 14.6          | 14.8  | 13.9                                | 15.0       | 15.1       |  |  |  |
| Total sugars (g)                          | 138        | 130      | 138   | 132              | 140        | 137        | 134                      | 142           | 133           | 140   | 120                                 | 136        | 143        |  |  |  |
| Non-milk extrinsic sugars (g)             | 93         | 89       | 95    | 89               | 98         | 93         | 91                       | 96            | 91            | 94    | 79                                  | 90         | 94         |  |  |  |
| Non-milk extrinsic sugars (% food energy) | 15.5       | 15.8     | 15.9  | 15.2             | 16.0       | 14.8       | 15.7                     | 15.8          | 15.6          | 15.7  | 14.6                                | 15.4       | 15.4       |  |  |  |
| Non-starch polysaccharide fibre (g)       | 14.5       | 13.3     | 14.1  | 14.1             | 14.0       | 14.8       | 14.0                     | 14.7          | 14.1          | 14.8  | 13.5                                | 14.5       | 15.3       |  |  |  |
| Sodium (g/day)                            | 3.1        | 2.7      | 3.2   | 3.0              | 3.2        | 3.2        | 3.0                      | 3.1           | 2.9           | 3.0   | 2.5                                 | 3.0        | 3.1        |  |  |  |
| Salt (g/day)                              | 7.7        | 6.8      | 7.9   | 7.6              | 8.0        | 8.2        | 7.4                      | 7.9           | 7.4           | 7.6   | 6.4                                 | 7.6        | 7.7        |  |  |  |
| Fruit (g/day)                             | 174        | 151      | 151   | 133              | 138        | 156        | 158                      | 169           | 152           | 194   | 183                                 | 194        | 194        |  |  |  |
| Vegetables - excluding potatoes (g/day)   | 161        | 128      | 152   | 119              | 143        | 142        | 150                      | 165           | 160           | 171   | 162                                 | 170        | 176        |  |  |  |

Notes: Sodium intake does not include sodium from table salt. Salt intake = sodium x 2.52. Consumption assumed from purchase data.

Source: Office for National Statistics (2006) Expenditure and Food Survey 2004/05. The Stationery Office: London.

**Table 5.9** *Consumption of energy, fat, saturated fat, sugar, salt, fibre and fruit and vegetables, by social class, 2002 to 2005, United Kingdom*

| <i>Consumption per person per day</i>            |                                                        |                                           |                        |              |                                                                            |                                                    |                                           |         |              |
|--------------------------------------------------|--------------------------------------------------------|-------------------------------------------|------------------------|--------------|----------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------|---------|--------------|
|                                                  | Large employer,<br>higher managerial<br>& professional | Small employer<br>& own account<br>worker | Higher<br>professional | Intermediate | Lower<br>professional,<br>managerial,<br>higher technical<br>& supervisory | Lower<br>supervisory &<br>technical<br>occupations | Never worked<br>& long term<br>unemployed | Routine | Semi-routine |
| Energy (kcal/day)                                | 2,217                                                  | 2,262                                     | 2,224                  | 2,147        | 2,212                                                                      | 2,312                                              | 1,987                                     | 2,258   | 2,246        |
| Energy (MJ/day)                                  | 9.3                                                    | 9.5                                       | 9.4                    | 9.0          | 9.3                                                                        | 9.7                                                | 8.3                                       | 9.5     | 9.4          |
| Total fat (g)                                    | 88                                                     | 93                                        | 88                     | 85           | 89                                                                         | 94                                                 | 83                                        | 92      | 91           |
| <i>Total fat (% food energy)</i>                 | 37.5                                                   | 38.3                                      | 37.1                   | 37.1         | 37.5                                                                       | 37.9                                               | 38.4                                      | 37.8    | 37.6         |
| Saturated fat (g)                                | 34.9                                                   | 36.5                                      | 34.7                   | 33.1         | 34.5                                                                       | 36.3                                               | 30.3                                      | 35.2    | 35.2         |
| <i>Saturated fat (% food energy)</i>             | 14.8                                                   | 15.1                                      | 14.7                   | 14.4         | 14.6                                                                       | 14.7                                               | 14.1                                      | 14.5    | 14.5         |
| Total sugars (g)                                 | 130                                                    | 131                                       | 131                    | 128          | 129                                                                        | 134                                                | 114                                       | 133     | 132          |
| Non-milk extrinsic sugars (g)                    | 85                                                     | 89                                        | 84                     | 87           | 86                                                                         | 93                                                 | 82                                        | 93      | 93           |
| <i>Non-milk extrinsic sugars (% food energy)</i> | 15.1                                                   | 15.3                                      | 14.9                   | 15.7         | 15.2                                                                       | 15.7                                               | 15.9                                      | 16.0    | 15.9         |
| Non-starch polysaccharide fibre (g)              | 14.3                                                   | 13.7                                      | 14.8                   | 13.3         | 14.2                                                                       | 13.9                                               | 10.9                                      | 13.4    | 13.2         |
| Sodium (g/day)                                   | 3.0                                                    | 3.0                                       | 2.9                    | 2.9          | 3.0                                                                        | 3.1                                                | 2.5                                       | 3.0     | 2.9          |
| Salt (g/day)                                     | 7.5                                                    | 7.4                                       | 7.4                    | 7.3          | 7.5                                                                        | 7.9                                                | 6.2                                       | 7.6     | 7.4          |
| Fruit (g/day)                                    | 200                                                    | 153                                       | 218                    | 153          | 183                                                                        | 130                                                | 103                                       | 121     | 126          |
| Vegetables - excluding potatoes (g/day)          | 161                                                    | 152                                       | 171                    | 144          | 159                                                                        | 144                                                | 111                                       | 138     | 134          |

Notes: Sodium intake does not include sodium from table salt. Salt intake = sodium x 2.52. Consumption assumed from purchase data. Social class categorisation is dependent upon the occupation of the Household Reference Person.

Source: Office for National Statistics (2006) Expenditure and Food Survey 2004/05. The Stationery Office: London.

**Table 5.10** *Consumption of energy, fat, saturated fat, sugar, salt, fibre and fruit and vegetables, by income quintile, 2002 to 2005, United Kingdom*

| <i>Consumption per person per day</i>            | Quintile 1<br>(Lowest income) | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5<br>(Highest income) |
|--------------------------------------------------|-------------------------------|------------|------------|------------|--------------------------------|
| Energy (kcal/day)                                | 2,270                         | 2,337      | 2,256      | 2,237      | 2,245                          |
| Energy (MJ/day)                                  | 9.5                           | 9.8        | 9.5        | 9.4        | 9.4                            |
| Total fat (g)                                    | 94                            | 96         | 92         | 90         | 90                             |
| <i>Total fat (% food energy)</i>                 | 38.1                          | 38.1       | 37.8       | 37.7       | 37.8                           |
| Saturated fat (g)                                | 37.1                          | 37.8       | 35.9       | 35.1       | 35.4                           |
| <i>Saturated fat (% food energy)</i>             | 15.1                          | 15.0       | 14.8       | 14.7       | 14.8                           |
| Total sugars (g)                                 | 138                           | 142        | 135        | 132        | 131                            |
| Non-milk extrinsic sugars (g)                    | 93                            | 96         | 92         | 90         | 87                             |
| <i>Non-milk extrinsic sugars (% food energy)</i> | 15.8                          | 15.9       | 15.8       | 15.6       | 15.2                           |
| Non-starch polysaccharide fibre (g)              | 13.7                          | 14.4       | 13.8       | 13.9       | 14.3                           |
| Sodium (g/day)                                   | 2.9                           | 3.0        | 3.0        | 3.0        | 3.0                            |
| Salt (g/day)                                     | 7.4                           | 7.5        | 7.5        | 7.5        | 7.6                            |
| Fruit (g/day)                                    | 156                           | 167        | 159        | 163        | 193                            |
| Vegetables - excluding potatoes (g/day)          | 152                           | 162        | 152        | 152        | 163                            |

Notes: Sodium intake does not include sodium from table salt. Salt intake = sodium x 2.52. Consumption assumed from purchase data.

Source: Office for National Statistics (2006) *Expenditure and Food Survey 2004/05*. The Stationery Office: London.

**Table 5.11** *Consumption of energy, fat, saturated fat, sugar, salt, fibre and fruit and vegetables, by ethnic group, 2002 to 2005, United Kingdom*

| <i>Consumption per person per day</i>            | Asian<br>/Asian British | Black<br>/Black British | Chinese<br>and others | Mixed | White |
|--------------------------------------------------|-------------------------|-------------------------|-----------------------|-------|-------|
| Energy (kcal/day)                                | 2,132                   | 1,930                   | 1,909                 | 2,063 | 2,295 |
| Energy (MJ/day)                                  | 9.0                     | 8.1                     | 8.0                   | 8.7   | 9.6   |
| Total fat (g)                                    | 85                      | 76                      | 74                    | 84    | 93    |
| <i>Total fat (% food energy)</i>                 | 36.3                    | 35.9                    | 35.3                  | 37.4  | 37.8  |
| Saturated fat (g)                                | 28.0                    | 24.7                    | 25.2                  | 30.6  | 36.8  |
| <i>Saturated fat (% food energy)</i>             | 11.9                    | 11.7                    | 12.0                  | 13.7  | 15.0  |
| Total sugars (g)                                 | 111                     | 113                     | 97                    | 131   | 137   |
| Non-milk extrinsic sugars (g)                    | 71                      | 79                      | 64                    | 92    | 93    |
| <i>Non-milk extrinsic sugars (% food energy)</i> | 12.7                    | 15.6                    | 12.7                  | 17.1  | 15.7  |
| Non-starch polysaccharide fibre (g)              | 13.1                    | 11.9                    | 12.2                  | 12.4  | 14.3  |
| Sodium (g/day)                                   | 1.7                     | 2.0                     | 2.0                   | 2.4   | 3.1   |
| Salt (g/day)                                     | 4.4                     | 4.9                     | 5.0                   | 6.1   | 7.7   |
| Fruit (g/day)                                    | 171                     | 178                     | 156                   | 193   | 171   |
| Vegetables - excluding potatoes (g/day)          | 162                     | 146                     | 162                   | 156   | 157   |

Notes: Sodium intake does not include sodium from table salt. Salt intake = sodium x 2.52.  
Consumption assumed from purchase data.

Source: Office for National Statistics (2006) *Expenditure and Food Survey 2004/05*. The Stationery Office: London.

*Table 5.12 Total energy available from fat and availability of fruit and vegetables by country, 2003, selected European countries*

|                        | % energy<br>from fat | fruit and veg<br>per person<br>per year (kg) |                     | % energy<br>from fat | fruit and veg<br>per person<br>per year (kg) |
|------------------------|----------------------|----------------------------------------------|---------------------|----------------------|----------------------------------------------|
| Albania                | 27.1                 | 264.4                                        | Lithuania           | 27.9                 | 168.5                                        |
| Armenia                | 19.6                 | 237.6                                        | Luxembourg          | 40.3                 | 199.5                                        |
| Austria                | 38.8                 | 227.6                                        | FYR Macedonia       | 29.6                 | 235.7                                        |
| Azerbaijan             | 14.0                 | 192.0                                        | Malta               | 28.1                 | 243.1                                        |
| Belarus                | 29.5                 | 155.0                                        | Netherlands         | 36.0                 | 255.5                                        |
| Belgium                | 40.3                 | 199.5                                        | Norway              | 37.2                 | 190.7                                        |
| Bosnia and Herzegovina | 18.0                 | 225.3                                        | Poland              | 29.8                 | 147.9                                        |
| Bulgaria               | 30.1                 | 190.1                                        | Portugal            | 34.2                 | 297.2                                        |
| Croatia                | 28.7                 | 199.8                                        | Republic of Moldova | 18.4                 | 153.9                                        |
| Cyprus                 | 36.3                 | 278.5                                        | Romania             | 26.3                 | 244.3                                        |
| Czech Republic         | 31.2                 | 151.4                                        | Russia              | 24.7                 | 144.8                                        |
| Denmark                | 35.9                 | 248.7                                        | Serbia              | 39.5                 | 224.2                                        |
| Estonia                | 27.4                 | 174.4                                        | Slovakia            | 33.5                 | 129.7                                        |
| Finland                | 36.2                 | 162.6                                        | Slovenia            | 32.4                 | 215.4                                        |
| France                 | 41.8                 | 238.4                                        | Spain               | 41.2                 | 256.0                                        |
| Georgia                | 18.1                 | 142.4                                        | Sweden              | 35.5                 | 193.6                                        |
| Germany                | 36.7                 | 203.7                                        | Switzerland         | 40.1                 | 201.1                                        |
| Greece                 | 35.6                 | 422.7                                        | Tajikistan          | 19.1                 | 84.5                                         |
| Hungary *              | 38.0                 | 176.3                                        | Turkey              | 24.7                 | 338.1                                        |
| Iceland *              | 36.2                 | 167.7                                        | Turkmenistan        | 23.0                 | 136.1                                        |
| Ireland *              | 32.6                 | 182.9                                        | Ukraine             | 24.1                 | 152.4                                        |
| Israel *               | 34.1                 | 336.4                                        | United Kingdom      | 35.1                 | 207.4                                        |
| Italy                  | 38.2                 | 309.3                                        | Uzbekistan          | 25.0                 | 146.4                                        |
| Kazakhstan             | 25.9                 | 146.8                                        | Europe average      | 31.9                 | 233.2                                        |
| Kyrgyzstan             | 15.6                 | 158.4                                        | EU-15 average       | 37.9                 | 242.5                                        |
| Latvia                 | 33.1                 | 153.2                                        | EU-25 average       | 36.9                 | 232.6                                        |

Notes: \* data for these countries are for 2002. Fruit and vegetables do not include potatoes. Amount available refers to fruit and vegetables produced nationally, plus imports, minus exports.

Source: World Health Organization (2005) European Health for All statistical database. <http://www.euro.who.int/hfad/b>

Figure 5.12a Percentage of total energy available from fat by country, 2003, selected European countries, with WHO target

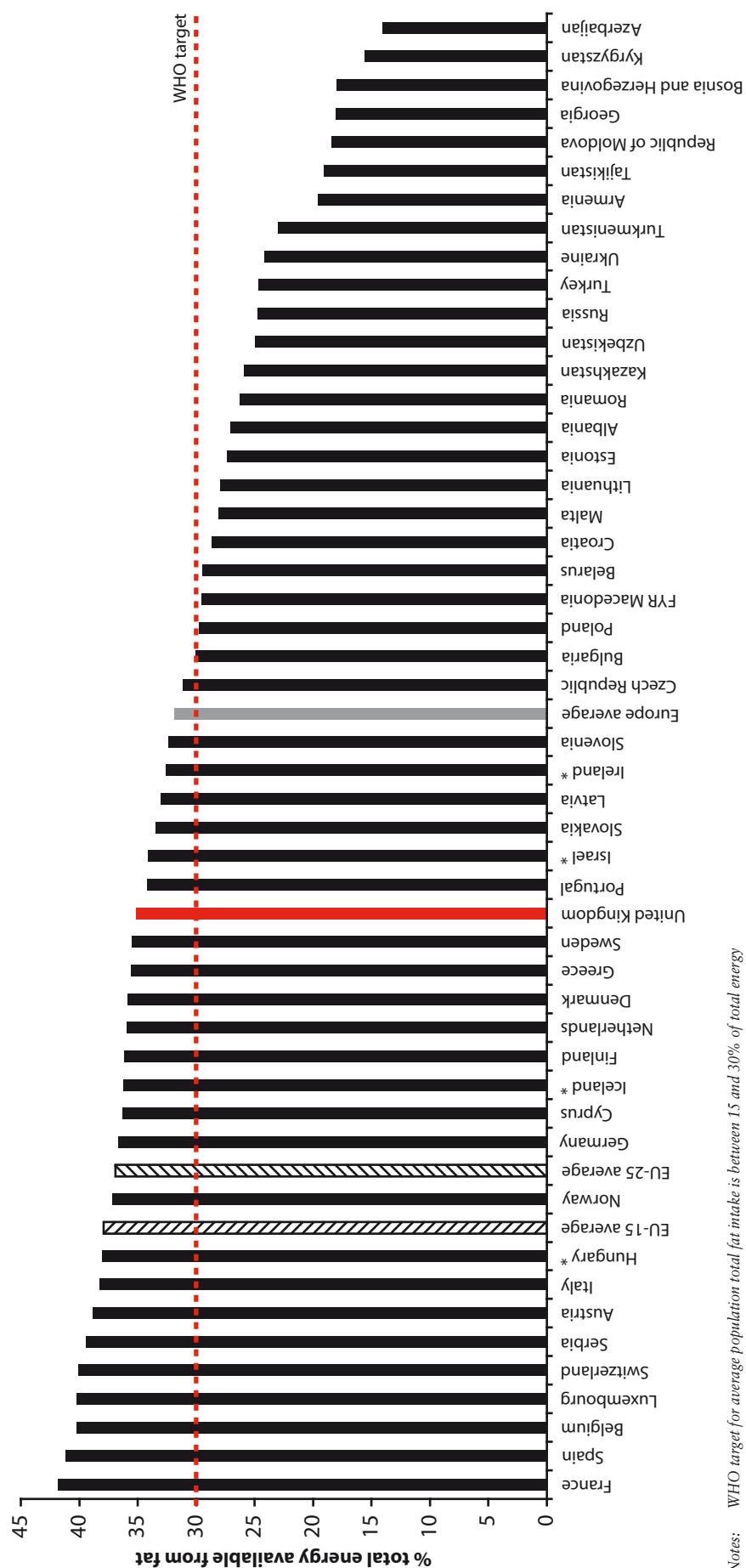
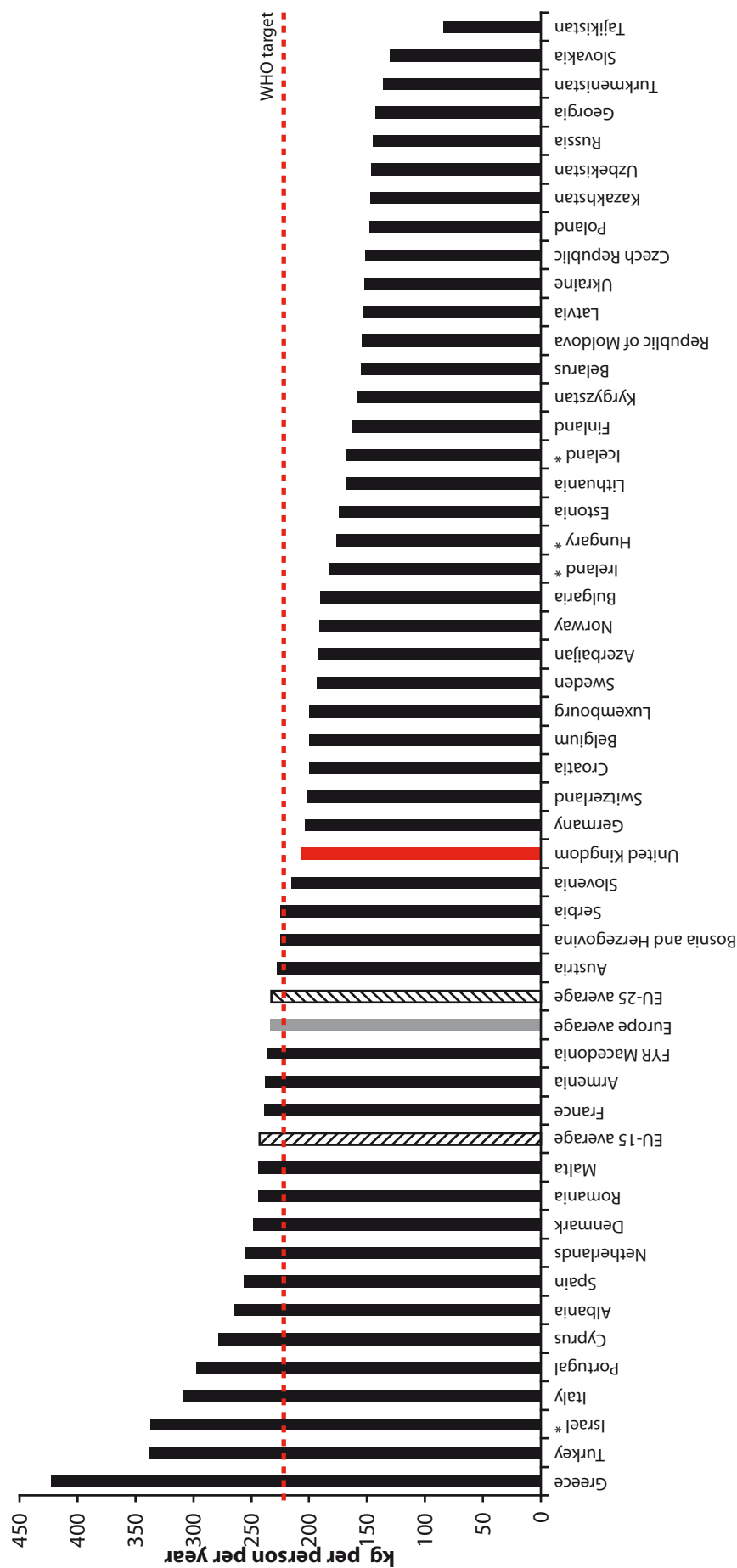


Figure 5.12b Availability of fruit and vegetables by country, 2003, selected European countries, with WHO target



Notes: WHO international target is 400g fruit and vegetable consumption per person per day. Target of 219 kg of available fruit and vegetables per person per year has been adjusted for wastage (see source for method).

# 6. Physical Activity

People who are physically active have a lower risk of CHD. To produce the maximum benefit the activity needs to be regular and aerobic. Aerobic activity involves using the large muscle groups in the arms, legs and back steadily and rhythmically so that breathing and heart rate are significantly increased.

Recent research from the World Health Organization highlighted the importance of physical inactivity as a major risk factor for CHD. The 2002 World Health Report estimated that around 3% of all disease burden in developed countries was caused by physical inactivity, and that over 20% of CHD and 10% of stroke in developed countries was due to physical inactivity (less than 2.5 hours per week moderate intensity activity or 1 hour per week vigorous activity)<sup>1</sup>.

## *Public health targets*

Since 1996, the Government recommendation on physical activity has been that adults should participate in a minimum of 30 minutes of at least moderate intensity activity (such as brisk walking, cycling or climbing the stairs) on five or more days of the week. In 2004 the Chief Medical Officer restated this recommendation in the report *At least five a week*, and highlighted the importance of physical activity in the prevention of CHD, diabetes and obesity<sup>2</sup>.

*Choosing Activity: a physical activity action plan* was published in 2005<sup>3</sup>. This document outlined key commitments relating to physical activity contained within the White Paper *Choosing Health* which aimed to increase levels of physical activity in adults and children in England<sup>4</sup>.

A target for physical activity in England was proposed in 2002 by the Government's Strategy Unit: to increase the proportion of the adult population who participate in 30 minutes of moderate physical activity five or more times a week to 70% by 2020 (Table 6.1)<sup>5</sup>. This is a very ambitious target requiring participation levels in England to more than double in just over 15 years. HM Treasury proposed that the proportion of children who spend a minimum of two hours per week on high quality sport should increase from 25% in 2002 to 75% by 2006 and 85% by 2008<sup>6</sup>.

In 2003 the Scottish Health Executive set a target that by 2022, 50% of the adult population should participate in 30 minutes of moderate activity on 5 or more occasions each week. The Scottish target for children is to increase the number of children taking at least one hour a day of moderate activity on 5 or more days a week to 80% by 2022<sup>7</sup> (Table 6.1).

There are no physical activity targets set for Wales or Northern Ireland.

## *Overall levels*

Physical activity levels are low in the UK. Health Survey for England data show that, in 2003, only 37% of men and 24% of women met the current physical activity guidelines suggested by the Government (Table 6.2 and Figure 6.2a). In 2003 over one third of English adults were inactive, that is, participated in less than one occasion of 30 minutes activity a week.

## *Sex and age differences*

Physical activity declines rapidly with increasing age for both men and women, although for women this decline did not begin until the mid-forties (Table 6.2 and Figures 6.2b and 6.2c). In England 53% of men and 30% of women aged 16 to 24 were physically active at the recommended level compared to 17% of men and 13% of women in the 65 to 74 age group.

Between 1997 and 2004, the Health Survey for England reported that the overall proportion of adults meeting the recommended level of physical activity increased from 32% to 37% in men and from 21% to 25% in women (Table 6.3).

## *Children and young people*

It is recommended that all children and young people aged 5 to 18 participate in physical activity of at least moderate intensity for one hour a day<sup>2,3</sup>. In 2002 in England, 70% of boys and 61% of girls aged 2 to 15 were active for at least an hour a day (Table 6.4). In girls, participation rates declined with age after about age 10. By the age of 15, only 50% of girls reached the recommended level of activity (Figures 6.4a and 6.4b).

## *National and regional differences*

In 2003, levels of physical activity in Scotland were higher for men in all age groups than in England (Table 6.2). This was particularly the case for 25 to 34 year olds, where 57% met physical activity recommendations in Scotland compared to 44% in England. This was also the case for women: 40% of 25 to 34 year olds met recommendations in Scotland compared to 29% in England.

Within England there is some variation in the level of activity by region (Table 6.5). In 2003 men were more likely to meet the physical activity recommendations in the South West (42%), West Midlands (41%), North East (40%) and North West (40%). Women were more likely to meet the physical activity guidelines in the South West (27%), South East (27%), the North East (26%) and London (26%).

## *Socio-economic differences*

Socio-economic differences in physical activity are complex. Among English men in 2003, 32% of those in managerial or professional jobs met current recommended levels of physical activity compared to 49% of small employers and own account workers.

In English women, the pattern was reversed: 34% of women with managerial and professional jobs met the current recommended levels of physical activity compared to between 24% and 29% of women from other socio-economic groups (Table 6.6).

The pattern for physical activity and income group is also complex (Table 6.7).

## *Ethnic differences*

Compared with the general population, in 2004 Indian, Pakistani, Bangladeshi and Chinese men and women were less likely to meet physical activity recommendations. Only 26% of Bangladeshi men and 11% of Bangladeshi women met the current recommended physical activity levels. Irish men and Black Caribbean women were the most likely to be physically active at the recommended level (Table 6.8 and Figure 6.8).

## *International differences*

Levels of activity vary across European member states, with levels of activity in the UK falling just below the EU average (Table 6.9 and Figure 6.9).

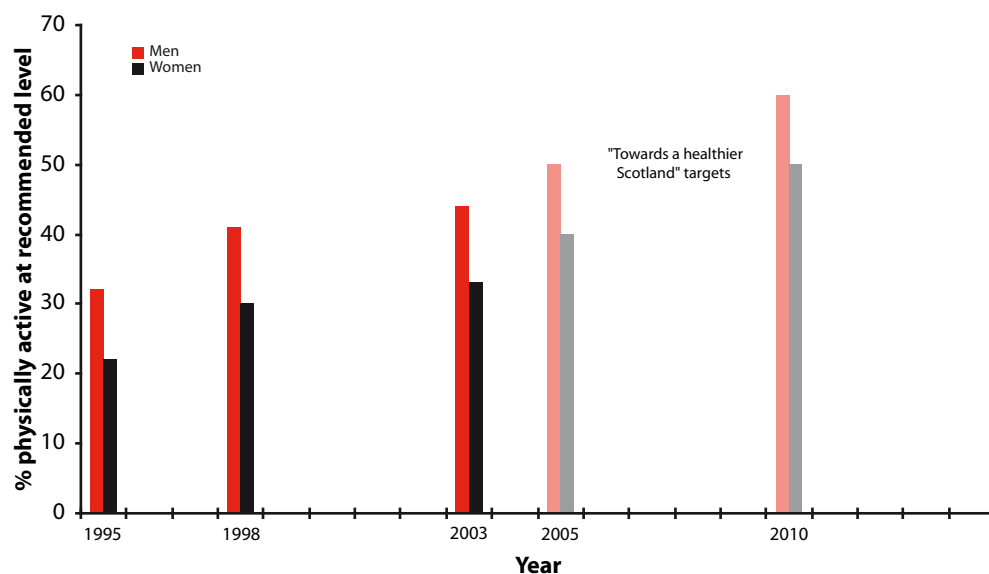
1. World Health Organization (2002) *The World Health Report 2002. Reducing Risks, Promoting Healthy Life*. World Health Organization: Geneva.
2. Department of Health (2004) *At least five a week: evidence on the impact of physical activity and its relationship to health*. Department of Health: London. See [www.dh.gov.uk/assetRoot/04/08/09/81/04080981.pdf](http://www.dh.gov.uk/assetRoot/04/08/09/81/04080981.pdf)
3. Department of Health (2005) *Choosing Activity: a physical activity action plan*. Department of Health: London.
4. Department of Health (2004) *Choosing Health: making healthy choices easier*. Department of Health: London.
5. Strategy Unit (2002) *Game Plan: a strategy for delivering Government's sport and physical activity objectives*. A joint Department of Culture, Media and Sport and Strategy Unit Report. HMSO: London.
6. HM Treasury (2004) *Spending Review*. Department for Culture, Media and Sport. HMSO: London. See [www.hm-treasury.gov.uk/media/96/5/FB/sr2004\\_ch18.PDF](http://www.hm-treasury.gov.uk/media/96/5/FB/sr2004_ch18.PDF)
7. The Scottish Executive (2003). *Let's Make Scotland More Active: a strategy for physical activity*. The Scottish Executive: Edinburgh.

**Table 6.1**     *Physical activity targets for the United Kingdom*

|                                     |                                                                                                                                                                                                                                                                                            |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>England<sup>1,2</sup></b>        |                                                                                                                                                                                                                                                                                            |
| Adults <sup>1</sup>                 | By 2020, 70% of individuals to be undertaking 30 minutes of physical activity on at least 5 days a week. An interim target of 50% of individuals by 2011                                                                                                                                   |
| Children <sup>2</sup>               | To increase the proportion of school children in England who spend a minimum of two hours each week on high quality sport from 25% in 2002, to 75% by 2006 and 85% in 2008                                                                                                                 |
| <b>Scotland<sup>3</sup></b>         |                                                                                                                                                                                                                                                                                            |
| Adults - <i>Target</i>              | To increase the proportion of all adults aged over 16 years taking the minimum recommended levels of physical activity (30 minutes of moderate activity on 5 or more occasions each week) to 50% by 2022. To meet this goal will need average increases of 1% a year across the population |
| Children - <i>Target</i>            | To increase the proportion of all children aged 16 and under taking the minimum recommended levels of physical activity (1 hour a day of moderate activity on 5 or more days a week) to 80% by 2022. To meet this goal will need average increases of 1% a year across the population      |
| <b>Wales</b>                        | No target set                                                                                                                                                                                                                                                                              |
| <b>Northern Ireland<sup>4</sup></b> | No target set                                                                                                                                                                                                                                                                              |

1. Strategy Unit (2002). *Game Plan: a strategy for delivering Government's sport and physical activity objectives*. A joint Department of Culture, Media and Sport and Strategy Unit Report. HMSO: London.
2. HM Treasury (2004) *Spending review*. Department for Culture, Media and Sport. HMSO: London. See [www.hm-treasury.gov.uk/media/965/FB/sr2004\\_ch18.PDF](http://www.hm-treasury.gov.uk/media/965/FB/sr2004_ch18.PDF)
3. The Scottish Executive (2003). *Let's make Scotland more active: a strategy for physical activity*. The Scottish Executive: Edinburgh.
4. New strategies for CVD in Northern Ireland are being developed by the Department of Health, Social Services and Public Safety and were issued for consultation in 2004.

**Fig 6.1**      *Physical activity levels, 1995, 1998 and 2003, Scotland, with “Towards a healthier Scotland” national targets*



Source: *The Scottish Executive (2005) The Scottish Health Survey 2003. The Stationery Office: Edinburgh and previous editions.*  
*Due to important differences to the relevant questions in the health survey questionnaire, comparisons of the 1998 and 2003 results with 1995 results should be made with caution.*

**Table 6.2 Physical activity level by sex and age, England and Scotland 2003, Wales 2004/05 and Northern Ireland 2001**

| <i>Summary physical activity level</i> | <i>All ages %</i> | <i>16–24 %</i> | <i>25–34 %</i> | <i>35–44 %</i> | <i>45–54 %</i> | <i>55–64 %</i> | <i>65–74 %</i> | <i>75+ %</i> |
|----------------------------------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|
| <b>ENGLAND</b>                         |                   |                |                |                |                |                |                |              |
| <b>MEN</b>                             |                   |                |                |                |                |                |                |              |
| High (above recommended level)         | 37                | 53             | 44             | 41             | 38             | 32             | 17             | 8            |
| Medium                                 | 31                | 29             | 36             | 35             | 31             | 29             | 32             | 20           |
| Low                                    | 32                | 18             | 20             | 24             | 32             | 39             | 52             | 72           |
| <i>Weighted base</i>                   | 7177              | 1,044          | 1,272          | 1,412          | 1,180          | 1,037          | 731            | 501          |
| <i>Unweighted base</i>                 | 6581              | 744            | 1,024          | 1,260          | 1,098          | 1,097          | 807            | 551          |
| <b>WOMEN</b>                           |                   |                |                |                |                |                |                |              |
| High (above recommended level)         | 24                | 30             | 29             | 30             | 31             | 23             | 13             | 3            |
| Medium                                 | 36                | 39             | 45             | 42             | 34             | 36             | 31             | 14           |
| Low                                    | 40                | 31             | 27             | 28             | 35             | 41             | 56             | 82           |
| <i>Weighted base</i>                   | 7611              | 1,029          | 1,279          | 1,437          | 1,199          | 1,071          | 813            | 782          |
| <i>Unweighted base</i>                 | 8210              | 886            | 1,279          | 1,615          | 1,278          | 1,304          | 948            | 900          |
| <b>SCOTLAND</b>                        |                   |                |                |                |                |                |                |              |
| <b>MEN</b>                             |                   |                |                |                |                |                |                |              |
| High (above recommended level)         | 42                | 59             | 57             | 45             | 40             | 35             | 23             | 13           |
| Medium                                 | 28                | 22             | 26             | 34             | 31             | 26             | 30             | 26           |
| Low                                    | 30                | 19             | 18             | 21             | 29             | 39             | 47             | 61           |
| <i>Weighted base</i>                   | 3857              | 580            | 610            | 761            | 670            | 569            | 406            | 260          |
| <i>Unweighted base</i>                 | 3610              | 336            | 455            | 733            | 616            | 633            | 510            | 327          |
| <b>WOMEN</b>                           |                   |                |                |                |                |                |                |              |
| High (above recommended level)         | 30                | 36             | 40             | 39             | 35             | 28             | 16             | 6            |
| Medium                                 | 35                | 36             | 42             | 40             | 38             | 37             | 31             | 16           |
| Low                                    | 35                | 27             | 18             | 22             | 27             | 35             | 53             | 78           |
| <i>Weighted base</i>                   | 4538              | 404            | 600            | 887            | 795            | 778            | 581            | 493          |
| <i>Unweighted base</i>                 | 4291              | 566            | 658            | 813            | 691            | 602            | 493            | 468          |
| <b>WALES</b>                           |                   |                |                |                |                |                |                |              |
| <b>MEN</b>                             |                   |                |                |                |                |                |                |              |
| High (above recommended level)         | 36                | 47             | 40             | 42             | 39             | 32             | 26             | 15           |
| Medium                                 | 33                | 35             | 41             | 35             | 32             | 30             | 27             | 23           |
| Low                                    | 31                | 17             | 20             | 22             | 30             | 39             | 48             | 62           |
| <b>WOMEN</b>                           |                   |                |                |                |                |                |                |              |
| High (above recommended level)         | 23                | 27             | 23             | 29             | 25             | 25             | 17             | 9            |
| Medium                                 | 41                | 52             | 53             | 46             | 43             | 37             | 34             | 18           |
| Low                                    | 36                | 20             | 23             | 25             | 32             | 38             | 48             | 73           |
| <b>NORTHERN IRELAND</b>                |                   |                |                |                |                |                |                |              |
| <b>MEN</b>                             |                   |                |                |                |                |                |                |              |
| High (above recommended level)         | 30                | 38             | 34             | 36             | 34             | 23             | 20             | 15           |
| Medium                                 | 46                | 55             | 54             | 47             | 45             | 44             | 39             | 27           |
| Low                                    | 24                | 8              | 12             | 17             | 21             | 32             | 41             | 58           |
| <i>Base</i>                            | 1968              | 250            | 337            | 347            | 351            | 277            | 266            | 140          |
| <b>WOMEN</b>                           |                   |                |                |                |                |                |                |              |
| High (above recommended level)         | 26                | 27             | 32             | 35             | 31             | 24             | 17             | 7            |
| Medium                                 | 48                | 60             | 55             | 55             | 46             | 46             | 39             | 27           |
| Low                                    | 25                | 14             | 13             | 10             | 23             | 30             | 44             | 66           |
| <i>Base</i>                            | 2722              | 345            | 476            | 501            | 466            | 357            | 319            | 258          |

*Notes:* High = 30 minutes or more on at least 5 days a week (above recommended level).

Medium = 30 minutes or more on 1 to 4 days a week.

Low = lower level of activity.

Information on bases for Welsh Health Survey unavailable.

*Source:* Department of Health (2005) Health Survey for England 2004. The Stationery Office: London.

Scottish Health Executive (2005) The Scottish Health Survey 2003: Results. <http://www.scotland.gov.uk/Publications/2005/11/25145024/50251>

National Assembly for Wales (2005) Welsh Health Survey 2004/05.

<http://new.wales.gov.uk/topics/statistics/publications/health-survey2004-05/?lang=en>

Northern Ireland Statistics and Research Agency (2001) Northern Ireland Health and Social Wellbeing Survey 2001:

Physical level tables.

<http://www.csu.nisra.gov.uk/archive/Surveys/HWB/results/2001/Physical%20activity/Activity%20level%20tables.PDF>

Figure 6.2a Proportion meeting physical activity guideline by age and country, men, latest available year, England, Scotland, Wales and Northern Ireland

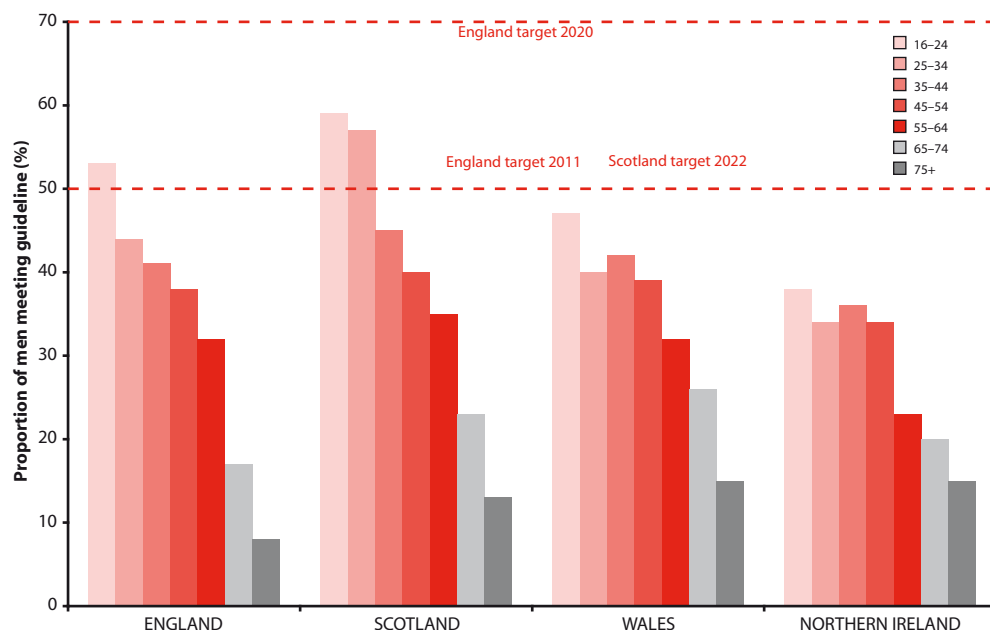


Figure 6.2b Proportion meeting physical activity guideline by age and country, women, latest available year, England, Scotland, Wales and Northern Ireland



**Table 6.3** *Proportion meeting the physical activity guideline by sex and age, 1997, 1998, 2003 and 2004, England*

|                        | All ages<br>% | 16–24<br>% | 25–34<br>% | 35–44<br>% | 45–54<br>% | 55–64<br>% | 65–74<br>% | 75+<br>% |
|------------------------|---------------|------------|------------|------------|------------|------------|------------|----------|
| <b>MEN</b>             |               |            |            |            |            |            |            |          |
| 1997                   | 32            | 49         | 41         | 37         | 32         | 23         | 12         | 7        |
| 1998                   | 34            | 53         | 45         | 41         | 34         | 30         | 14         | 6        |
| 2003                   | 36            | 52         | 44         | 41         | 38         | 32         | 17         | 8        |
| 2004                   | 37            | 56         | 46         | 41         | 37         | 32         | 18         | 8        |
| Unweighted base (2004) | 2,873         | 291        | 446        | 535        | 439        | 508        | 378        | 276      |
| Weighted base (2004)   | 3,256         | 485        | 556        | 647        | 530        | 477        | 329        | 231      |
| <b>WOMEN</b>           |               |            |            |            |            |            |            |          |
| 1997                   | 21            | 26         | 26         | 29         | 24         | 19         | 8          | 5        |
| 1998                   | 21            | 28         | 28         | 28         | 25         | 18         | 9          | 3        |
| 2003                   | 24            | 30         | 29         | 30         | 31         | 23         | 13         | 3        |
| 2004                   | 25            | 32         | 30         | 32         | 30         | 20         | 14         | 4        |
| Unweighted base (2004) | 3,818         | 364        | 550        | 746        | 626        | 621        | 482        | 429      |
| Weighted base (2004)   | 3,436         | 472        | 563        | 653        | 541        | 491        | 364        | 353      |

Notes: Data for 2003 and 2004 are weighted for non response.

Adults aged 16 and over.

Activity sessions lasting for less than 30 minutes in 1997 and 1998 were excluded so that data were comparable with 2003 and 2004.

Source: Department of Health (2005) Health Survey for England 2004. The Stationery Office: London.

**Table 6.4** *Physical activity level among children aged 2 to 15 by sex and age, 2002, England*

| Summary physical activity level              | All ages<br>% | 2<br>% | 3<br>% | 4<br>% | 5<br>% | 6<br>% | 7<br>% | 8<br>% | 9<br>% | 10<br>% | 11<br>% | 12<br>% | 13<br>% | 14<br>% | 15<br>% |
|----------------------------------------------|---------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| <b>BOYS</b>                                  |               |        |        |        |        |        |        |        |        |         |         |         |         |         |         |
| High                                         | 70            | 67     | 76     | 73     | 67     | 70     | 71     | 68     | 69     | 72      | 77      | 71      | 69      | 62      | 69      |
| Medium                                       | 13            | 13     | 12     | 15     | 17     | 14     | 15     | 14     | 14     | 12      | 9       | 11      | 17      | 14      | 14      |
| Low                                          | 17            | 20     | 12     | 12     | 17     | 16     | 14     | 18     | 17     | 16      | 14      | 18      | 15      | 24      | 17      |
| % physically active at the recommended level | 70            | 67     | 76     | 73     | 67     | 70     | 71     | 68     | 69     | 72      | 77      | 71      | 69      | 62      | 69      |
| Weighted base                                | 4,201         | 283    | 266    | 285    | 287    | 304    | 336    | 317    | 296    | 331     | 322     | 299     | 290     | 309     | 275     |
| Unweighted base                              | 3,629         | 243    | 231    | 254    | 242    | 262    | 284    | 271    | 249    | 284     | 283     | 248     | 258     | 273     | 247     |
| <b>GIRLS</b>                                 |               |        |        |        |        |        |        |        |        |         |         |         |         |         |         |
| High                                         | 61            | 65     | 78     | 65     | 66     | 69     | 65     | 62     | 62     | 66      | 64      | 52      | 50      | 44      | 50      |
| Medium                                       | 16            | 12     | 11     | 14     | 16     | 13     | 13     | 19     | 15     | 17      | 16      | 22      | 23      | 21      | 15      |
| Low                                          | 22            | 23     | 11     | 21     | 18     | 18     | 22     | 19     | 23     | 17      | 20      | 26      | 27      | 35      | 35      |
| % physically active at the recommended level | 61            | 65     | 78     | 65     | 66     | 69     | 65     | 62     | 62     | 66      | 64      | 52      | 50      | 44      | 50      |
| Weighted base                                | 4,058         | 283    | 278    | 261    | 301    | 296    | 298    | 300    | 300    | 281     | 310     | 304     | 296     | 280     | 270     |
| Unweighted base                              | 3,504         | 252    | 243    | 235    | 256    | 244    | 258    | 236    | 256    | 232     | 268     | 261     | 269     | 244     | 250     |

Notes: High = 60 minutes or more on all 7 days in last week.

Medium = 30–59 minutes on all 7 days.

Low = lower level of activity.

Source: Department of Health (2003) Health Survey for England: The Health of Children and Young People 2002. The Stationery Office: London.

**Table 6.5** *Physical activity levels by Government Office Region and sex, adults aged 16 and over, 2003, England*

| Summary physical activity level* | Government Office Region |            |                        |               |               |              | London | South East | South West |
|----------------------------------|--------------------------|------------|------------------------|---------------|---------------|--------------|--------|------------|------------|
|                                  | North East               | North West | Yorkshire & the Humber | East Midlands | West Midlands | East England |        |            |            |
| MEN                              | %                        | %          | %                      | %             | %             | %            | %      | %          | %          |
| High                             | 40                       | 40         | 38                     | 38            | 41            | 36           | 32     | 38         | 42         |
| Medium                           | 27                       | 29         | 28                     | 31            | 28            | 34           | 32     | 37         | 33         |
| Low                              | 34                       | 31         | 34                     | 31            | 31            | 29           | 36     | 25         | 26         |
| Weighted base                    | 368                      | 962        | 708                    | 635           | 769           | 813          | 1,063  | 1,151      | 709        |
| WOMEN                            |                          |            |                        |               |               |              |        |            |            |
| High                             | 26                       | 25         | 23                     | 24            | 22            | 24           | 26     | 27         | 27         |
| Medium                           | 35                       | 35         | 37                     | 35            | 36            | 40           | 34     | 36         | 37         |
| Low                              | 40                       | 40         | 40                     | 40            | 42            | 36           | 41     | 37         | 35         |
| Weighted base                    | 416                      | 1,024      | 765                    | 659           | 812           | 843          | 1,092  | 1,231      | 768        |

Notes: \*High activity level = 30 minutes or more on at least 5 days a week.

Medium = 30 minutes or more on 1 to 4 days a week.

Low = lower levels of activity.

Results presented for prevalence in a standardised population only.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 6.6** *Physical activity level by sex and socio-economic classification, adults aged 16 and over, 2003, England*

| Summary physical activity level | Socio-economic classification |              |                                       |                               |                        |
|---------------------------------|-------------------------------|--------------|---------------------------------------|-------------------------------|------------------------|
|                                 | Managerial & professional     | Intermediate | Small employers & own account workers | Lower supervisory & technical | Semi-routine & routine |
|                                 | %                             | %            | %                                     | %                             | %                      |
| MEN                             |                               |              |                                       |                               |                        |
| High                            | 32                            | 35           | 49                                    | 45                            | 43                     |
| Medium                          | 40                            | 35           | 23                                    | 25                            | 22                     |
| Low                             | 28                            | 30           | 28                                    | 30                            | 35                     |
| Unweighted base                 | 2,686                         | 454          | 775                                   | 915                           | 1,649                  |
| Weighted base                   | 2,932                         | 506          | 825                                   | 969                           | 1,814                  |
| WOMEN                           |                               |              |                                       |                               |                        |
| High                            | 34                            | 25           | 29                                    | 27                            | 24                     |
| Medium                          | 39                            | 38           | 35                                    | 35                            | 33                     |
| Low                             | 36                            | 37           | 36                                    | 38                            | 43                     |
| Unweighted base                 | 3,086                         | 790          | 805                                   | 933                           | 2,367                  |
| Weighted base                   | 2,898                         | 714          | 752                                   | 875                           | 2,153                  |

Notes: Age-standardised percentages. For method of age-standardisation see source.

Data are weighted for non-response.

High = 30 minutes or more on at least 5 days a week (above recommended level).

Medium = 30 minutes or more on 1 to 4 days a week.

Low = lower level of activity.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 6.7**     *Physical activity level by sex and income, adults aged 16 and over, 2003, England*

| <i>Summary physical activity level</i> | Equivalised annual household income quintile |       |       |       |           |
|----------------------------------------|----------------------------------------------|-------|-------|-------|-----------|
|                                        | Lowest %                                     | 4th % | 3rd % | 2nd % | Highest % |
| <b>MEN</b>                             |                                              |       |       |       |           |
| High                                   | 32                                           | 41    | 43    | 40    | 35        |
| Medium                                 | 25                                           | 26    | 27    | 36    | 40        |
| Low                                    | 43                                           | 34    | 30    | 25    | 25        |
| <i>Unweighted base</i>                 | 962                                          | 912   | 1,180 | 1,286 | 1,277     |
| <i>Weighted base</i>                   | 1,031                                        | 971   | 1,277 | 1,417 | 1,389     |
| <b>WOMEN</b>                           |                                              |       |       |       |           |
| High                                   | 23                                           | 26    | 25    | 26    | 27        |
| Medium                                 | 32                                           | 33    | 35    | 40    | 42        |
| Low                                    | 45                                           | 40    | 40    | 35    | 32        |
| <i>Unweighted base</i>                 | 1,410                                        | 1,271 | 1,547 | 1,426 | 1,243     |
| <i>Weighted base</i>                   | 1,276                                        | 1,134 | 1,422 | 1,364 | 1,171     |

*Notes:*    Age-standardised percentages. For method of age-standardisation see source.

             Data are weighted for non-response.

             High = 30 minutes or more on at least 5 days a week (above recommended level).

             Medium = 30 minutes or more on 1 to 4 days a week.

             Low = lower level of activity.

*Source:*    Department of Health (2004) *Health Survey for England 2003*. The Stationery Office: London.

**Table 6.8** *Physical activity by sex and ethnic group, 2004, England*

| Summary physical activity level | General population | Black Caribbean | Black African | Indian | Pakistani | Bangladeshi | Chinese | Irish |
|---------------------------------|--------------------|-----------------|---------------|--------|-----------|-------------|---------|-------|
| <b>MEN</b>                      | %                  | %               | %             | %      | %         | %           | %       | %     |
| High                            | 37                 | 37              | 35            | 30     | 28        | 26          | 30      | 39    |
| Medium                          | 31                 | 29              | 30            | 26     | 21        | 23          | 32      | 28    |
| Low                             | 32                 | 34              | 35            | 44     | 51        | 51          | 38      | 33    |
| Weighted base                   | 46,089             | 477             | 373           | 901    | 420       | 177         | 151     | 1,776 |
| Unweighted base                 | 2,873              | 409             | 386           | 549    | 429       | 408         | 348     | 497   |
| <b>WOMEN</b>                    | %                  | %               | %             | %      | %         | %           | %       | %     |
| High                            | 25                 | 31              | 29            | 23     | 14        | 11          | 17      | 29    |
| Medium                          | 36                 | 30              | 28            | 32     | 34        | 21          | 36      | 38    |
| Low                             | 39                 | 39              | 43            | 45     | 52        | 68          | 47      | 33    |
| Weighted base                   | 48,643             | 673             | 472           | 1,067  | 499       | 207         | 163     | 2,369 |
| Unweighted base                 | 3,818              | 648             | 467           | 634    | 508       | 477         | 375     | 656   |

Notes: Age-standardised percentages (standardised risk ratios x percentage in general population). For observed values see source.

High = 30 minutes or more physical activity on at least 5 days a week (recommended level).

Medium = 30 minutes or more on 1 to 4 days a week.

Low = lower level of activity.

Source: Department of Health (2005) Health Survey for England 2004. The Stationery Office: London.

**Figure 6.8** *Percentage of adults meeting physical activity guidelines by sex and ethnic group, 2004, England*

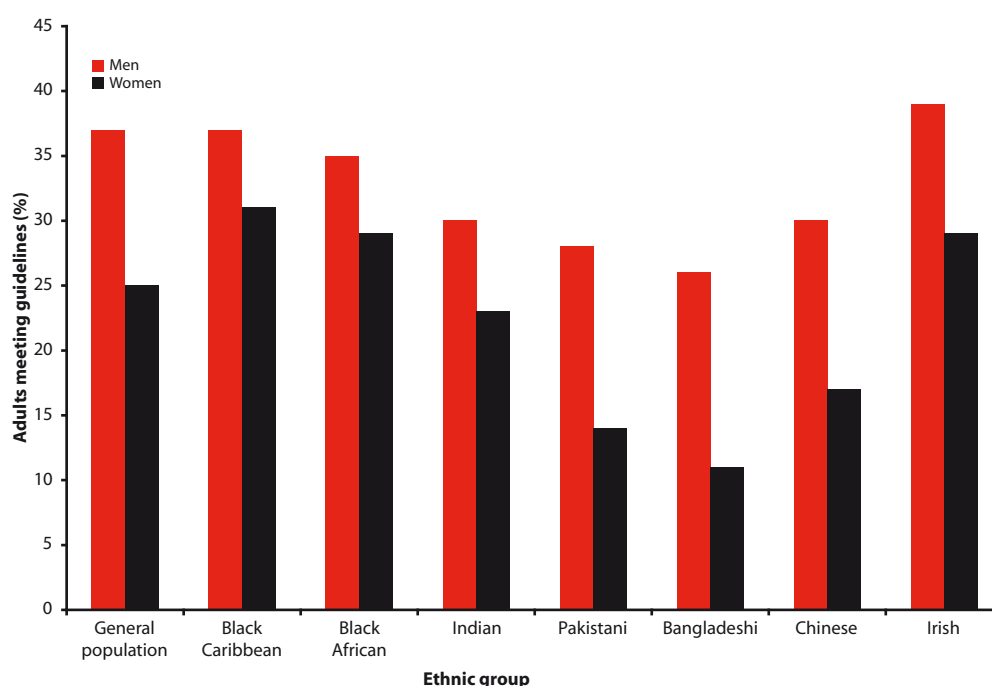
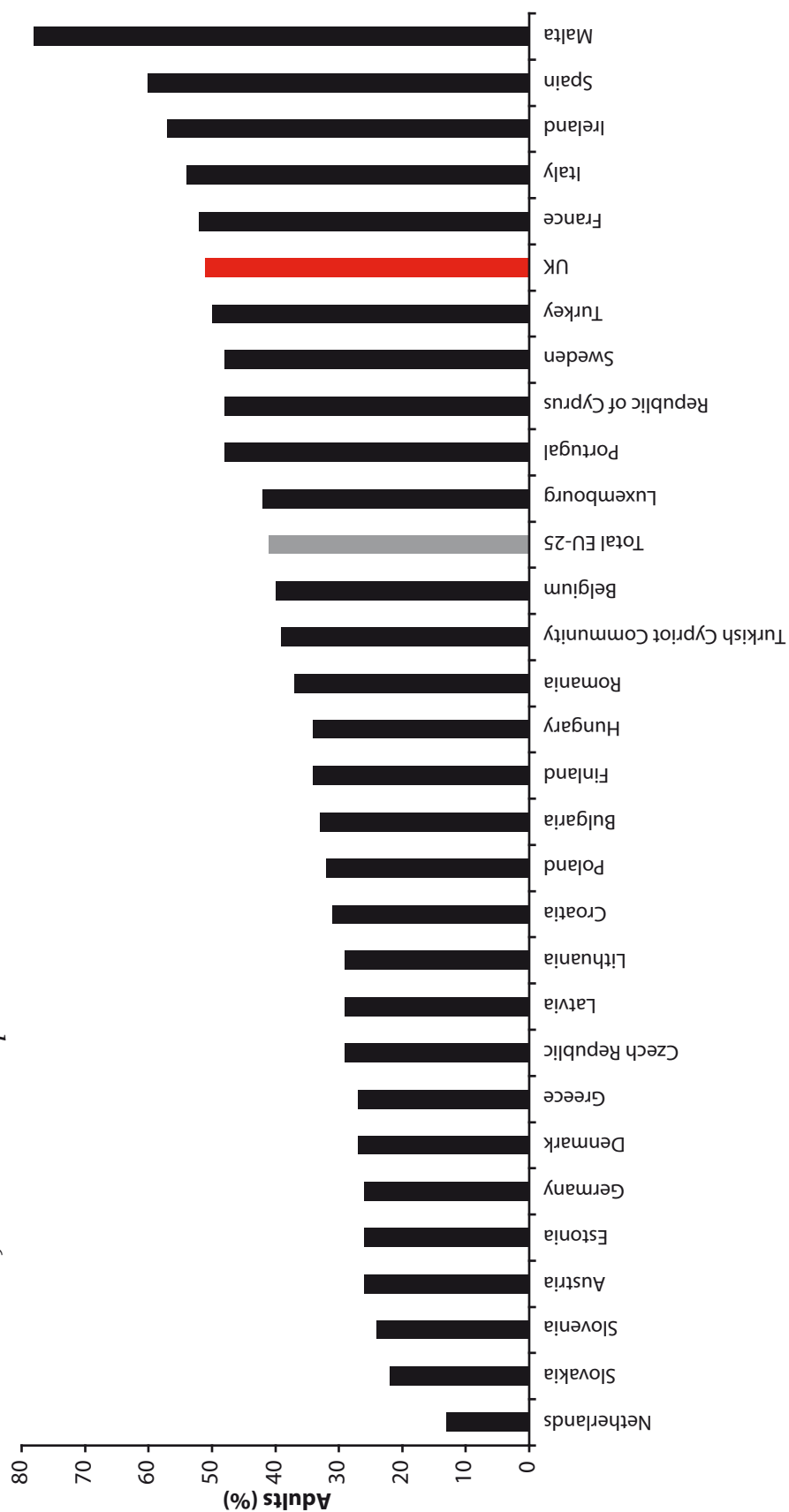


Table 6.9 Self-reported physical activity levels, 2005, selected European countries

|                           | Number of days in last week walked for 10 minutes or more |     |        |            |    | Number of days in last week undertook moderate physical activity |     |        |            |    | Number of hours spent sitting on a usual day |        |    |            |
|---------------------------|-----------------------------------------------------------|-----|--------|------------|----|------------------------------------------------------------------|-----|--------|------------|----|----------------------------------------------|--------|----|------------|
|                           | None                                                      |     |        |            |    | None                                                             |     |        |            |    | Less than 1                                  |        |    |            |
|                           | 1-3                                                       | 4-6 | 7 days | Don't know |    | 1-3                                                              | 4-6 | 7 days | Don't know |    | 1-3h59                                       | 4-7h59 | 8+ | Don't know |
| EU-25 COUNTRIES           |                                                           |     |        |            |    |                                                                  |     |        |            |    |                                              |        |    |            |
| Austria                   | 18                                                        | 26  | 27     | 3          | 26 | 32                                                               | 27  | 11     | 3          | 6  | 24                                           | 53     | 18 |            |
| Belgium                   | 23                                                        | 28  | 34     | 0          | 40 | 28                                                               | 14  | 18     | 0          | 2  | 27                                           | 42     | 29 | 1          |
| Czech Republic            | 10                                                        | 16  | 21     | 5          | 29 | 30                                                               | 17  | 18     | 5          | 0  | 19                                           | 37     | 34 | 9          |
| Denmark                   | 13                                                        | 19  | 53     | 2          | 27 | 29                                                               | 16  | 28     | 2          | 1  | 17                                           | 44     | 33 | 5          |
| Estonia                   | 8                                                         | 15  | 61     | 1          | 26 | 25                                                               | 17  | 28     | 2          | 1  | 26                                           | 43     | 24 | 5          |
| Finland                   | 12                                                        | 24  | 44     | 2          | 34 | 30                                                               | 16  | 18     | 2          | 5  | 25                                           | 35     | 31 | 3          |
| France                    | 15                                                        | 23  | 48     | 1          | 52 | 22                                                               | 8   | 15     | 2          | 4  | 35                                           | 40     | 18 | 3          |
| Germany                   | 8                                                         | 18  | 50     | 3          | 26 | 27                                                               | 20  | 24     | 3          | 0  | 25                                           | 43     | 22 | 10         |
| Greece                    | 20                                                        | 22  | 38     | 0          | 27 | 30                                                               | 18  | 25     | 0          | 0  | 17                                           | 48     | 35 | 0          |
| Hungary                   | 14                                                        | 19  | 47     | 0          | 34 | 27                                                               | 15  | 25     | 0          | 5  | 40                                           | 34     | 17 | 4          |
| Ireland                   | 21                                                        | 19  | 33     | 1          | 57 | 20                                                               | 14  | 8      | 2          | 2  | 30                                           | 41     | 17 | 10         |
| Italy                     | 22                                                        | 23  | 32     | 2          | 54 | 22                                                               | 12  | 9      | 2          | 9  | 31                                           | 44     | 14 | 3          |
| Latvia                    | 15                                                        | 18  | 50     | 4          | 29 | 26                                                               | 14  | 21     | 9          | 12 | 30                                           | 37     | 20 |            |
| Lithuania                 | 14                                                        | 13  | 51     | 5          | 29 | 21                                                               | 15  | 28     | 6          | 11 | 29                                           | 30     | 16 | 13         |
| Luxembourg                | 15                                                        | 27  | 40     | 1          | 42 | 31                                                               | 10  | 16     | 2          | 3  | 31                                           | 37     | 26 | 2          |
| Malta                     | 32                                                        | 22  | 34     |            | 78 | 12                                                               | 5   | 5      |            | 8  | 34                                           | 35     | 13 | 10         |
| Netherlands               | 8                                                         | 19  | 58     | 1          | 13 | 21                                                               | 23  | 43     | 0          | 0  | 16                                           | 40     | 41 | 2          |
| Poland                    | 13                                                        | 21  | 48     | 2          | 32 | 28                                                               | 18  | 20     | 3          | 2  | 29                                           | 37     | 28 | 4          |
| Portugal                  | 21                                                        | 12  | 43     | 2          | 48 | 16                                                               | 15  | 18     | 3          | 17 | 45                                           | 27     | 11 |            |
| Republic of Cyprus        | 40                                                        | 26  | 23     |            | 48 | 22                                                               | 12  | 18     |            | 1  | 24                                           | 36     | 33 | 6          |
| Slovakia                  | 5                                                         | 18  | 49     | 4          | 22 | 42                                                               | 18  | 13     | 5          | 0  | 30                                           | 41     | 23 | 7          |
| Slovenia                  | 13                                                        | 23  | 45     | 2          | 24 | 31                                                               | 18  | 26     | 1          | 0  | 34                                           | 37     | 26 | 2          |
| Spain                     | 17                                                        | 11  | 50     | 10         | 60 | 12                                                               | 9   | 10     | 8          | 2  | 37                                           | 39     | 15 | 8          |
| Sweden                    | 12                                                        | 28  | 41     | 0          | 48 | 32                                                               | 11  | 9      |            | 1  | 26                                           | 43     | 28 | 2          |
| UK                        | 12                                                        | 17  | 49     | 2          | 51 | 20                                                               | 12  | 15     | 2          | 0  | 27                                           | 40     | 21 | 12         |
| Total EU-25               | 14                                                        | 19  | 46     | 3          | 41 | 24                                                               | 15  | 18     | 3          | 3  | 29                                           | 41     | 21 | 6          |
| OTHER COUNTRIES           |                                                           |     |        |            |    |                                                                  |     |        |            |    |                                              |        |    |            |
| Bulgaria                  | 6                                                         | 10  | 64     | 3          | 33 | 22                                                               | 15  | 25     | 5          | 0  | 34                                           | 40     | 17 | 8          |
| Croatia                   | 20                                                        | 20  | 44     | 1          | 31 | 24                                                               | 15  | 30     | 1          | 2  | 34                                           | 37     | 25 | 2          |
| Romania                   | 13                                                        | 14  | 52     | 1          | 37 | 17                                                               | 21  | 24     | 2          | 32 | 27                                           | 25     | 13 | 2          |
| Turkey                    | 14                                                        | 17  | 52     | 5          | 50 | 19                                                               | 7   | 20     | 3          | 1  | 25                                           | 46     | 15 | 13         |
| Turkish Cypriot Community | 18                                                        | 30  | 26     | 9          | 39 | 26                                                               | 7   | 16     | 12         | 0  | 20                                           | 43     | 19 | 17         |

Source: European Commission (2006) Health and food. Special Eurobarometer 246/Wave 64.3 - TNS Opinion & Social.  
[http://ec.europa.eu/health/ph\\_publication/eb\\_food\\_en.pdf](http://ec.europa.eu/health/ph_publication/eb_food_en.pdf)

Figure 6.9 Percentage of adults who do no moderate-intensity physical activity in a typical week, 2005, selected European countries



# 7. Alcohol

While moderate alcohol consumption (one or two drinks a day) reduces the risk of CVD, at high levels of intake – particularly in ‘binges’ – the risk of CVD is increased.

The World Health Report 2002 estimates that over 9% of all disease burden in developed countries is caused by alcohol consumption and that 2% of CHD and almost 5% of stroke in men in developed countries is due to alcohol. However, the impact of alcohol consumption in women in developed countries is estimated to be positive – if no alcohol were consumed, there would be a 3% increase in CHD and a 16% increase in stroke<sup>1</sup>.

The Government currently advises that ‘regular consumption of between three and four units a day by men’ and ‘between two and three units a day by women of all ages will not lead to any significant health risk’<sup>2</sup>. Consuming in excess of four units on the heaviest drinking day of the week in men, or over three units in women, is not advised, and the Government recommendations on sensible drinking are now based on these daily benchmarks<sup>3</sup>. This advice is consistent with previous advice, based on weekly alcohol consumption; that men should drink less than 21 units a week and women less than 14 units a week<sup>4</sup> (Table 7.1).

## *Public health targets*

The 2004 report by the Academy of Medical Sciences, *Calling Time: The Nation’s drinking as a major health issue*, presented strong evidence that the overall national consumption of alcohol is a major determinant of national alcohol related harm, and recommended the introduction of targets by Government to reduce per capita alcohol consumption in the UK<sup>5</sup>. The *Alcohol Harm Reduction Strategy for England*, published in 2004, did not, however, include such targets<sup>3</sup>. Currently in the UK only Scotland has targets for limiting alcohol consumption (Table 7.1).

## *Overall levels of alcohol consumption*

In Britain in 2005, 35% of men and 20% of women consumed more alcohol than the recommended daily benchmarks; that is more than four units on the heaviest drinking day of the week for men and more than three for women (Table 7.2).

## *Age and sex differences*

Overall, men were more than one and a half times as likely as women to exceed the daily recommended levels of alcohol consumption in 2005 (Table 7.2), and over twice as likely to binge drink<sup>6</sup> (Table 7.2).

In 2005, alcohol consumption was higher in younger age groups, for example 43% of men and 36% of women aged 16 to 24 drank more than the recommended daily benchmarks, compared with only 16% of men and 4% of women aged 65 and over (Table 7.2 and Figures 7.2a and 7.2b).

Similar patterns are evident for binge drinking. The prevalence of binge drinking was highest

in the 16 to 24 years age group, with 30% of young men and 22% of young women drinking heavily on at least one day a week (Table 7.2).

## *Temporal trends*

In the first half of the twentieth century per capita alcohol consumption in the UK fell rapidly, from around 11 litres per year in 1900 to around 4 litres after the Second World War. From the late 1950s to the end of the century alcohol consumption increased steadily, more than doubling overall from around four to ten litres per person per year<sup>5</sup>.

Evidence about temporal trends in binge drinking are short-term as the General Household Survey has only included questions about the maximum daily amount consumed since 1998. Between 1998 and 2005, there have only been small fluctuations in the patterns of binge drinking in both men and women (Table 7.3 and Figure 7.3).

Trend data from the General Household Survey show that the average weekly consumption of alcohol remained reasonably stable between 1998 and 2005 for both men and women (Table 7.4).

## *Young people and drinking*

Data on drinking habits in 11 to 15 year olds is collected annually for the Drug use, Smoking and Drinking in Young People survey. In 2005, around one in six boys and girls consumed an alcoholic drink at least once a week. The number of girls drinking at this frequency had increased by over 50% since 1988 (Table 7.5).

## *National and regional differences*

On a regional basis the proportions consuming more than the recommended daily level of alcohol in 2005 were lowest in London and highest in Yorkshire and the Humber for both men and women. In 2005 while 27% of women in Yorkshire and the Humber consumed more than three units on the heaviest drinking day of the week, only 13% of women in London consumed more than the recommended sensible daily level (Table 7.6 and Figures 7.6a and 7.6b).

## *Socio-economic differences*

For both men and women in 2005, those in managerial and professional households were the most likely to drink and the most likely to drink on five or more days a week. However, the amount of alcohol drunk was less clearly related to socio-economic group, especially in men. Women in managerial and professional households were slightly more likely to exceed the daily recommended benchmarks than those in routine or manual occupations, but binge drinking did not vary by socio-economic group: in all socio-economic groups in 2005, about 8% of women and 19% of men exceeded the daily benchmarks for binge drinking (Table 7.7).

## *Ethnic differences*

Levels of alcohol consumption vary considerably with ethnicity. With the exception of the Irish, adults from each minority ethnic group were less likely to drink alcohol than the general population. Very low proportions of Bangladeshi (less than 5%) and Pakistani (less than 10%) adults ever drink alcohol. Women are more likely than men to be non-drinkers in all ethnic groups (Table 7.8 and Figures 7.8a and 7.8b).

Irish men and women are more likely than those in the general population to drink more than the recommended daily level of alcohol on the heaviest drinking day in a typical week. About 56% of Irish men and over one third (36%) of Irish women exceeded guidelines for the heaviest drinking day (Table 7.8 and Figures 7.8a and 7.8b).

## *International differences*

Levels of alcohol consumption in the UK in 2003 were about average for the European Union, and slightly higher than the European region average (Table 7.9 and Figure 7.9). In the EU as a whole, consumption of alcoholic drinks has steadily declined since 1980, but in the UK there has been no strong evidence of decline<sup>7</sup>.

1. World Health Organization (2002) *The World Health Report 2002. Reducing Risks, Promoting Healthy Life*. World Health Organization: Geneva.
2. Department of Health (1995) *Sensible Drinking. The Report of an Inter-Departmental Working Group*. DH: London.
3. These guidelines were restated in March 2004 in the Government's alcohol harm reduction strategy for England, published by the Cabinet Office. Prime Minister's Strategy Unit (2004) *Alcohol harm reduction strategy for England*. Cabinet Office: London. See [www.strategy.gov.uk/work\\_areas/alcohol\\_misuse/index.asp](http://www.strategy.gov.uk/work_areas/alcohol_misuse/index.asp).
4. In recognition of the dangers of excessive drinking in a single session, the sensible drinking recommendations were changed in 1995 to focus on daily rather than weekly guideline.
5. The Academy of Medical Sciences (2004) *Calling time: the nation's drinking as a major health issue*. Academy of Medical Sciences: London.
6. The General Household Survey defines heavy drinking, or binge drinking, as more than 8 units in one day for men and more than 6 units in one day for women. While people vary in their susceptibility to the effect of alcohol, these thresholds for heavy drinking were chosen as those likely to lead to intoxication.
7. World Health Organization (2006) *European Health For All statistical database*. See [www.euro.who.int/hfad](http://www.euro.who.int/hfad)

**Table 7.1** *Alcohol targets and recommendations for the United Kingdom*

|                                               |                                                                                                                                              |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Recommendations for the United Kingdom</b> |                                                                                                                                              |
| Safe level – men                              | No more than 4 units per day / 21 units per week                                                                                             |
| Safe level – women                            | No more than 3 units per day / 14 units per week                                                                                             |
| Benchmark for heavy drinking – men            | 8 units per day                                                                                                                              |
| Benchmark for heavy drinking – women          | 6 units per day                                                                                                                              |
| <b>England<sup>1</sup></b>                    | No target set                                                                                                                                |
| <b>Scotland<sup>2</sup></b>                   |                                                                                                                                              |
| Men – <i>Headline Target</i>                  | To reduce the proportion of men exceeding the weekly limit of 21 units of alcohol from 33% to 31% between 1995 and 2005 and to 29% by 2010   |
| Women – <i>Headline Target</i>                | To reduce the proportion of women exceeding the weekly limit of 14 units of alcohol from 13% to 12% between 1995 and 2005 and to 11% by 2010 |
| Young people – <i>Second Rank Target</i>      | To reduce the frequency and level of drinking from 20% of 12-15 year olds to 18% between 1995 and 2005 and to 16% by 2010                    |
| <b>Wales<sup>3</sup></b>                      | No target set                                                                                                                                |
| <b>Northern Ireland<sup>4</sup></b>           | No target set                                                                                                                                |

1. The Government's Strategy Unit has recently published an alcohol strategy for England. This did not recommend the introduction of public health targets for alcohol consumption. Strategy Unit (2004) Alcohol Harm Reduction Strategy for England. Cabinet Office: London. See [www.strategy.gov.uk/work\\_areas/alcohol\\_misuse/index.asp](http://www.strategy.gov.uk/work_areas/alcohol_misuse/index.asp).

2. The Scottish Office (1999) Towards a Healthier Scotland. HMSO: Edinburgh.

3. The Welsh Assembly Government is currently developing new determinants of health indicators. The first stage of this work is underway and includes a focus on CHD. See the Chief Medical Officer Wales website, [www.cmo.wales.gov.uk/content/work/health-gain-targets/determinants-of-health-e.htm](http://www.cmo.wales.gov.uk/content/work/health-gain-targets/determinants-of-health-e.htm).

4. The Department of Health, Social Services and Public Safety in Northern Ireland is currently developing a target for the next 6 years aimed at reducing the number of people who binge drink.

**Table 7.2**     *Alcohol consumption by sex and age, 2005, Great Britain*

| <i>Maximum daily alcohol consumption</i> | All ages  | 16-24     | 25-44     | 45-64     | 65+       |
|------------------------------------------|-----------|-----------|-----------|-----------|-----------|
|                                          | %         | %         | %         | %         | %         |
| <b>MEN</b>                               |           |           |           |           |           |
| Drank nothing last week                  | 28        | 36        | 26        | 23        | 34        |
| Up to 4 units                            | 38        | 21        | 33        | 42        | 50        |
| 5-8 units                                | 16        | 13        | 17        | 19        | 12        |
| More than 8 units                        | 19        | 30        | 25        | 16        | 4         |
| <b>% exceeding 4 units</b>               | <b>35</b> | <b>43</b> | <b>42</b> | <b>35</b> | <b>16</b> |
| <i>Weighted base (000s)</i>              | 19,479    | 2,506     | 6,865     | 6,351     | 3,756     |
| <i>Unweighted base</i>                   | 10,028    | 1,104     | 3,406     | 3,374     | 2,144     |
| <b>WOMEN</b>                             |           |           |           |           |           |
| Drank nothing last week                  | 43        | 44        | 38        | 39        | 57        |
| Up to 3 units                            | 37        | 20        | 35        | 43        | 39        |
| 4-6 units                                | 12        | 14        | 15        | 14        | 3         |
| More than 6 units                        | 8         | 22        | 11        | 4         | 1         |
| <b>% exceeding 3 units</b>               | <b>20</b> | <b>36</b> | <b>26</b> | <b>18</b> | <b>4</b>  |
| <i>Weighted base (000s)</i>              | 22,299    | 2,733     | 7,814     | 6,926     | 4,826     |
| <i>Unweighted base</i>                   | 11,617    | 1,280     | 4,038     | 3,751     | 2,548     |

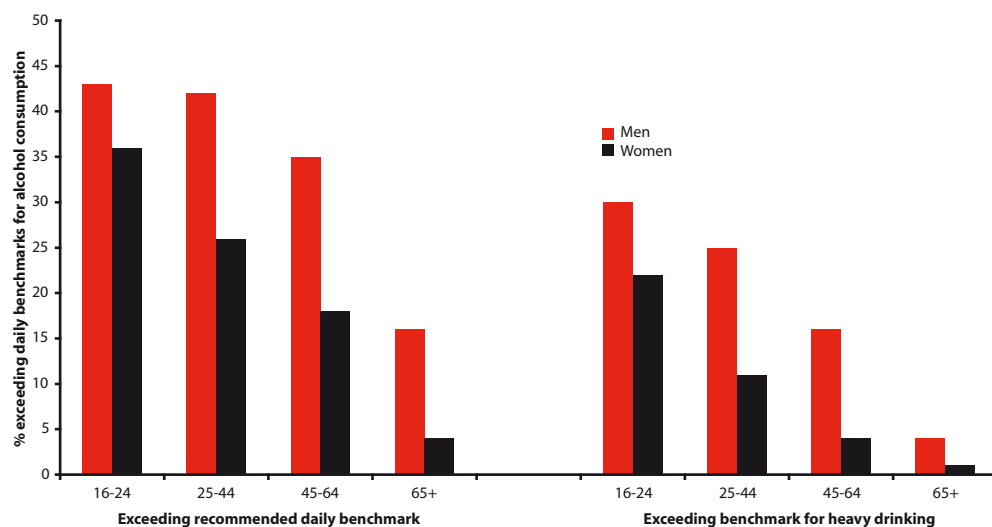
*Notes:*    Adults aged 16 and over.

*Alcohol consumption levels are based on the number of units of alcohol consumed on the heaviest day during the previous week, the "maximum daily" amount.*

*Source:*    Office for National Statistics (2006) *Smoking and drinking among adults, 2005: General Household Survey 2005.*

Office for National Statistics: London. See [www.ons.gov.uk/ghs](http://www.ons.gov.uk/ghs)

Figure 7.2 Percentage exceeding daily benchmarks for alcohol consumption by sex and age, 2005, Great Britain



Note: Recommended daily benchmark is 4 units for men and 3 units for women. Benchmark for heavy drinking is 8 units for men and 6 units for women.

**Table 7.3** *Percentage of adults consuming more alcohol than the recommended daily maximum by sex and age, 1998 to 2005, Great Britain*

| <i>Maximum daily alcohol consumption</i>              | 1998   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   |
|-------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|
|                                                       | %      | %      | %      | %      | %      | %      | %      |
| <b>MEN</b>                                            |        |        |        |        |        |        |        |
| <b>More than 4 units</b>                              |        |        |        |        |        |        |        |
| 16-24                                                 | 52     | 50     | 50     | 49     | 51     | 47     | 43     |
| 25-44                                                 | 48     | 45     | 49     | 46     | 47     | 48     | 42     |
| 45-64                                                 | 37     | 38     | 37     | 38     | 41     | 37     | 35     |
| 65+                                                   | 16     | 16     | 18     | 16     | 19     | 20     | 16     |
| <i>% exceeding recommended daily maximum</i>          | 39     | 39     | 40     | 38     | 40     | 39     | 35     |
| <b>More than 8 units</b>                              |        |        |        |        |        |        |        |
| 16-24                                                 | 39     | 37     | 37     | 35     | 37     | 32     | 30     |
| 25-44                                                 | 29     | 27     | 30     | 28     | 30     | 31     | 25     |
| 45-64                                                 | 17     | 17     | 17     | 18     | 20     | 18     | 16     |
| 65+                                                   | 4      | 5      | 5      | 5      | 6      | 7      | 4      |
| <i>% exceeding daily benchmark for heavy drinking</i> | 22     | 21     | 22     | 21     | 23     | 22     | 19     |
| <i>Weighted base (000s)</i>                           | 19,174 | 20,369 | 19,911 | 19,534 | 19,161 | 19,538 | 19,479 |
| <i>Unweighted base</i>                                | 6,561  | 6,598  | 7,054  | 6,828  | 8,087  | 6,862  | 10,028 |
| <b>WOMEN</b>                                          |        |        |        |        |        |        |        |
| <b>More than 3 units</b>                              |        |        |        |        |        |        |        |
| 16-24                                                 | 42     | 42     | 40     | 42     | 40     | 39     | 36     |
| 25-44                                                 | 28     | 31     | 31     | 31     | 30     | 28     | 26     |
| 45-64                                                 | 17     | 19     | 19     | 19     | 20     | 20     | 18     |
| 65+                                                   | 4      | 4      | 5      | 5      | 4      | 5      | 4      |
| <i>% exceeding recommended daily maximum</i>          | 21     | 23     | 23     | 23     | 23     | 22     | 20     |
| <b>More than 6 units</b>                              |        |        |        |        |        |        |        |
| 16-24                                                 | 24     | 27     | 27     | 28     | 23     | 24     | 22     |
| 25-44                                                 | 11     | 13     | 14     | 13     | 13     | 13     | 11     |
| 45-64                                                 | 5      | 5      | 5      | 5      | 5      | 6      | 4      |
| 65+                                                   | 1      | 1      | 1      | 1      | 1      | 1      | 1      |
| <i>% exceeding daily benchmark for heavy drinking</i> | 8      | 10     | 10     | 10     | 9      | 9      | 8      |
| <i>Weighted base (000s)</i>                           | 21,625 | 22,054 | 21,985 | 22,202 | 21,788 | 22,343 | 22,299 |
| <i>Unweighted base</i>                                | 7,821  | 7,491  | 8,299  | 7,942  | 9,304  | 8,012  | 11,617 |

Source: Office for National Statistics (2006) *Smoking and drinking among adults. General Household Survey 2005*. Office for National Statistics: London, and previous years. See [www.ons.gov.uk/ghs](http://www.ons.gov.uk/ghs)

Figure 7.3 *Percentage consuming more alcohol than the recommended daily maximum, adults aged 16 and over, 1998 to 2005, Great Britain*

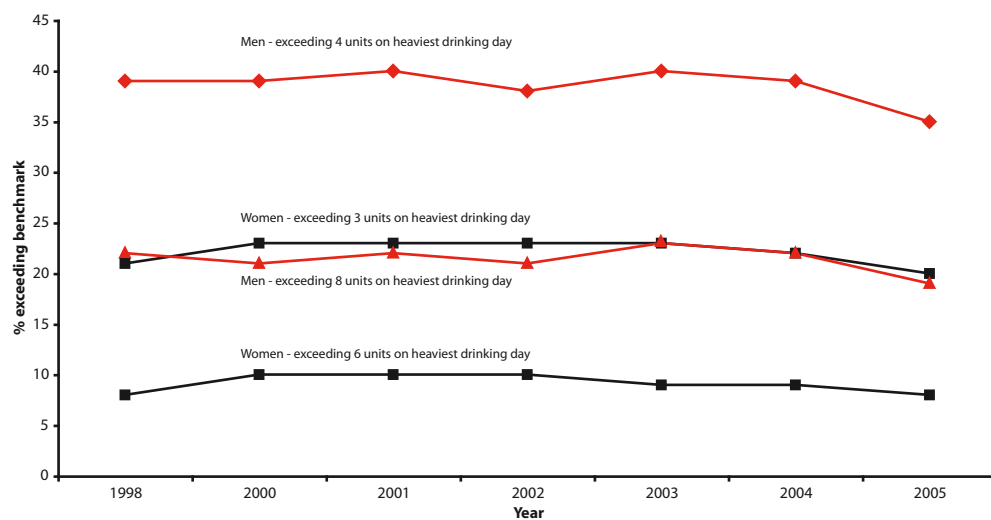


**Table 7.4** *Weekly alcohol consumption by sex and age, 1992 to 2005, Great Britain*

| Average weekly alcohol consumption (units) |                 |      |      |      |               |      |      |      |      |                              |                         |
|--------------------------------------------|-----------------|------|------|------|---------------|------|------|------|------|------------------------------|-------------------------|
|                                            | Unweighted data |      |      |      | Weighted data |      |      |      |      |                              |                         |
| Age                                        | 1992            | 1994 | 1996 | 1998 | 1998          | 2000 | 2001 | 2002 | 2005 | Weighted base<br>2005 (000s) | Unweighted<br>base 2005 |
| MEN                                        |                 |      |      |      |               |      |      |      |      |                              |                         |
| 16-24                                      | 19.1            | 17.4 | 20.3 | 23.6 | 25.5          | 25.9 | 24.8 | 21.5 | 18.2 | 2,327                        | 873                     |
| 25-44                                      | 18.2            | 17.5 | 17.6 | 16.5 | 17.1          | 17.7 | 18.4 | 18.7 | 16.2 | 6,784                        | 2,805                   |
| 45-64                                      | 15.6            | 15.5 | 15.6 | 17.3 | 17.4          | 16.8 | 16.1 | 17.5 | 17.7 | 6,419                        | 2,816                   |
| 65+                                        | 9.7             | 10.0 | 11.0 | 10.7 | 10.6          | 11.0 | 10.8 | 10.7 | 10.4 | 3,835                        | 1,803                   |
| Total                                      | 15.9            | 15.4 | 16.0 | 16.4 | 17.1          | 17.4 | 17.2 | 17.2 | 15.8 | 19,366                       | 8,297                   |
| WOMEN                                      |                 |      |      |      |               |      |      |      |      |                              |                         |
| 16-24                                      | 7.3             | 7.7  | 9.5  | 10.6 | 11.0          | 12.6 | 14.1 | 14.1 | 10.9 | 2,612                        | 1,031                   |
| 25-44                                      | 6.3             | 6.2  | 7.2  | 7.1  | 7.1           | 8.1  | 8.3  | 8.4  | 7.1  | 7,840                        | 3,353                   |
| 45-64                                      | 5.3             | 5.3  | 5.9  | 6.4  | 6.4           | 6.2  | 6.8  | 6.7  | 6.3  | 7,023                        | 3,140                   |
| 65+                                        | 2.7             | 3.2  | 3.5  | 3.3  | 3.2           | 3.5  | 3.6  | 3.8  | 3.5  | 4,904                        | 2,135                   |
| Total                                      | 5.4             | 5.4  | 6.3  | 6.4  | 6.5           | 7.1  | 7.5  | 7.6  | 6.5  | 22,378                       | 9,659                   |

Source: Office for National Statistics (2006). *Smoking and drinking among adults. General Household Survey 2005*. Office for National Statistics: London. See [www.ons.gov.uk/gbs](http://www.ons.gov.uk/gbs)

**Table 7.5** *Usual frequency of drinking alcohol by sex, children aged 11 to 15, 1988 to 2005, England*

|                          | 1988<br>% | 1990<br>% | 1992<br>% | 1994<br>% | 1996<br>% | 1998<br>% | 1999<br>% | 2000<br>% | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>BOYS</b>              |           |           |           |           |           |           |           |           |           |           |           |           |           |
| Almost every day         | 1         | 1         | 1         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 1         | 2         | 1         |
| About twice a week       | 7         | 5         | 7         | 7         | 8         | 8         | 7         | 8         | 10        | 8         | 8         | 7         | 7         |
| About once a week        | 8         | 8         | 8         | 10        | 12        | 8         | 10        | 9         | 11        | 9         | 10        | 9         | 9         |
| At least once a week     | 15        | 14        | 16        | 19        | 21        | 18        | 19        | 19        | 22        | 19        | 20        | 17        | 17        |
| About once a fortnight   | 10        | 8         | 8         | 7         | 8         | 8         | 8         | 8         | 9         | 8         | 8         | 8         | 8         |
| About once a month       | 11        | 10        | 9         | 8         | 8         | 8         | 8         | 8         | 8         | 9         | 9         | 8         | 8         |
| Only a few times a year  | 24        | 30        | 28        | 25        | 22        | 24        | 23        | 22        | 22        | 22        | 21        | 21        | 20        |
| Doesn't drink now        | 5         | 4         | 3         | 7         | 4         | 5         | 4         | 3         | 2         | 4         | 3         | 4         | 4         |
| Ever had alcoholic drink | 65        | 65        | 63        | 66        | 63        | 62        | 62        | 59        | 62        | 62        | 62        | 59        | 57        |
| Never had a drink        | 35        | 35        | 37        | 34        | 37        | 38        | 38        | 41        | 38        | 38        | 38        | 41        | 43        |
| <i>Base</i>              | 1,472     | 1,622     | 1,650     | 1,509     | 1,431     | 2,245     | 4,823     | 3,540     | 4,620     | 4,988     | 5,198     | 4,950     | 4,612     |
| <b>GIRLS</b>             |           |           |           |           |           |           |           |           |           |           |           |           |           |
| Almost every day         | 1         | 1         | 0         | 1         | 2         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| About twice a week       | 3         | 4         | 3         | 5         | 7         | 6         | 6         | 7         | 7         | 6         | 7         | 7         | 6         |
| About once a week        | 6         | 7         | 7         | 9         | 10        | 8         | 9         | 9         | 10        | 9         | 10        | 8         | 9         |
| At least once a week     | 10        | 12        | 10        | 15        | 18        | 14        | 15        | 17        | 18        | 16        | 17        | 16        | 16        |
| About once a fortnight   | 9         | 8         | 7         | 10        | 10        | 7         | 9         | 8         | 10        | 9         | 10        | 9         | 9         |
| About once a month       | 9         | 10        | 8         | 9         | 9         | 9         | 9         | 9         | 9         | 10        | 9         | 9         | 9         |
| Only a few times a year  | 26        | 30        | 27        | 25        | 21        | 23        | 22        | 22        | 20        | 22        | 22        | 21        | 22        |
| Doesn't drink now        | 4         | 3         | 3         | 5         | 3         | 4         | 3         | 4         | 2         | 3         | 3         | 4         | 3         |
| Ever had alcoholic drink | 59        | 63        | 56        | 65        | 61        | 58        | 59        | 59        | 60        | 60        | 61        | 59        | 60        |
| Never had a drink        | 41        | 37        | 44        | 35        | 39        | 42        | 41        | 41        | 40        | 40        | 39        | 41        | 40        |
| <i>Base</i>              | 1,523     | 1,466     | 1,608     | 1,511     | 1,387     | 2,356     | 4,568     | 3,313     | 4,622     | 4,690     | 5,085     | 4,612     | 4,461     |

Notes: Respondents drawn from secondary schools (both state and independent) in England.

Source: National Centre for Social Research and National Foundation for Educational Research (2006). *Drug use, smoking and drinking among young people in England in 2005*. Department of Health: London.

**Table 7.6 Alcohol consumption by sex, country of Great Britain and Government Office Region in England, adults aged 16 and over, 2005, Great Britain**

|                          | Drinking last week   |                                   |                                        |                                             |                                               |                      |                   |
|--------------------------|----------------------|-----------------------------------|----------------------------------------|---------------------------------------------|-----------------------------------------------|----------------------|-------------------|
|                          | Drank last week      | Drank on 5 or more days last week | Drank 5 to 8 units on at least one day | Drank more than 8 units on at least one day | Drank more than the recommended daily maximum | Weighted base (000s) | Unweighted sample |
|                          | %                    | %                                 | %                                      | %                                           | %                                             |                      |                   |
| MEN                      |                      |                                   |                                        |                                             |                                               |                      |                   |
| North East               | 73                   | 20                                | 21                                     | 21                                          | 42                                            | 843                  | 426               |
| North West               | 76                   | 22                                | 18                                     | 24                                          | 42                                            | 2,269                | 1,186             |
| Yorkshire and the Humber | 79                   | 22                                | 17                                     | 25                                          | 42                                            | 1,733                | 898               |
| East Midlands            | 72                   | 20                                | 17                                     | 19                                          | 36                                            | 1,593                | 839               |
| West Midlands            | 71                   | 22                                | 15                                     | 16                                          | 31                                            | 1,657                | 879               |
| East of England          | 72                   | 21                                | 16                                     | 17                                          | 33                                            | 1,857                | 994               |
| London                   | 62                   | 20                                | 14                                     | 12                                          | 26                                            | 2,261                | 1,013             |
| South East               | 75                   | 25                                | 16                                     | 15                                          | 31                                            | 2,851                | 1,486             |
| South West               | 75                   | 26                                | 14                                     | 19                                          | 33                                            | 1,734                | 925               |
| England                  | 73                   | 22                                | 16                                     | 18                                          | 34                                            | 16,798               | 8,646             |
| Wales                    | 75                   | 21                                | 16                                     | 18                                          | 34                                            | 962                  | 505               |
| Scotland                 | 68                   | 16                                | 16                                     | 22                                          | 38                                            | 1,708                | 873               |
| Great Britain            | 72                   | 22                                | 16                                     | 19                                          | 35                                            | 19,468               | 10,024            |
|                          | Drank last week days | Drank on 5 or more last week      | Drank 4 to 6 units on at least one day | Drank more than 6 units on at least one day | Drank more than the recommended daily maximum | Weighted base (000s) | Unweighted base   |
| WOMEN                    |                      |                                   |                                        |                                             |                                               |                      |                   |
| North East               | 57                   | 11                                | 16                                     | 9                                           | 25                                            | 1,048                | 538               |
| North West               | 60                   | 12                                | 15                                     | 11                                          | 26                                            | 2,627                | 1,403             |
| Yorkshire and the Humber | 63                   | 13                                | 14                                     | 13                                          | 27                                            | 1,992                | 1,026             |
| East Midlands            | 57                   | 12                                | 12                                     | 7                                           | 19                                            | 1,714                | 918               |
| West Midlands            | 53                   | 14                                | 11                                     | 6                                           | 17                                            | 1,822                | 981               |
| East of England          | 59                   | 12                                | 11                                     | 7                                           | 18                                            | 2,082                | 1,129             |
| London                   | 47                   | 10                                | 8                                      | 5                                           | 13                                            | 2,641                | 1,188             |
| South East               | 61                   | 17                                | 12                                     | 6                                           | 18                                            | 3,165                | 1,677             |
| South West               | 63                   | 15                                | 14                                     | 8                                           | 22                                            | 1,979                | 1,072             |
| England                  | 58                   | 13                                | 12                                     | 8                                           | 20                                            | 19,070               | 9,932             |
| Wales                    | 55                   | 11                                | 10                                     | 8                                           | 18                                            | 1,160                | 610               |
| Scotland                 | 51                   | 9                                 | 12                                     | 9                                           | 21                                            | 2,054                | 1,068             |
| Great Britain            | 57                   | 13                                | 13                                     | 8                                           | 20                                            | 22,284               | 11,610            |

*Notes:* Alcohol consumption levels are based on the number of units of alcohol consumed on the heaviest drinking day during the previous week, the "maximum daily amount".

Data are weighted for non-response.

*Source:* Office for National Statistics (2006) *Smoking and drinking among adults, 2005. General Household Survey 2005.* Office for National Statistics: London. See [www.ons.gov.uk/ghs](http://www.ons.gov.uk/ghs)

Figure 7.6a *Percentage of men consuming more alcohol than the recommended daily maximum (four units) by region, 2005, Great Britain*

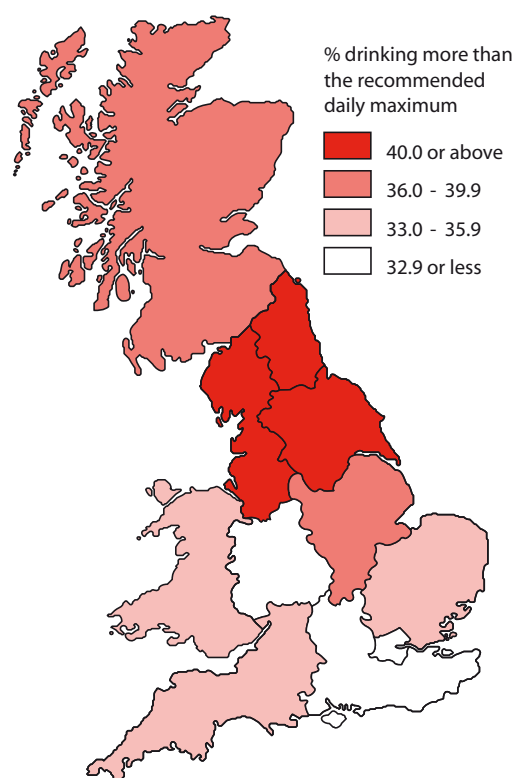
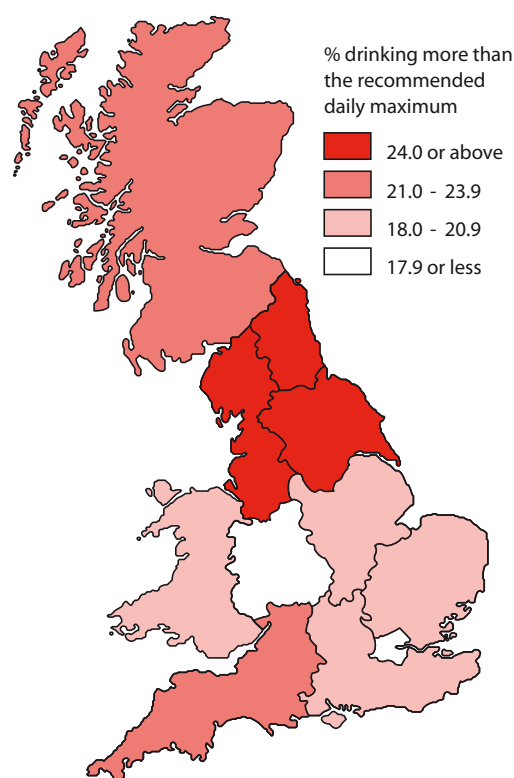


Figure 7.6b *Percentage of women consuming more alcohol than the recommended daily maximum (three units) by region, 2005, Great Britain*



Adults aged 16 and over.

Figure 7.6c Percentage of men exceeding daily benchmark for heavy drinking (eight units) by region, 2005, Great Britain

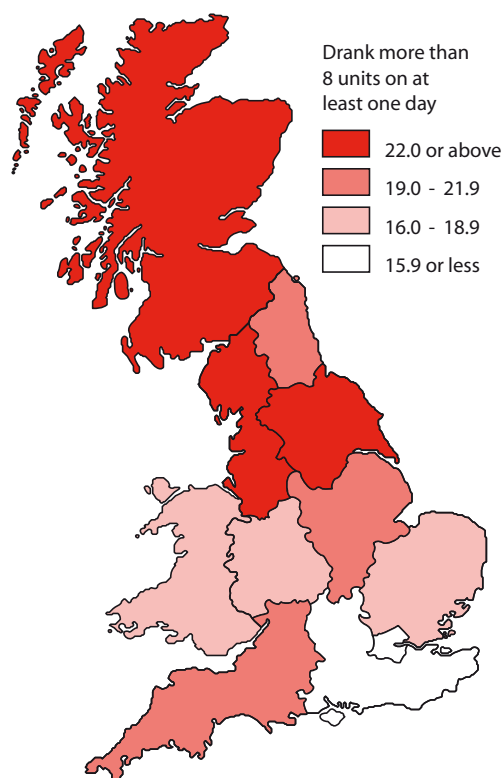
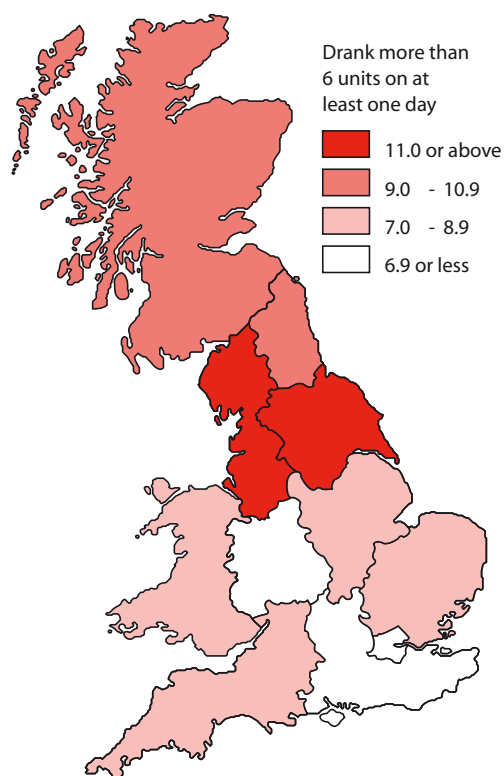


Figure 7.6d Percentage of women exceeding daily benchmark for heavy drinking (six units) by region, 2005, Great Britain



Adults aged 16 and over.

**Table 7.7** *Alcohol consumption by sex and socio-economic classification, adults aged 16 and over, 2005, Great Britain*

|                                       | Drinking last week   |                                   |                                        |                                             |                                               |                      |                   |
|---------------------------------------|----------------------|-----------------------------------|----------------------------------------|---------------------------------------------|-----------------------------------------------|----------------------|-------------------|
|                                       | Drank last week      | Drank on 5 or more days last week | Drank 5 to 8 units on at least one day | Drank more than 8 units on at least one day | Drank more than the recommended daily maximum | Weighted base (000s) | Unweighted sample |
|                                       | %                    | %                                 | %                                      | %                                           | %                                             |                      |                   |
| MEN                                   |                      |                                   |                                        |                                             |                                               |                      |                   |
| Managerial and professional           | 79                   | 26                                | 16                                     | 18                                          | 34                                            | 8,090                | 4,305             |
| Large employers and higher managerial | 82                   | 29                                | 17                                     | 19                                          | 36                                            | 1,407                | 777               |
| Higher professional                   | 79                   | 29                                | 18                                     | 14                                          | 32                                            | 1,924                | 1,011             |
| Lower managerial and professional     | 78                   | 25                                | 16                                     | 18                                          | 34                                            | 4,759                | 2,517             |
| Intermediate                          | 74                   | 23                                | 16                                     | 19                                          | 35                                            | 3,366                | 1,719             |
| Intermediate                          | 74                   | 22                                | 18                                     | 19                                          | 37                                            | 1,371                | 677               |
| Small employers and own account       | 74                   | 24                                | 16                                     | 18                                          | 34                                            | 1,995                | 1,042             |
| Routine and manual                    | 66                   | 16                                | 15                                     | 19                                          | 34                                            | 7,087                | 3,592             |
| Lower supervisory and technical       | 70                   | 16                                | 16                                     | 20                                          | 36                                            | 2,234                | 1,145             |
| Semi routine                          | 65                   | 17                                | 16                                     | 17                                          | 33                                            | 2,310                | 1,176             |
| Routine                               | 64                   | 16                                | 15                                     | 19                                          | 34                                            | 2,543                | 1,271             |
| Total                                 | 72                   | 22                                | 16                                     | 19                                          | 35                                            | 19,479               | 10,028            |
|                                       | Drank last week days | Drank on 5 or more last week      | Drank 4 to 6 units on at least one day | Drank more than 6 units on at least one day | Drank more than the recommended daily maximum | Weighted base (000s) | Unweighted base   |
| WOMEN                                 |                      |                                   |                                        |                                             |                                               |                      |                   |
| Managerial and professional           | 66                   | 16                                | 14                                     | 8                                           | 22                                            | 8,692                | 4,672             |
| Large employers and higher managerial | 73                   | 20                                | 17                                     | 9                                           | 26                                            | 1,418                | 783               |
| Higher professional                   | 69                   | 18                                | 13                                     | 8                                           | 21                                            | 1,763                | 953               |
| Lower managerial and professional     | 64                   | 15                                | 15                                     | 7                                           | 22                                            | 5,511                | 2,936             |
| Intermediate                          | 59                   | 13                                | 12                                     | 8                                           | 20                                            | 4,086                | 2,116             |
| Intermediate                          | 59                   | 12                                | 13                                     | 8                                           | 21                                            | 2,241                | 1,119             |
| Small employers and own account       | 58                   | 14                                | 13                                     | 7                                           | 20                                            | 1,845                | 997               |
| Routine and manual                    | 47                   | 9                                 | 10                                     | 7                                           | 17                                            | 8,200                | 4,206             |
| Lower supervisory and technical       | 52                   | 10                                | 11                                     | 8                                           | 19                                            | 2,144                | 1,097             |
| Semi routine                          | 48                   | 10                                | 9                                      | 7                                           | 16                                            | 3,196                | 1,647             |
| Routine                               | 43                   | 8                                 | 10                                     | 6                                           | 16                                            | 2,860                | 1,462             |
| Total                                 | 57                   | 13                                | 12                                     | 8                                           | 20                                            | 22,299               | 11,617            |

*Notes:* Alcohol consumption levels are based on the number of units of alcohol consumed on the heaviest drinking day during the previous week, the "maximum daily amount".

Data are weighted for non-response.

From April 2001 the National Statistics Socio-economic classification (NS-SEC) was introduced for all official statistics and surveys. It has replaced Social Class based on Occupation and Socio-economic Groups (SEG). Persons whose household reference person was a full-time student, had an inadequately described occupation, had never worked or was long term unemployed are not shown as separate categories but are included in the figure for all persons.

*Source:* Office for National Statistics (2006). Smoking and drinking among adults, 2005. General Household Survey 2005. Office for National Statistics: London. See [www.ons.gov.uk/ghs](http://www.ons.gov.uk/ghs)

**Table 7.8** *Alcohol consumption by sex and ethnic group, adults aged 16 and over, 2004, England*

| <i>Alcohol consumed on the heaviest drinking day</i> | General population | Black Caribbean | Black African | Indian    | Pakistani | Bangladeshi | Chinese   | Irish     |
|------------------------------------------------------|--------------------|-----------------|---------------|-----------|-----------|-------------|-----------|-----------|
|                                                      | %                  | %               | %             | %         | %         | %           | %         | %         |
| <b>MEN</b>                                           |                    |                 |               |           |           |             |           |           |
| None                                                 | 24                 | 40              | 62            | 53        | 93        | 99          | 52        | 20        |
| Under 2 units                                        | 13                 | 12              | 8             | 11        | 1         | 0           | 14        | 10        |
| Up to 4 units                                        | 55                 | 72              | 83            | 77        | 96        | 99          | 81        | 44        |
| More than 4, up to 8 units                           | 20                 | 16              | 10            | 13        | 1         | 0           | 9         | 25        |
| More than 8 units                                    | 25                 | 12              | 7             | 9         | 3         | 0           | 10        | 32        |
| <b>% exceeding 4 units</b>                           | <b>45</b>          | <b>28</b>       | <b>17</b>     | <b>22</b> | <b>4</b>  | <b>1</b>    | <b>19</b> | <b>56</b> |
| <i>Unweighted base</i>                               | 2,829              | 397             | 369           | 531       | 416       | 395         | 337       | 490       |
| <i>Weighted base</i>                                 | 45,229             | 465             | 357           | 873       | 406       | 172         | 147       | 1,751     |
| <b>WOMEN</b>                                         |                    |                 |               |           |           |             |           |           |
| None                                                 | 39                 | 53              | 74            | 79        | 97        | 99          | 68        | 33        |
| Under 2 units                                        | 18                 | 17              | 11            | 8         | 1         | 0           | 15        | 18        |
| Up to 3 units                                        | 70                 | 81              | 92            | 92        | 98        | 99          | 88        | 64        |
| More than 3, up to 6 units                           | 16                 | 12              | 5             | 4         | 0         | 0           | 8         | 20        |
| More than 6 units                                    | 14                 | 6               | 2             | 4         | 1         | 0           | 4         | 16        |
| <b>% exceeding 3 units</b>                           | <b>30</b>          | <b>18</b>       | <b>7</b>      | <b>8</b>  | <b>1</b>  | <b>1</b>    | <b>12</b> | <b>36</b> |
| <i>Unweighted base</i>                               | 3,745              | 618             | 446           | 618       | 495       | 448         | 364       | 642       |
| <i>Weighted base</i>                                 | 47,623             | 641             | 454           | 1,043     | 488       | 194         | 158       | 2,329     |

*Notes:* Age-standardised percentages (standardised risk ratios x percentage in general population).  
Numbers may not add due to rounding.

*Source:* Department of Health (2005) *Health Survey for England 2004*. The Information Centre: London  
See <http://www.ic.nhs.uk/pubs/healthsurvey2004ethnicfull>

*Figure 7.8a Alcohol consumption by ethnic group, men aged 16 and over, 2004, England*

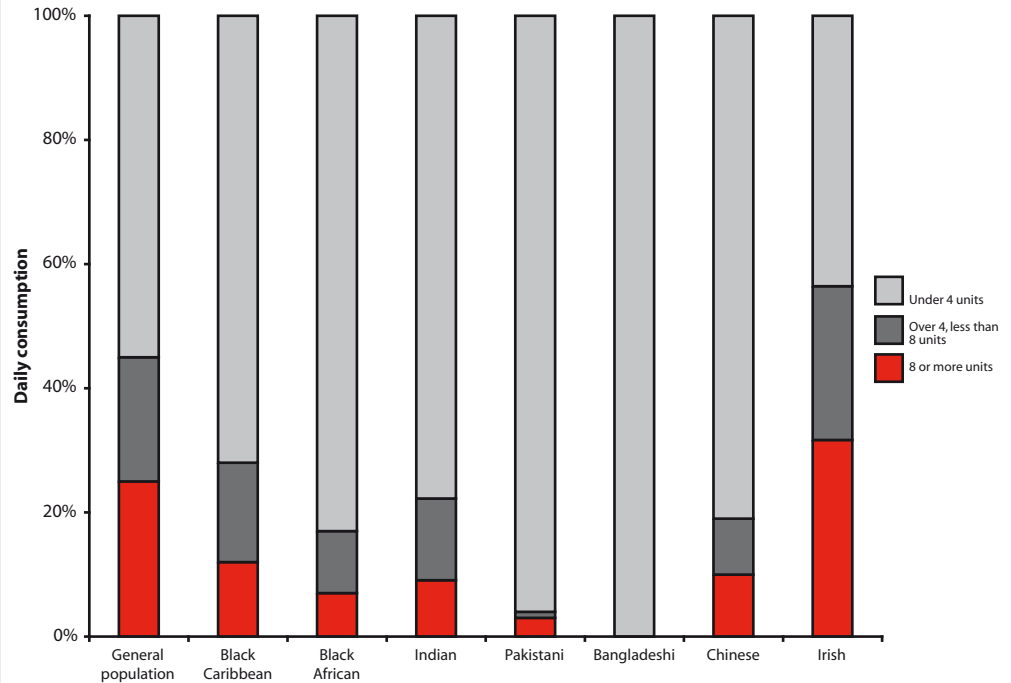


*Figure 7.8b Alcohol consumption by ethnic group, women aged 16 and over, 2004, England*

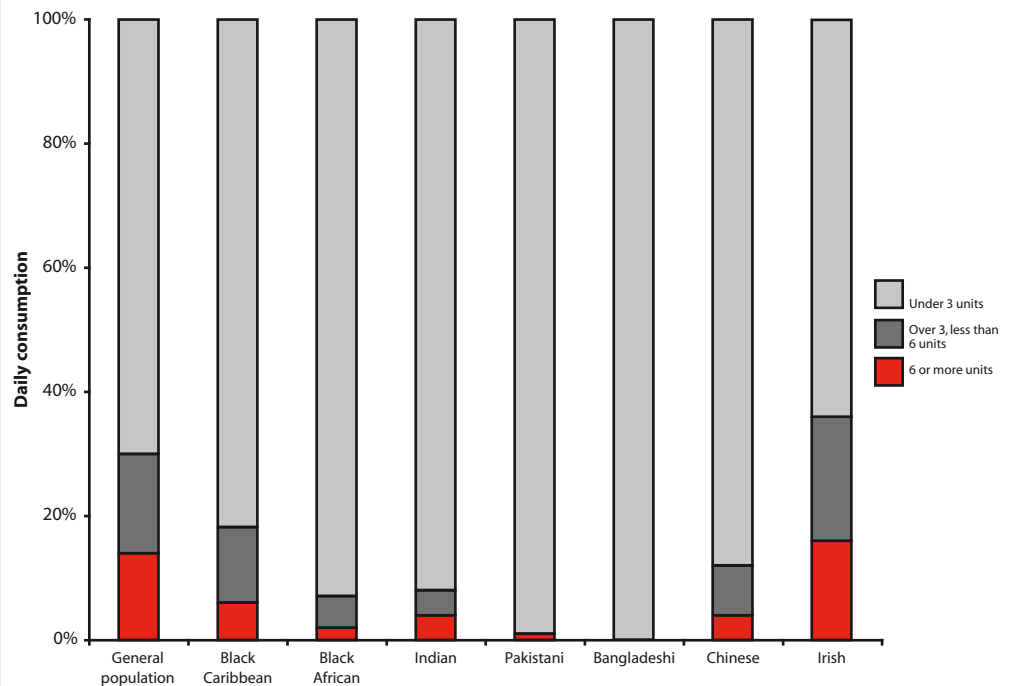


**Table 7.9** *Alcohol consumption by country, adults aged 15 and over, 2003, Europe*

*Litres pure alcohol per person per year*

|                        |      |                         |      |
|------------------------|------|-------------------------|------|
| Albania                | 1.7  | Lithuania               | 8.6  |
| Armenia                | 1.1  | Luxembourg              | 14.6 |
| Austria                | 10.5 | FYR Macedonia *         | 1.9  |
| Azerbaijan             | 3.1  | Malta                   | 5.4  |
| Belarus                | 4.8  | Netherlands             | 7.8  |
| Belgium                | 8.9  | Norway                  | 4.8  |
| Bosnia and Herzegovina | 8.3  | Poland                  | 6.7  |
| Bulgaria               | 5.0  | Portugal                | 9.4  |
| Croatia                | 10.3 | Republic of Moldova *   | 10.2 |
| Cyprus                 | 9.0  | Romania                 | 7.4  |
| Czech Republic         | 13.7 | Russia                  | 8.9  |
| Denmark                | 9.8  | Serbia and Montenegro * | 6.8  |
| Estonia                | 9.7  | Slovakia                | 9.5  |
| Finland                | 7.7  | Slovenia                | 9.9  |
| France                 | 10.0 | Spain                   | 10.0 |
| Georgia                | 1.3  | Sweden                  | 5.6  |
| Germany                | 10.7 | Switzerland             | 9.4  |
| Greece                 | 7.7  | Tajikistan              | 0.3  |
| Hungary                | 11.6 | Turkey                  | 1.0  |
| Iceland                | 5.5  | Turkmenistan            | 0.7  |
| Ireland                | 10.6 | Ukraine                 | 5.2  |
| Israel                 | 1.7  | United Kingdom          | 9.3  |
| Italy                  | 7.6  | Uzbekistan              | 1.0  |
| Kazakhstan             | 2.2  | Europe average          | 8.8  |
| Kyrgyzstan             | 2.4  | EU-15 average           | 9.4  |
| Latvia                 | 8.4  | EU-25 average           | 9.3  |

Notes: \* data for these countries are for 2002.

Source: World Health Organization (2006) *European Health for All statistical database*.  
<http://www.euro.who.int/hfad> (accessed 12 January 2007)

Figure 7.9 Alcohol consumption by country, adults aged 15 and over, 2003, Europe



# 8. Psychosocial Well-being

Four different types of psychosocial factor have been found to be most consistently associated with an increased risk of CHD: work stress, lack of social support, depression (including anxiety) and personality (particularly hostility)<sup>1</sup>. As yet there are no estimates of the numbers of deaths from CHD which are due to poor psychosocial well-being or of the numbers of deaths which could be avoided if psychosocial well-being was increased.

The Government acknowledges that ‘working in jobs which make very high demands, or in which people have little or no control, increases the risk of coronary heart disease and premature death. Inadequate social support or lack of social networks can also have a harmful effect on health and on the chances of recovering from disease’<sup>2</sup>.

## *Depression*

The Health Survey for England 2003 and the Scottish Health Survey for 2003 used the General Health Questionnaire (GHQ12) to assess levels of depression, anxiety, sleep disturbance and happiness in the population. A GHQ12 score of 4 or more - a ‘high GHQ12 score’ - indicates a high level of psychological distress.

Both surveys indicate that women have higher GHQ12 scores than men: 15% of women had a high score, compared with 11% of men in England; 17% compared to 13% in Scotland. For England, there was a tendency for men and women over the age of 75 to have higher scores than those in younger age groups (Table 8.1 and Figure 8.1).

There was no clear relationship between GHQ12 scores and social class but there was an inverse relationship between GHQ12 scores and income: people with low incomes tended to have higher GHQ12 scores. For example, men with the lowest 20% of household incomes were almost three times as likely to have a high GHQ12 score than those with the highest 20% of incomes (Table 8.2).

GHQ12 scores also vary geographically across England and were highest in men and women in the North East. Men living in the North East of England were nearly 50% more likely to have a high GHQ12 score than men living in other parts of the country. There was less variation among women (Table 8.3).

GHQ12 scores vary by ethnicity in both men and women. Chinese men and women were less likely to have a high GHQ12 score – just 9% of men and 13% of women compared to 11% of men and 15% of women in the general population. The highest GHQ12 scores (and hence the highest levels of psychological distress) in men were found in the Bangladeshi followed by

the Indian communities: 18% of Bangladeshi men and 16% of Indian men had high GHQ12 scores. The highest GHQ12 scores in women were found in the Pakistani and Black African communities: 20% of Pakistani women and 19% of Black African women had high GHQ12 scores (Table 8.4).

## *Social support*

Men are more likely to report a lack of social support than women. The 2003 Health Survey for England found that 17% of men but only 10% of women reported a severe lack of social support. There was no clear pattern of reported social support in relation to age (Table 8.5).

Lack of social support is strongly associated with socio-economic classification. Both men and women in the semi-routine and routine category were more than twice as likely to report a severe lack of social support as those in the managerial and professional group (Table 8.6 and Figure 8.6). Furthermore those with higher incomes were less likely to report a lack of social support than those with lower incomes (Table 8.7).

Social support also varies with ethnicity. Men and women of Pakistani and Bangladeshi origin were more likely to report a severe lack of social support compared with the general population. Pakistani and Bangladeshi adults were well over twice as likely to perceive a severe lack of social support, with over one-third of Pakistani (38%) and Bangladeshi (35%) men, and about one-third of Pakistani (30%) and Bangladeshi (33%) women experiencing little social support (Table 8.8 and Figure 8.8).

## *Work-related stress*

The 1994 Health Survey for England investigated levels of work-related stress in the population. The survey examined control over work, variety of work and pace of work. The dominant 'job strain' model of work-related stress suggests that a worker with low control, little variety and high work pace is particularly exposed to work-related stress. There is a growing recognition that control over work is more important than variety or pace in relation to risk of CHD<sup>1</sup>.

About a third of men and women reported a high pace of work. Those in the middle of the working age-range reported the highest work pace although the difference was more marked for men than for women. Women were more likely to report a low level of variety at work than men. Variety at work was lowest in 16 to 24 year olds and those over 55. Women reported less control over their work than men: 31% of women reported a low level of control compared with 19% of men. 16 to 24 year olds reported lower levels of control than those in older age groups (Table 8.9).

Those in social classes I and II reported higher levels of pace, variety and control than other social classes with those in social classes IV and V reporting the lowest levels of all three. Men in social class V were eight times more likely to report low control over work as those in social class I and women were three times more likely (Table 8.10 and Figure 8.10). These results should be interpreted with caution as these data are now over ten years old.

1. Hemingway H, Marmot M (1999) *Psychosocial factors in the aetiology and prognosis of coronary heart disease: systematic review of prospective cohort studies*. BMJ: 318; 1460-7.
2. Department of Health (1999) *Saving Lives: Our Healthier Nation*. DH: London.

**Table 8.1** GHQ12 score by sex and age, adults aged 16 and over, 2003, England and Scotland

|                 | All ages | 16-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+ |
|-----------------|----------|-------|-------|-------|-------|-------|-------|-----|
| GHQ12 score     | %        | %     | %     | %     | %     | %     | %     | %   |
| <b>ENGLAND</b>  |          |       |       |       |       |       |       |     |
| <b>MEN</b>      |          |       |       |       |       |       |       |     |
| 0               | 66       | 65    | 63    | 68    | 66    | 70    | 70    | 59  |
| 1-3             | 22       | 25    | 26    | 19    | 23    | 19    | 22    | 25  |
| 4 or more       | 11       | 10    | 12    | 13    | 12    | 11    | 7     | 16  |
| Unweighted base | 6,110    | 693   | 954   | 1,192 | 1,029 | 1,031 | 743   | 468 |
| Weighted base   | 6,650    | 970   | 1,176 | 1,334 | 1,103 | 973   | 670   | 425 |
| <b>WOMEN</b>    |          |       |       |       |       |       |       |     |
| 0               | 60       | 55    | 58    | 62    | 62    | 64    | 67    | 54  |
| 1-3             | 25       | 29    | 27    | 22    | 24    | 22    | 21    | 29  |
| 4 or more       | 15       | 16    | 15    | 16    | 14    | 14    | 11    | 17  |
| Unweighted base | 7,704    | 847   | 1,211 | 1,555 | 1,226 | 1,242 | 860   | 763 |
| Weighted base   | 7,144    | 982   | 1,210 | 1,384 | 1,150 | 1,018 | 737   | 663 |
| <b>SCOTLAND</b> |          |       |       |       |       |       |       |     |
| <b>MEN</b>      |          |       |       |       |       |       |       |     |
| 0               | 67       | 66    | 69    | 68    | 65    | 70    | 68    | 64  |
| 1-3             | 20       | 25    | 19    | 18    | 20    | 16    | 19    | 23  |
| 4 or more       | 13       | 10    | 12    | 14    | 14    | 13    | 13    | 14  |
| Unweighted base | 3,380    | 318   | 425   | 697   | 584   | 594   | 470   | 292 |
| Weighted base   | 3,614    | 553   | 567   | 718   | 637   | 533   | 376   | 232 |
| <b>WOMEN</b>    |          |       |       |       |       |       |       |     |
| 0               | 61       | 54    | 64    | 61    | 59    | 65    | 65    | 55  |
| 1-3             | 23       | 30    | 20    | 20    | 23    | 20    | 21    | 28  |
| 4 or more       | 17       | 16    | 17    | 18    | 18    | 15    | 14    | 18  |
| Unweighted base | 4,285    | 391   | 582   | 853   | 763   | 737   | 527   | 432 |
| Weighted base   | 4,057    | 547   | 640   | 782   | 664   | 570   | 447   | 408 |

Notes: GHQ12 is a questionnaire containing 12 questions about general level of happiness, depression, anxiety and sleep disturbance over the past four weeks. In the 2003 Health Survey for England a score of 4 or more was used as a threshold to identify informants with high levels of psychological distress, and is referred to as a "high GHQ12 score".

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.  
The Scottish Executive (2005). The Scottish Health Survey 2003, Vol 2. The Stationery Office: Edinburgh.

*Figure 8.1a High GHQ12 score (4+) by sex and age, 2003, England*

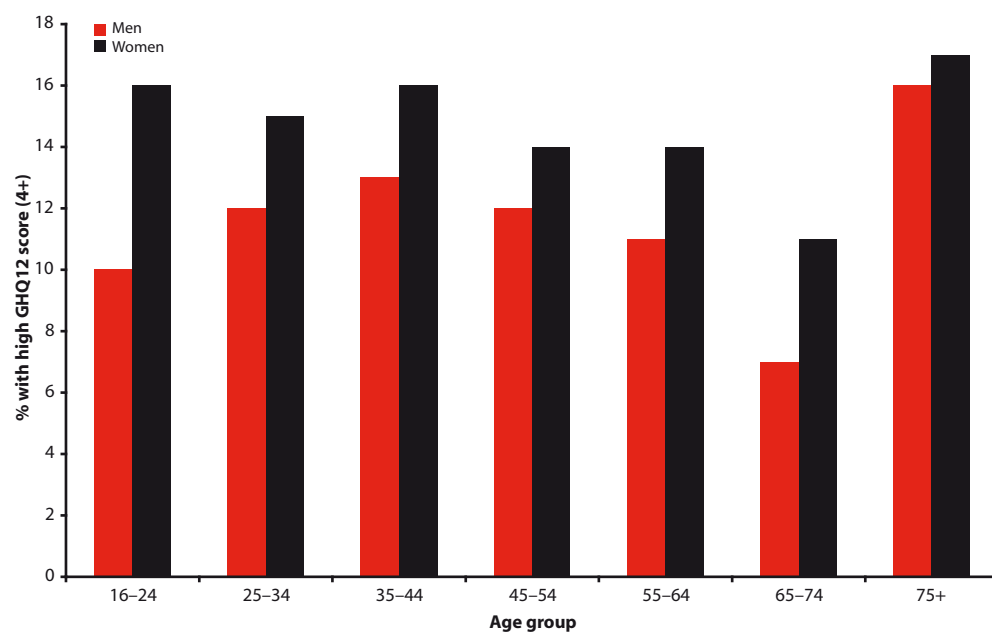


*Figure 8.1b High GHQ12 score (4+) by sex and age, 2003, Scotland*

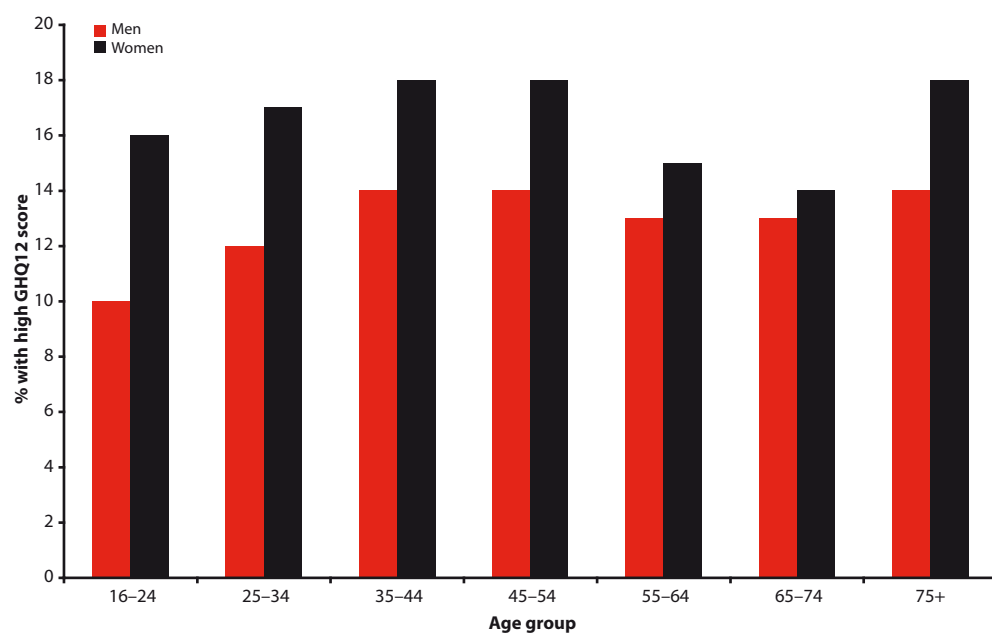


**Table 8.2** GHQ12 score by sex and household income, adults aged 16 and over, 2003, England and Scotland

| GHQ12 score     | Equivalentised household income quintile |          |          |          |              |
|-----------------|------------------------------------------|----------|----------|----------|--------------|
|                 | Lowest<br>%                              | 2nd<br>% | 3rd<br>% | 4th<br>% | Highest<br>% |
| <b>ENGLAND</b>  |                                          |          |          |          |              |
| <b>MEN</b>      |                                          |          |          |          |              |
| 0               | 54                                       | 63       | 67       | 71       | 68           |
| 1-3             | 23                                       | 23       | 23       | 22       | 24           |
| 4 or more       | 23                                       | 14       | 10       | 7        | 8            |
| Unweighted base | 873                                      | 841      | 1,120    | 1,244    | 1,238        |
| Weighted base   | 928                                      | 895      | 1,209    | 1,372    | 1,345        |
| <b>WOMEN</b>    |                                          |          |          |          |              |
| 0               | 54                                       | 57       | 62       | 63       | 62           |
| 1-3             | 27                                       | 26       | 24       | 23       | 27           |
| 4 or more       | 19                                       | 17       | 15       | 13       | 11           |
| Unweighted base | 1,293                                    | 1,192    | 1,487    | 1,399    | 1,213        |
| Weighted base   | 1,169                                    | 1,064    | 1,365    | 1,336    | 1,144        |
| <b>SCOTLAND</b> |                                          |          |          |          |              |
| <b>MEN</b>      |                                          |          |          |          |              |
| 0               | 55                                       | 62       | 68       | 72       | 73           |
| 1-3             | 21                                       | 23       | 17       | 20       | 18           |
| 4 or more       | 24                                       | 15       | 15       | 8        | 9            |
| Unweighted base | 442                                      | 611      | 557      | 616      | 747          |
| Weighted base   | 475                                      | 590      | 591      | 665      | 813          |
| <b>WOMEN</b>    |                                          |          |          |          |              |
| 0               | 49                                       | 59       | 61       | 65       | 62           |
| 1-3             | 26                                       | 21       | 22       | 22       | 27           |
| 4 or more       | 24                                       | 20       | 16       | 13       | 11           |
| Unweighted base | 655                                      | 870      | 725      | 691      | 782          |
| Weighted base   | 625                                      | 789      | 685      | 658      | 750          |

Notes: Data are weighted for non response. The weighted base is the base for age-standardised percentages. For method of age-standardisation see source.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.  
The Scottish Executive (2005) The Scottish Health Survey 2003, Vol 2. The Stationery Office: Edinburgh.

**Table 8.3** GHQ12 score by sex and Government Office Region, 2003, England

| GHQ12 score     | Government Office Region |                    |                                   |                       |                       |                      |             |                    |                    |
|-----------------|--------------------------|--------------------|-----------------------------------|-----------------------|-----------------------|----------------------|-------------|--------------------|--------------------|
|                 | North<br>East<br>%       | North<br>West<br>% | Yorkshire<br>& the<br>Humber<br>% | East<br>Midlands<br>% | West<br>Midlands<br>% | East<br>England<br>% | London<br>% | South<br>East<br>% | South<br>West<br>% |
| <b>MEN</b>      |                          |                    |                                   |                       |                       |                      |             |                    |                    |
| 0               | 62                       | 67                 | 66                                | 65                    | 63                    | 68                   | 63          | 68                 | 67                 |
| 1-3             | 22                       | 21                 | 23                                | 23                    | 26                    | 23                   | 24          | 20                 | 23                 |
| 4 or more       | 17                       | 11                 | 11                                | 11                    | 11                    | 9                    | 13          | 12                 | 10                 |
| Unweighted base | 372                      | 838                | 591                               | 582                   | 652                   | 752                  | 740         | 796                | 607                |
| Weighted base   | 344                      | 861                | 669                               | 596                   | 699                   | 775                  | 938         | 1101               | 667                |
| <b>WOMEN</b>    |                          |                    |                                   |                       |                       |                      |             |                    |                    |
| 0               | 60                       | 59                 | 60                                | 63                    | 58                    | 61                   | 57          | 61                 | 63                 |
| 1-3             | 22                       | 25                 | 27                                | 23                    | 27                    | 25                   | 26          | 25                 | 24                 |
| 4 or more       | 18                       | 16                 | 13                                | 15                    | 14                    | 14                   | 17          | 15                 | 13                 |
| Unweighted base | 488                      | 1,058              | 752                               | 730                   | 841                   | 886                  | 946         | 1228               | 775                |
| Weighted base   | 393                      | 947                | 732                               | 627                   | 753                   | 792                  | 980         | 1177               | 742                |

Notes: Data are weighted for non response. The weighted base is the base for age-standardised percentages. For method of age-standardisation see source.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 8.4** *Prevalence of high GHQ12 score (4+) by sex and ethnic group, adults aged 16 and over, 2004, England*

|                        | General<br>population<br>% | Black<br>Caribbean<br>% | Black<br>African<br>% | Indian<br>% | Pakistani<br>% | Bangladeshi<br>% | Chinese<br>% | Irish<br>% |
|------------------------|----------------------------|-------------------------|-----------------------|-------------|----------------|------------------|--------------|------------|
| <b>MEN</b>             | 11                         | 13                      | 11                    | 16          | 15             | 18               | 9            | 12         |
| <i>Weighted base</i>   | 41,950                     | 372                     | 295                   | 769         | 315            | 104              | 135          | 1,614      |
| <i>Unweighted base</i> | 2,621                      | 315                     | 293                   | 464         | 322            | 246              | 310          | 427        |
| <b>WOMEN</b>           | 15                         | 18                      | 19                    | 14          | 20             | 15               | 13           | 15         |
| <i>Weighted base</i>   | 44,845                     | 556                     | 364                   | 890         | 328            | 122              | 139          | 2,182      |
| <i>Unweighted base</i> | 3,523                      | 514                     | 350                   | 534         | 334            | 283              | 318          | 587        |

Notes: Age-standardised percentages (standardised risk ratios x percentage in general population).

Source: Department of Health (2005) *Health Survey for England. The Health of Minority Ethnic Groups 2004*. The Stationery Office: London.

**Table 8.5** *Perceived social support by sex and age, 2003, England*

|                                 | All ages<br>% | 16-24<br>% | 25-34<br>% | 35-44<br>% | 45-54<br>% | 55-64<br>% | 65-74<br>% | 75+<br>% |
|---------------------------------|---------------|------------|------------|------------|------------|------------|------------|----------|
| <b>Perceived social support</b> |               |            |            |            |            |            |            |          |
| <b>MEN</b>                      |               |            |            |            |            |            |            |          |
| No lack                         | 55            | 54         | 58         | 58         | 55         | 51         | 51         | 53       |
| Some lack                       | 28            | 28         | 25         | 27         | 28         | 29         | 31         | 28       |
| Severe lack                     | 17            | 18         | 17         | 15         | 16         | 20         | 18         | 20       |
| <i>Weighted base</i>            | 6,674         | 972        | 1,184      | 1,333      | 1,109      | 976        | 676        | 425      |
| <i>Unweighted base</i>          | 6,127         | 695        | 959        | 1,190      | 1,032      | 1,033      | 749        | 469      |
| <b>WOMEN</b>                    |               |            |            |            |            |            |            |          |
| No lack                         | 67            | 68         | 67         | 67         | 67         | 69         | 67         | 63       |
| Some lack                       | 23            | 22         | 23         | 22         | 22         | 23         | 22         | 25       |
| Severe lack                     | 10            | 10         | 9          | 12         | 11         | 8          | 11         | 12       |
| <i>Weighted base</i>            | 7,184         | 984        | 1,214      | 1,389      | 1,158      | 1,023      | 744        | 672      |
| <i>Unweighted base</i>          | 7,749         | 849        | 1,216      | 1,561      | 1,234      | 1,247      | 869        | 773      |

Notes: Data are weighted for non response.

Source: Department of Health (2004) *Health Survey for England 2003. Volume 2: Risk factors for CVD*. The Stationery Office: London.

**Table 8.6** *Perceived social support by sex and socio-economic classification, adults aged 16 and over, 2003, England*

|                                 | NS-SEC of head of household |              |                                       |                               |                        |
|---------------------------------|-----------------------------|--------------|---------------------------------------|-------------------------------|------------------------|
|                                 | Managerial & professional   | Intermediate | Small employers & own account workers | Lower supervisory & technical | Semi-routine & routine |
| <i>Perceived social support</i> | %                           | %            | %                                     | %                             | %                      |
| <b>MEN</b>                      |                             |              |                                       |                               |                        |
| No lack                         | 64                          | 58           | 50                                    | 49                            | 45                     |
| Some lack                       | 25                          | 25           | 33                                    | 31                            | 30                     |
| Severe lack                     | 11                          | 17           | 18                                    | 19                            | 26                     |
| Weighted base                   | 2,806                       | 469          | 764                                   | 902                           | 1,628                  |
| Unweighted base                 | 2,573                       | 421          | 720                                   | 848                           | 1,483                  |
| <b>WOMEN</b>                    |                             |              |                                       |                               |                        |
| No lack                         | 73                          | 68           | 67                                    | 67                            | 57                     |
| Some lack                       | 21                          | 22           | 23                                    | 21                            | 28                     |
| Severe lack                     | 7                           | 10           | 10                                    | 11                            | 15                     |
| Weighted base                   | 2,792                       | 681          | 706                                   | 831                           | 1,995                  |
| Unweighted base                 | 2,974                       | 752          | 757                                   | 887                           | 2,193                  |

Notes: From April 2001 the National Statistics Socio-economic classification (NS-SEC) was introduced for all official statistics and surveys. It has replaced Social Class based on Occupation and Socio-economic Groups (SEG).

Data are weighted for non response. The weighted base is the base for age-standardised percentages. For method of age-standardisation see source.

Source: Department of Health (2004) Health Survey for England 2003. Volume 2: Risk factors for CVD. The Stationery Office: London.

**Figure 8.6** *Percentage perceiving severe lack of social support by sex and socio-economic classification, adults aged 16 and over, 2003, England*

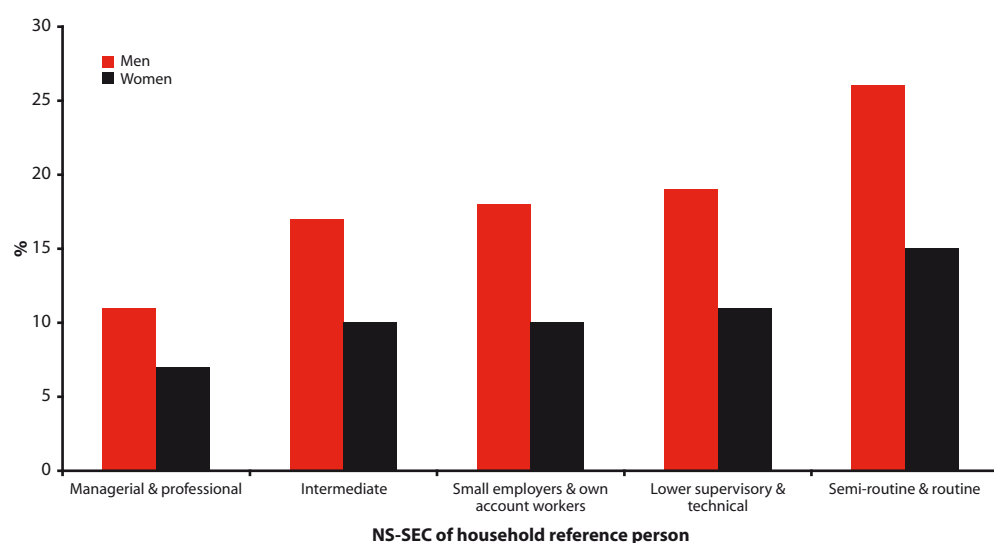


**Table 8.7** *Perceived social support by sex and household income, adults aged 16 and over, 2003, England*

| <i>Perceived social support</i> | <i>Equivalised household income quintile</i> |                 |                 |                 |                     |
|---------------------------------|----------------------------------------------|-----------------|-----------------|-----------------|---------------------|
|                                 | <i>Lowest</i><br>%                           | <i>2nd</i><br>% | <i>3rd</i><br>% | <i>4th</i><br>% | <i>Highest</i><br>% |
| <b>MEN</b>                      |                                              |                 |                 |                 |                     |
| No lack                         | 40                                           | 51              | 53              | 60              | 69                  |
| Some lack                       | 29                                           | 26              | 30              | 28              | 23                  |
| Severe lack                     | 31                                           | 23              | 17              | 12              | 9                   |
| <i>Weighted base</i>            | 936                                          | 895             | 1,221           | 1,369           | 1,351               |
| <i>Unweighted base</i>          | 878                                          | 843             | 1,130           | 1,242           | 1,243               |
| <b>WOMEN</b>                    |                                              |                 |                 |                 |                     |
| No lack                         | 57                                           | 60              | 67              | 71              | 76                  |
| Some lack                       | 26                                           | 25              | 24              | 23              | 18                  |
| Severe lack                     | 17                                           | 15              | 10              | 6               | 6                   |
| <i>Weighted base</i>            | 1,184                                        | 1,068           | 1,378           | 1,339           | 1,150               |
| <i>Unweighted base</i>          | 1,310                                        | 1,197           | 1,502           | 1,400           | 1,221               |

*Notes:* Data are weighted for non response. The weighted base is the base for age-standardised percentages. For method of age-standardisation see source.

*Source:* Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 8.8** *Percentage perceiving severe lack of social support by sex and ethnic group, adults aged 16 and over, 2004, England*

|                        | <i>General population</i> | <i>Black Caribbean</i> | <i>Black African</i> | <i>Indian</i> | <i>Pakistani</i> | <i>Bangladeshi</i> | <i>Chinese</i> | <i>Irish</i> |
|------------------------|---------------------------|------------------------|----------------------|---------------|------------------|--------------------|----------------|--------------|
|                        | %                         | %                      | %                    | %             | %                | %                  | %              | %            |
| <b>MEN</b>             |                           |                        |                      |               |                  |                    |                |              |
| No lack                | 16                        | 25                     | 23                   | 29            | 38               | 35                 | 30             | 17           |
| <i>Weighted base</i>   | 42,128                    | 390                    | 296                  | 771           | 315              | 104                | 135            | 1624         |
| <i>Unweighted base</i> | 2,636                     | 327                    | 296                  | 467           | 321              | 246                | 312            | 433          |
| <b>WOMEN</b>           |                           |                        |                      |               |                  |                    |                |              |
| No lack                | 11                        | 20                     | 23                   | 22            | 30               | 33                 | 26             | 11           |
| <i>Weighted base</i>   | 45,113                    | 567                    | 377                  | 907           | 341              | 126                | 143            | 2195         |
| <i>Unweighted base</i> | 3,548                     | 521                    | 362                  | 541           | 346              | 292                | 328            | 597          |

*Notes:* Age-standardised percentages (standardised risk ratios x percentage in general population).

*Source:* Department of Health (2005) Health Survey for England. The Health of Minority Ethnic Groups 2004. The Stationery Office: London.

**Figure 8.8** *Percentage perceiving severe lack of social support by sex and ethnic group, adults aged 16 and over, 2004, England*

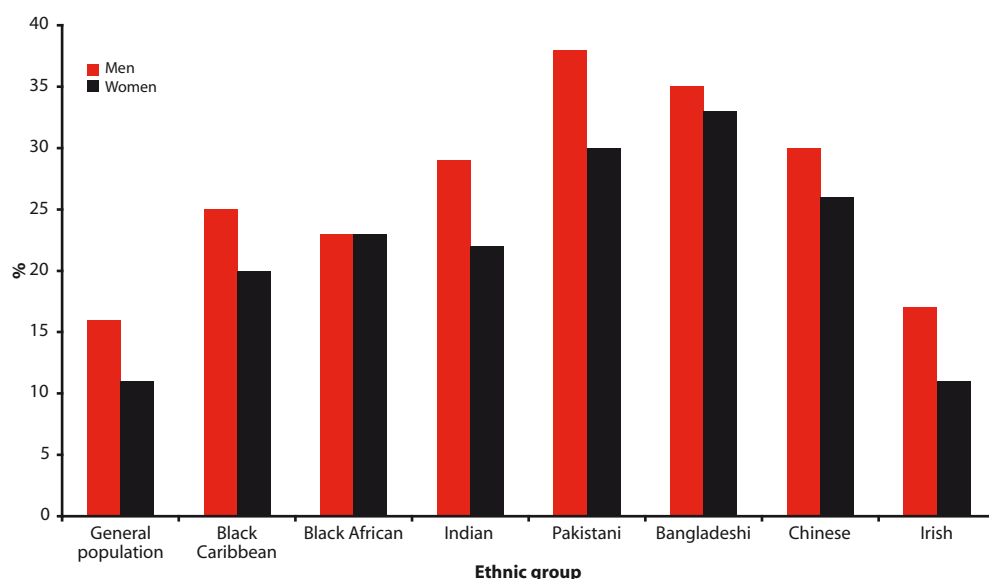


**Table 8.9** *Amount of control over work, amount of variety in work and pace of work among adults in paid employment, by sex and age, adults aged 16 and over, 1994, England*

|                                    | Age Group     |            |            |            |            |            |          |
|------------------------------------|---------------|------------|------------|------------|------------|------------|----------|
|                                    | All ages<br>% | 16-24<br>% | 25-34<br>% | 35-44<br>% | 45-54<br>% | 55-64<br>% | 65+<br>% |
| <b>MEN</b>                         |               |            |            |            |            |            |          |
| <b>Amount of control over work</b> |               |            |            |            |            |            |          |
| Low                                | 19            | 37         | 19         | 14         | 15         | 18         | 19       |
| Medium                             | 37            | 44         | 41         | 35         | 32         | 37         | 27       |
| High                               | 44            | 19         | 41         | 51         | 53         | 45         | 54       |
| <b>Amount of variety at work</b>   |               |            |            |            |            |            |          |
| Low                                | 33            | 42         | 29         | 30         | 29         | 39         | 55       |
| Medium                             | 40            | 36         | 41         | 40         | 42         | 41         | 36       |
| High                               | 27            | 22         | 30         | 30         | 29         | 20         | 9        |
| <b>Pace of work</b>                |               |            |            |            |            |            |          |
| Low                                | 26            | 30         | 23         | 21         | 26         | 33         | 63       |
| Medium                             | 41            | 43         | 42         | 41         | 40         | 43         | 26       |
| High                               | 33            | 27         | 35         | 38         | 34         | 24         | 12       |
| Base                               | 4,432         | 598        | 1,201      | 1,107      | 916        | 523        | 87       |
| <b>WOMEN</b>                       |               |            |            |            |            |            |          |
| <b>Amount of control over work</b> |               |            |            |            |            |            |          |
| Low                                | 31            | 41         | 29         | 28         | 30         | 32         | 25       |
| Medium                             | 40            | 41         | 39         | 40         | 41         | 40         | 36       |
| High                               | 29            | 18         | 32         | 33         | 29         | 28         | 39       |
| <b>Amount of variety at work</b>   |               |            |            |            |            |            |          |
| Low                                | 50            | 54         | 46         | 48         | 52         | 61         | 60       |
| Medium                             | 35            | 36         | 36         | 37         | 33         | 27         | 22       |
| High                               | 15            | 10         | 18         | 15         | 15         | 12         | 17       |
| <b>Pace of work</b>                |               |            |            |            |            |            |          |
| Low                                | 28            | 27         | 26         | 26         | 27         | 32         | 64       |
| Medium                             | 39            | 41         | 41         | 39         | 39         | 36         | 26       |
| High                               | 33            | 32         | 33         | 35         | 34         | 31         | 10       |
| Base                               | 4,070         | 597        | 1,088      | 1,075      | 878        | 372        | 58       |

Source: Department of Health (1996) Health Survey for England 1994. The Stationery Office: London.

**Table 8.10** *Percentage of adults in paid employment with low control over work, high pace of work and low variety of work, by sex and social class, adults aged 16 and over, 1994, England*

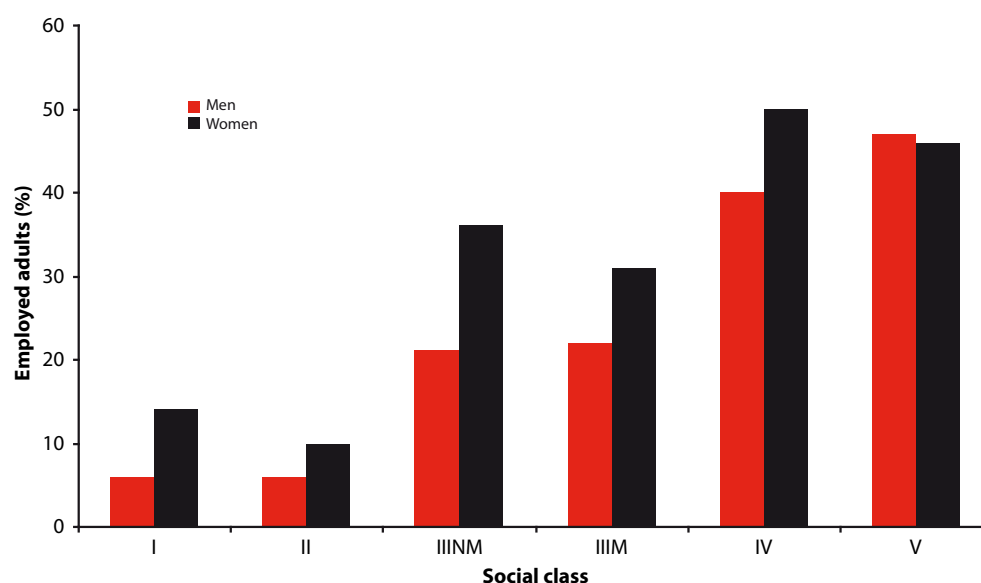
|                       | Total | I   | II    | IIINM | IIIM  | IV  | V   |
|-----------------------|-------|-----|-------|-------|-------|-----|-----|
|                       | %     | %   | %     | %     | %     | %   | %   |
| <b>MEN</b>            |       |     |       |       |       |     |     |
| Low control over work | 20    | 6   | 6     | 21    | 22    | 40  | 47  |
| Low variety at work   | 33    | 9   | 18    | 35    | 35    | 62  | 66  |
| High pace of work     | 32    | 40  | 40    | 30    | 27    | 24  | 26  |
| Base                  | 4,432 | 399 | 1,295 | 498   | 1,371 | 539 | 179 |
| <b>WOMEN</b>          |       |     |       |       |       |     |     |
| Low control over work | 31    | 14  | 10    | 36    | 31    | 50  | 46  |
| Low variety at work   | 51    | 8   | 22    | 56    | 52    | 74  | 92  |
| High pace of work     | 33    | 42  | 45    | 30    | 29    | 25  | 20  |
| Base                  | 4,070 | 108 | 1,143 | 1,519 | 274   | 655 | 240 |

Notes: Age-standardised percentages. For method of standardisation see source.

Base varied slightly between questions. Base given for 'variety at work'.

Source: Department of Health (1996) Health Survey for England 1994. The Stationery Office: London.

**Figure 8.10** *Percentage of employed adults with low control at work, by sex and social class, 1994, England*



# 9. Blood Pressure

Risk of CHD is directly related to both systolic and diastolic blood pressure levels. Meta-analysis of prospective data on over one million adults has shown that for adults aged 40 to 69 years, each 20mmHg increase in usual systolic blood pressure, or 10mmHg increase in usual diastolic blood pressure, doubles the risk of death from CHD<sup>1</sup>. At older ages the increase in risk of death from CHD is smaller, around 50% increase for every 20mmHg increase in usual systolic or 10mmHg increase in diastolic blood pressure in adults aged 80 to 89 years.

Research from the World Health Organization suggests that the cardiovascular burden due to raised blood pressure may be greater than previously suggested. The World Health Report 2002 estimates that around 11% of all disease burden in developed countries is caused by raised blood pressure, and that over 50% of CHD and almost 75% of stroke in developed countries is due to systolic blood pressure levels in excess of the theoretical minimum (115mmHg)<sup>2</sup>.

More recently the INTERHEART study estimated that 22% of heart attacks in Western Europe and 25% of heart attacks in Central and Eastern Europe were due to a history of high blood pressure, and that those with a history of hypertension were at just under twice the risk of a heart attack compared to those with no history of hypertension<sup>3</sup>.

The 2004 British Hypertension Society guidelines for hypertension management recommend that drug treatment should be considered for individuals with blood pressures of 140/90mmHg or over, and that optimal blood pressure treatment targets are a systolic blood pressure of less than 140mmHg and a diastolic blood pressure of less than 85mmHg (and lower still, at 130/85mmHg, in people with diabetes). People with high normal blood pressures 130-139/85-89mmHg should be assessed yearly. The optimal blood pressure level is now classified as <120/<80mmHg<sup>4</sup> (Table 9.1).

Both drug treatment and lifestyle changes - particularly weight loss, an increase in physical activity, and a reduction in salt and alcohol intake - can effectively lower blood pressure.

## *Public health targets*

There are no blood pressure targets for England, Wales, Scotland or Northern Ireland. The blood pressure recommendations and definition of hypertension are set out in Table 9.1.

## *Overall levels*

In 2005 the mean systolic blood pressure for men in England was 134mmHg, and for women 128mmHg (Table 9.2 and Figure 9.2).

In England in 2005 35% of men and 28% of women had hypertension (defined here as a systolic

blood pressure of 140mmHg or over, or a diastolic blood pressure of 90mmHg or over) or were being treated for hypertension. Around three-fifths (59%) of men and two-fifths (44%) of women with hypertension were not receiving treatment. Of those that were treated, just over 50% remained hypertensive (Table 9.3).

### *Age and sex differences*

Mean systolic blood pressure increases with age in both men and women. In 2005 mean systolic blood pressure was 128mmHg in men aged 16 to 24 compared to 141mmHg in men aged 75 and over, and 117mmHg compared to 144mmHg in women (Table 9.2).

The prevalence of hypertension increases with age in both sexes. For example, only 1% of women aged 16 to 24 are hypertensive, compared to 42% aged 55 to 64 and two-thirds aged 65 to 74 (Table 9.3 and Figure 9.3).

### *Temporal trends*

Health Survey for England data show that since 1993 there has been a general tendency for mean systolic and diastolic blood pressure to fall. This change has occurred in both men and women, and has been more pronounced among older compared to younger age groups (Table 9.2 and Figure 9.2).

Between 1998 and 2005, the prevalence of high blood pressure in England fell slightly in men (from 41% to 39%), and women (from 33% to 29%)<sup>5</sup> (Table 9.4).

### *National and regional differences*

Data from the Scottish Health Survey suggest that the prevalence of high blood pressure is similar in England and Scotland. In 2003, 34% of English men and 30% of English women were hypertensive compared to 33% of Scottish men and 33% of Scottish women<sup>6</sup> (Table 9.5).

Data from Wales and Northern Ireland are not comparable with those for England and Scotland, as they are not based on direct blood pressure measurements. In Wales, the Welsh Health Survey 2004/05, showed that 19% of people reported being treated for raised blood pressure<sup>7</sup>. In Northern Ireland, the Northern Ireland Health and Social Wellbeing Survey 2001, found that 19% of men and 27% of women reported having been informed by a health professional that they had high blood pressure<sup>8</sup>.

### *Socio-economic differences*

In England in 2003, the age-standardised prevalence of high blood pressure was highest in lower supervisory and technical households in both men and women. The prevalence ranged from 25% in managerial and professional households to 29% in lower supervisory and technical households in men, and from 24% to 32% in women (Table 9.6).

### *Ethnic differences*

Data from the Health Survey for England show that in 2004 the proportion of men with high blood pressure in Bangladeshi men was half that of the general population; in Pakistani and Chinese men the proportion was two thirds that of the general population. Pakistani and Chinese

women were half as likely to have high blood pressure than women in the general population (Table 9.7).

The prevalence of untreated hypertension was lower among Pakistani, Bangladeshi and Chinese men and Indian, Pakistani, Bangladeshi and Chinese women than in the general population<sup>9</sup>.

## *International differences*

Data from the World Health Organization<sup>10</sup> show a wide range in mean systolic blood pressure throughout Europe. For men in 2002, the lowest systolic blood pressure was found in Turkey (117.6mmHg) and the highest in Georgia (139.7 mmHg). For women in 2002 the lowest was Denmark (114.8 mmHg) and the highest was Georgia (134.6 mmHg) (Table 9.8 and Figures 9.8a and 9.8b). Mean systolic blood pressure in the UK in 2002 was 132.2 mmHg for men and 121.2 mmHg for women.

Trend data from the World Health Organization's MONICA Project show that between the mid-1980s and mid-1990s the majority of populations included in the study experienced a decline in average systolic blood pressure. Compared to other cities in the study, declines in average systolic blood pressure were moderately high in Glasgow but low in Belfast, where no significant decline occurred<sup>11</sup>.

1. Prospective Studies Collaboration (2002) Age-specific relevance of usual blood pressure to vascular mortality: a meta analysis of individual data for one million adults in 61 prospective studies. *The Lancet*; 360: 1903-1913.
2. World Health Organization (2002) *The World Health Report 2002. Reducing Risks, Promoting Healthy Life*. World Health Organization: Geneva.
3. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, McQueen M, Budaj A, Pais P, Varigo J, Lisheng A, on behalf of the INTERHEART Study Investigators (2004) Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART Study): case-control study. *The Lancet*; 364: 937-952.
4. Williams B, Poulter N, Brown M, Davis M, McInnes G, Potter J, Sever P, Thom S; the BHS guidelines working party, for the British Hypertension Society (2004) *British Hypertension Society guidelines for hypertension management 2004 (BHS-IV): summary*. *BMJ*; 328: 634-640.
5. These figures are the unweighted results from both surveys. While weighted data from 2003 are available and provide the best estimate for this year, when looking at trends the unweighted data are more consistent with previous years.
6. The Scottish Health Survey (SHS) uses the same methods as the Health Survey for England.
7. National Assembly for Wales (2006) *Welsh Health Survey 2004/05*. The Stationery Office: Cardiff.
8. Department of Health, Social Services and Public Safety (2002) *Northern Ireland Health and Social Wellbeing Survey 2001*. National Statistics and Research Agency: Belfast.
9. See Table 7.3, page 32 in *The Health of Minority Ethnic Groups - headline tables (2005) Health Survey for England 2004*. NHS Health and Social Care Information Centre.
10. World Health Organization (2005) *The SuRF Report 2. Surveillance of chronic disease Risk Factors – Country level data and comparable estimates*. WHO Global Infobase ([www.who.int/ncd\\_surveillance/infobase/web/surf2/start.html](http://www.who.int/ncd_surveillance/infobase/web/surf2/start.html)).
11. WHO MONICA Project (2003) *Monica monograph and multimedia sourcebook*. Edited by Hugh Tunstall-Pedoe for the WHO MONICA Project. WHO: Geneva.

**Table 9.1** *Blood pressure recommendations and hypertension definition for the United Kingdom*

| <i>Recommendations<sup>1</sup></i>                                     |                                                                                                                                                  |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Systolic blood pressure – general population                           | No greater than 140mmHg                                                                                                                          |
| Systolic blood pressure – diabetes or chronic renal failure sufferers  | No greater than 130mmHg                                                                                                                          |
| Diastolic blood pressure – general population                          | No greater than 85mmHg                                                                                                                           |
| Diastolic blood pressure – diabetes or chronic renal failure sufferers | No greater than 80mmHg                                                                                                                           |
| <i>Hypertension<sup>1</sup></i>                                        |                                                                                                                                                  |
| Definition                                                             | Systolic blood pressure greater than or equal to 140mmHg, and / or diastolic blood pressure greater than or equal to 90mmHg                      |
| Threshold for drug treatment                                           | Sustained levels of systolic blood pressure greater than or equal to 160mmHg, and / or diastolic blood pressure greater than or equal to 100mmHg |

1. Williams B, Poulter NR, Brown MJ et al (2004). Guidelines for management of hypertension: report of the fourth working party of the British Hypertension Society 2004-BHS IV. *Journal of Human Hypertension*. 18; 139-185.

**Table 9.2** *Systolic and diastolic blood pressure by sex and age, adults aged 16 and over, 1993 to 2005, England*

|                                             | All ages | 16-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+ |
|---------------------------------------------|----------|-------|-------|-------|-------|-------|-------|-----|
| <b>MEN</b>                                  |          |       |       |       |       |       |       |     |
| <b>Mean systolic blood pressure (mmHg)</b>  |          |       |       |       |       |       |       |     |
| 1993                                        | 139      | 132   | 133   | 135   | 138   | 146   | 152   | 155 |
| 1994                                        | 138      | 130   | 131   | 132   | 136   | 144   | 150   | 152 |
| 1995                                        | 138      | 131   | 132   | 133   | 137   | 144   | 150   | 151 |
| 1996                                        | 139      | 130   | 132   | 132   | 137   | 144   | 152   | 154 |
| 1997                                        | 137      | 129   | 131   | 133   | 135   | 144   | 148   | 154 |
| 1998                                        | 137      | 128   | 130   | 131   | 136   | 142   | 148   | 150 |
| 2000                                        | 136      | 127   | 131   | 132   | 135   | 141   | 146   | 145 |
| 2001                                        | 136      | 130   | 130   | 130   | 136   | 142   | 145   | 148 |
| 2002                                        | 135      | 128   | 129   | 130   | 133   | 140   | 143   | 146 |
| 2003 (unweighted)                           | 135      | 127   | 130   | 131   | 135   | 139   | 141   | 145 |
| 2005 (unweighted)                           | 135      | 128   | 131   | 133   | 133   | 137   | 140   | 141 |
| 2003 (weighted)                             | 134      | 127   | 130   | 131   | 135   | 139   | 141   | 145 |
| 2005 (weighted)                             | 134      | 128   | 130   | 133   | 133   | 137   | 140   | 141 |
| <b>Mean diastolic blood pressure (mmHg)</b> |          |       |       |       |       |       |       |     |
| 1993                                        | 78       | 65    | 72    | 78    | 82    | 85    | 84    | 81  |
| 1994                                        | 76       | 64    | 71    | 76    | 81    | 83    | 82    | 81  |
| 1995                                        | 77       | 64    | 71    | 77    | 81    | 83    | 82    | 79  |
| 1996                                        | 77       | 64    | 71    | 77    | 81    | 83    | 83    | 80  |
| 1997                                        | 76       | 63    | 71    | 77    | 80    | 83    | 81    | 79  |
| 1998                                        | 76       | 63    | 70    | 77    | 81    | 82    | 81    | 79  |
| 2000                                        | 76       | 62    | 71    | 76    | 80    | 81    | 80    | 75  |
| 2001                                        | 76       | 64    | 71    | 76    | 81    | 82    | 79    | 77  |
| 2002                                        | 75       | 63    | 71    | 76    | 79    | 81    | 78    | 75  |
| 2003 (unweighted)                           | 73       | 64    | 71    | 74    | 77    | 77    | 73    | 70  |
| 2005 (unweighted)                           | 73       | 65    | 72    | 76    | 76    | 76    | 73    | 68  |
| 2003 (weighted)                             | 73       | 64    | 71    | 74    | 77    | 77    | 73    | 70  |
| 2005 (weighted)                             | 73       | 64    | 72    | 76    | 76    | 76    | 73    | 68  |
| Unweighted base (2005)                      | 1,916    | 185   | 243   | 312   | 351   | 367   | 264   | 194 |
| Weighted base (2005)                        | 2,035    | 287   | 325   | 385   | 330   | 305   | 229   | 173 |
| <b>WOMEN</b>                                |          |       |       |       |       |       |       |     |
| <b>Mean systolic blood pressure (mmHg)</b>  |          |       |       |       |       |       |       |     |
| 1993                                        | 136      | 123   | 124   | 126   | 135   | 144   | 156   | 162 |
| 1994                                        | 134      | 121   | 122   | 125   | 132   | 143   | 154   | 160 |
| 1995                                        | 134      | 122   | 122   | 124   | 132   | 142   | 154   | 159 |
| 1996                                        | 134      | 121   | 122   | 124   | 132   | 145   | 152   | 160 |
| 1997                                        | 133      | 121   | 121   | 125   | 131   | 142   | 152   | 158 |
| 1998                                        | 133      | 120   | 120   | 123   | 132   | 140   | 149   | 155 |
| 2000                                        | 132      | 120   | 120   | 122   | 131   | 139   | 150   | 155 |
| 2001                                        | 132      | 120   | 120   | 123   | 132   | 140   | 147   | 154 |
| 2002                                        | 131      | 120   | 120   | 123   | 131   | 138   | 145   | 152 |
| 2003 (unweighted)                           | 130      | 119   | 119   | 122   | 129   | 135   | 143   | 149 |
| 2005 (unweighted)                           | 128      | 117   | 118   | 121   | 127   | 133   | 140   | 144 |
| 2003 (weighted)                             | 129      | 118   | 119   | 122   | 128   | 135   | 143   | 148 |
| 2005 (weighted)                             | 128      | 117   | 118   | 121   | 127   | 133   | 139   | 144 |
| <b>Mean diastolic blood pressure (mmHg)</b> |          |       |       |       |       |       |       |     |
| 1993                                        | 74       | 66    | 70    | 73    | 76    | 78    | 80    | 81  |
| 1994                                        | 73       | 64    | 68    | 71    | 75    | 77    | 79    | 80  |
| 1995                                        | 73       | 64    | 68    | 71    | 75    | 77    | 79    | 79  |
| 1996                                        | 73       | 64    | 69    | 72    | 75    | 78    | 78    | 79  |
| 1997                                        | 72       | 64    | 68    | 72    | 74    | 76    | 77    | 79  |
| 1998                                        | 72       | 64    | 69    | 72    | 74    | 75    | 76    | 77  |
| 2000                                        | 72       | 63    | 68    | 70    | 73    | 75    | 76    | 76  |
| 2001                                        | 72       | 63    | 68    | 71    | 74    | 75    | 75    | 75  |
| 2002                                        | 72       | 64    | 69    | 71    | 74    | 74    | 75    | 74  |
| 2003 (unweighted)                           | 72       | 67    | 70    | 72    | 74    | 75    | 74    | 71  |
| 2005 (unweighted)                           | 71       | 67    | 69    | 72    | 73    | 74    | 72    | 70  |
| 2003 (weighted)                             | 72       | 67    | 70    | 72    | 74    | 75    | 74    | 71  |
| 2005 (weighted)                             | 71       | 66    | 69    | 71    | 73    | 74    | 72    | 70  |
| Unweighted base (2005)                      | 2,392    | 216   | 325   | 429   | 453   | 431   | 298   | 240 |
| Weighted base (2005)                        | 2,208    | 270   | 327   | 400   | 347   | 342   | 257   | 264 |

Notes: Weighted data provide the best estimates for 2003 to 2005. However, for looking at trends, unweighted data for 2003 to 2005 are more consistent with previous years which are also unweighted.

The sample size in 1999 and 2004 was not sufficient to estimate mean systolic and diastolic blood pressure levels.

Source: The Information Centre (2006) Health Survey for England 2005. Latest trends. See <http://www.ic.nhs.uk/pubs/hseupdate05/tabs/file>

*Figure 9.2 Mean systolic blood pressure by sex, adults aged 16 and over, 1993 to 2005, England*

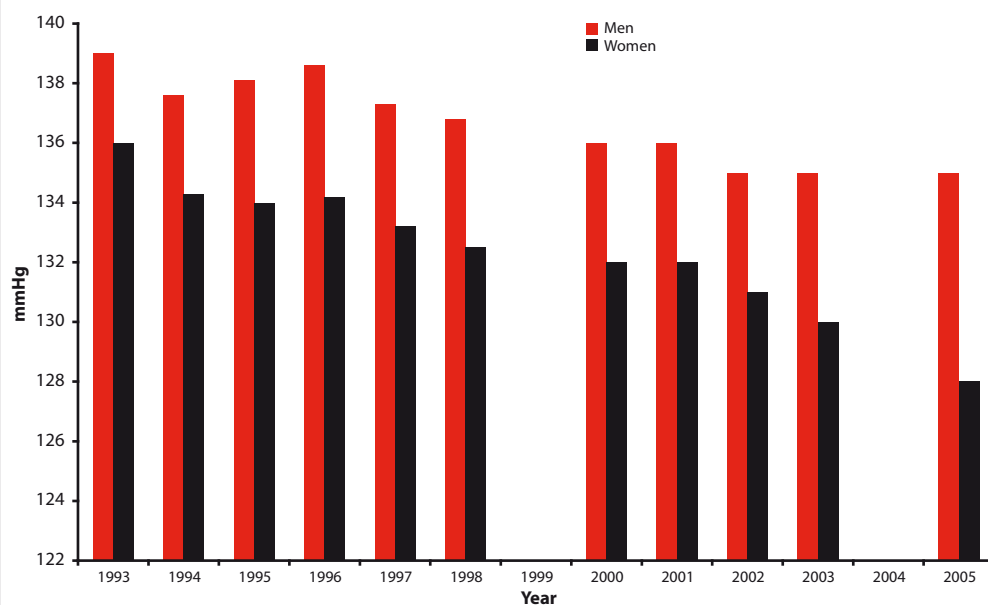


**Table 9.3** *Blood pressure levels by sex and age, adults aged 16 and over, 2005, England*

| Blood pressure level                | All ages    | 16-24      | 25-34       | 35-44       | 45-54       | 55-64       | 65-74       | 75+         |
|-------------------------------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                     | %           | %          | %           | %           | %           | %           | %           | %           |
| <b>MEN</b>                          |             |            |             |             |             |             |             |             |
| Normotensive untreated              | 65.4        | 91.4       | 83.5        | 73.8        | 68.9        | 47.4        | 36.3        | 33.2        |
| Normotensive treated                | 7.2         | -          | 0.9         | 2.2         | 6.8         | 13.7        | 15.3        | 20.2        |
| Hypertensive treated                | 7.1         | -          | 0.7         | 2.0         | 5.6         | 12.3        | 17.6        | 22.1        |
| Hypertensive untreated              | 20.3        | 8.6        | 14.9        | 22.0        | 18.6        | 26.6        | 30.7        | 24.5        |
| <b>All with high blood pressure</b> | <b>34.6</b> | <b>8.6</b> | <b>16.5</b> | <b>26.2</b> | <b>31.1</b> | <b>52.6</b> | <b>63.7</b> | <b>66.8</b> |
| Unweighted base                     | 1,916       | 185        | 243         | 312         | 351         | 367         | 264         | 194         |
| Weighted base                       | 2,035       | 287        | 325         | 385         | 330         | 305         | 229         | 173         |
| <b>WOMEN</b>                        |             |            |             |             |             |             |             |             |
| Normotensive untreated              | 71.7        | 98.7       | 96.0        | 90.0        | 78.1        | 58.3        | 38.1        | 27.3        |
| Normotensive treated                | 7.6         | -          | 1.3         | 1.1         | 6.8         | 15.2        | 18.0        | 14.2        |
| Hypertensive treated                | 8.4         | -          | -           | 1.1         | 4.0         | 9.3         | 17.6        | 33.9        |
| Hypertensive untreated              | 12.4        | 1.3        | 2.7         | 7.7         | 11.2        | 17.2        | 26.3        | 24.6        |
| <b>All with high blood pressure</b> | <b>28.3</b> | <b>1.3</b> | <b>4.0</b>  | <b>10.0</b> | <b>21.4</b> | <b>41.7</b> | <b>61.9</b> | <b>72.7</b> |
| Unweighted base                     | 2,392       | 216        | 325         | 429         | 453         | 431         | 298         | 240         |
| Weighted base                       | 2,208       | 270        | 327         | 400         | 347         | 342         | 257         | 264         |

Notes: Data are weighted for non response.

Informants were classified as having high blood pressure if their systolic blood pressure was 140mmHg or over or their diastolic blood pressure was 90mmHg or over, or they were taking medicine affecting blood pressure. "Treated" means taking medication prescribed for high blood pressure.

Source: The Information Centre (2006) Health Survey for England 2005. Latest trends. See <http://www.ic.nhs.uk/pubs/hseupdate05/tabs/file>

**Figure 9.3** *Prevalence of high blood pressure by sex and age, 2005, England*

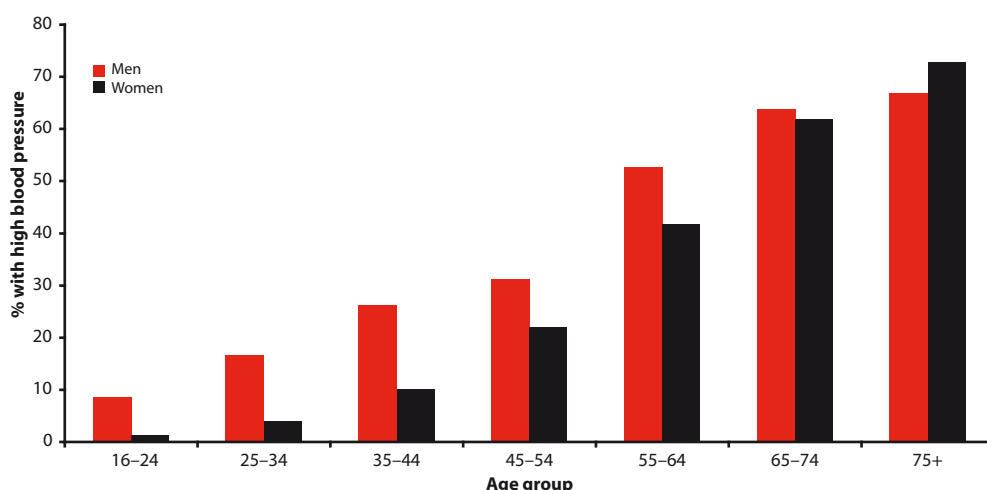


**Table 9.4** *Prevalence of high blood pressure by sex and age, 1998 to 2005, England*

| Blood pressure level                | All ages | 16-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+  |
|-------------------------------------|----------|-------|-------|-------|-------|-------|-------|------|
|                                     | %        | %     | %     | %     | %     | %     | %     | %    |
| <b>MEN</b>                          |          |       |       |       |       |       |       |      |
| <i>All with high blood pressure</i> |          |       |       |       |       |       |       |      |
| 1998                                | 40.8     | 16.0  | 20.5  | 26.1  | 42.3  | 59.8  | 69.9  | 72.8 |
| 2000                                | 39.7     | 11.9  | 21.2  | 27.1  | 40.6  | 54.5  | 69.7  | 65.4 |
| 2001                                | 40.8     | 20.3  | 17.6  | 23.0  | 41.3  | 58.1  | 68.3  | 70.2 |
| 2002                                | 37.4     | 13.8  | 16.6  | 24.3  | 36.5  | 53.4  | 61.7  | 71.2 |
| 2003 (unweighted)                   | 37.8     | 10.5  | 13.3  | 21.2  | 37.1  | 53.0  | 65.3  | 67.2 |
| 2003 (weighted)                     | 34.3     | 10.6  | 13.6  | 21.3  | 36.7  | 53.2  | 66.6  | 66.7 |
| 2005 (unweighted)                   | 39.4     | 9.2   | 17.3  | 26.0  | 33.0  | 53.4  | 64.0  | 68.6 |
| 2005 (weighted)                     | 34.6     | 8.6   | 16.5  | 26.2  | 31.1  | 52.6  | 63.7  | 66.8 |
| Unweighted base (2005)              | 1,916    | 185   | 246   | 312   | 351   | 367   | 264   | 194  |
| Weighted base (2005)                | 2,035    | 287   | 325   | 385   | 330   | 305   | 229   | 173  |
| <b>WOMEN</b>                        |          |       |       |       |       |       |       |      |
| <i>All with high blood pressure</i> |          |       |       |       |       |       |       |      |
| 1998                                | 32.9     | 4.2   | 6.9   | 13.2  | 30.8  | 51.6  | 72.8  | 77.6 |
| 2000                                | 33.2     | 4.1   | 6.2   | 10.5  | 31.0  | 51.8  | 75.1  | 80.6 |
| 2001                                | 34.7     | 5.5   | 7.4   | 11.7  | 33.5  | 54.4  | 73.7  | 78.7 |
| 2002                                | 33.8     | 4.5   | 6.1   | 12.5  | 32.7  | 52.5  | 69.8  | 78.8 |
| 2003 (unweighted)                   | 31.7     | 1.9   | 4.9   | 10.2  | 24.5  | 47.1  | 68.1  | 77.2 |
| 2003 (weighted)                     | 30.1     | 1.5   | 4.9   | 10.4  | 24.3  | 48.2  | 67.3  | 76.6 |
| 2005 (unweighted)                   | 29.3     | 1.4   | 4.0   | 10.0  | 22.7  | 41.8  | 62.1  | 72.5 |
| 2005 (weighted)                     | 28.3     | 1.3   | 4.0   | 10.0  | 21.9  | 41.7  | 61.9  | 72.7 |
| Unweighted base (2005)              | 2,392    | 216   | 325   | 429   | 453   | 431   | 298   | 240  |
| Weighted base (2005)                | 2,208    | 270   | 327   | 400   | 347   | 342   | 257   | 264  |

Notes: Adults aged 16 and over with a valid blood pressure reading and data on medication.

Informants were classified as having high blood pressure if their systolic blood pressure was 140mmHg or over or their diastolic blood pressure was 90mmHg or over, or they were taking medicine affecting blood pressure.

Weighted data provide the best estimate for 2003 and 2005. However, for looking at trends, unweighted data for 2003 and 2005 are more consistent with previous years which are also unweighted.

Source: Department of Health (2006) Health Survey for England 2005. See Department of Health website: <http://www.dh.gov.uk/assetRoot/04/09/89/15/04098915.xls>, Table 3a.

**Table 9.5** *Blood pressure levels by sex and age, adults aged 16 and over, 2003, Scotland*

| <i>Blood pressure level</i>         | Age group    |             |             |             |             |             |             |             |
|-------------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                     | All          | 16-24       | 25-34       | 35-44       | 45-54       | 55-64       | 65-74       | 75+         |
|                                     | %            | %           | %           | %           | %           | %           | %           | %           |
| <b>MEN</b>                          |              |             |             |             |             |             |             |             |
| Normotensive untreated              | 67.0         | 88.4        | 85.5        | 79.2        | 73.1        | 48.4        | 39.4        | 23.0        |
| Normotensive treated                | 5.9          | 0.7         | –           | 2.5         | 4.0         | 13.7        | 13.7        | 13.5        |
| Hypertensive treated                | 6.3          | –           | 0.3         | 0.5         | 5.7         | 7.3         | 17.3        | 29.1        |
| Hypertensive untreated              | 20.7         | 10.9        | 14.2        | 17.9        | 17.1        | 30.6        | 29.6        | 34.5        |
| <i>All with high blood pressure</i> | <i>33.0</i>  | <i>11.9</i> | <i>14.8</i> | <i>20.8</i> | <i>27.1</i> | <i>51.4</i> | <i>60.4</i> | <i>77.0</i> |
| <i>Weighted base</i>                | <i>2,032</i> | <i>294</i>  | <i>296</i>  | <i>403</i>  | <i>350</i>  | <i>314</i>  | <i>226</i>  | <i>149</i>  |
| <i>Unweighted base</i>              | <i>1,933</i> | <i>142</i>  | <i>209</i>  | <i>369</i>  | <i>328</i>  | <i>377</i>  | <i>301</i>  | <i>207</i>  |
| <b>WOMEN</b>                        |              |             |             |             |             |             |             |             |
| Normotensive untreated              | 67.3         | 98.1        | 94.5        | 83.4        | 72.4        | 50.9        | 31.9        | 22.8        |
| Normotensive treated                | 7.2          | –           | –           | 1.6         | 6.4         | 12.6        | 18.6        | 15.3        |
| Hypertensive treated                | 9.0          | –           | –           | 0.9         | 3.8         | 12.6        | 22.5        | 31.7        |
| Hypertensive untreated              | 16.6         | 1.9         | 5.5         | 14.1        | 17.4        | 23.8        | 27.0        | 30.2        |
| <i>All with high blood pressure</i> | <i>32.7</i>  | <i>1.9</i>  | <i>5.5</i>  | <i>16.6</i> | <i>27.4</i> | <i>49.1</i> | <i>68.1</i> | <i>77.2</i> |
| <i>Weighted base</i>                | <i>2,382</i> | <i>315</i>  | <i>348</i>  | <i>440</i>  | <i>373</i>  | <i>340</i>  | <i>285</i>  | <i>281</i>  |
| <i>Unweighted base</i>              | <i>2,538</i> | <i>181</i>  | <i>299</i>  | <i>493</i>  | <i>454</i>  | <i>478</i>  | <i>351</i>  | <i>282</i>  |

Notes: Adults aged 16 and over with a valid blood pressure reading and data on medication.

Informants were classified as having high blood pressure if their systolic blood pressure was 140mmHg or over or their diastolic blood pressure was 90mmHg or over, or they were taking medicine affecting blood pressure. "Treated" means taking medication prescribed for high blood pressure.

Source: The Scottish Executive (2005). The Scottish Health Survey 2003. The Stationery Office: Edinburgh

**Table 9.6** *Blood pressure levels by sex and socio-economic classification, 2003, England*

| NS-SEC of head of household         |                           |              |                                       |                               |                        |
|-------------------------------------|---------------------------|--------------|---------------------------------------|-------------------------------|------------------------|
|                                     | Managerial & professional | Intermediate | Small employers & own account workers | Lower supervisory & technical | Semi-routine & routine |
| <i>Blood pressure level</i>         | %                         | %            | %                                     | %                             | %                      |
| <b>MEN</b>                          |                           |              |                                       |                               |                        |
| Normotensive untreated              | 74.8                      | 72.9         | 75.1                                  | 70.6                          | 71.9                   |
| Normotensive treated                | 3.9                       | 5.7          | 3.2                                   | 4.7                           | 4.5                    |
| Hypertensive treated                | 4.2                       | 4.0          | 5.3                                   | 5.4                           | 5.0                    |
| Hypertensive untreated              | 17.1                      | 17.4         | 16.4                                  | 19.4                          | 18.6                   |
| <i>All with high blood pressure</i> | <b>25.2</b>               | <b>27.1</b>  | <b>24.9</b>                           | <b>29.4</b>                   | <b>28.1</b>            |
| <i>Unweighted base</i>              | 1,749                     | 286          | 489                                   | 602                           | 941                    |
| <i>Weighted base</i>                | 1,866                     | 326          | 497                                   | 623                           | 1,048                  |
| <b>WOMEN</b>                        |                           |              |                                       |                               |                        |
| Normotensive untreated              | 75.7                      | 73.4         | 74.3                                  | 68.0                          | 73.3                   |
| Normotensive treated                | 4.4                       | 5.2          | 4.3                                   | 7.8                           | 5.7                    |
| Hypertensive treated                | 5.9                       | 8.2          | 7.5                                   | 6.7                           | 6.7                    |
| Hypertensive untreated              | 14.0                      | 13.2         | 13.9                                  | 17.6                          | 14.3                   |
| <i>All with high blood pressure</i> | <b>24.3</b>               | <b>26.6</b>  | <b>25.7</b>                           | <b>32.0</b>                   | <b>26.7</b>            |
| <i>Unweighted base</i>              | 2,014                     | 498          | 520                                   | 588                           | 1,352                  |
| <i>Weighted base</i>                | 1,838                     | 457          | 483                                   | 550                           | 1,254                  |

*Notes:* From April 2001 the National Statistics Socio-economic classification (NS-SEC) was introduced for all official statistics and surveys. It has replaced Social Class based on Occupation and Socio-economic Groups (SEG).

Data are weighted for non response. The weighted base is the base for age-standardised percentages. For method of age-standardisation see source.

*Source:* Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 9.7** *Prevalence of high blood pressure by sex and ethnic group, adults aged 16 and over, 2004, England*

|                            | General population | Black Caribbean | Black African | Indian | Pakistani | Bangladeshi | Chinese | Irish |
|----------------------------|--------------------|-----------------|---------------|--------|-----------|-------------|---------|-------|
| <i>High blood pressure</i> | %                  | %               | %             | %      | %         | %           | %       | %     |
| <b>MEN</b>                 | 32                 | 38              | 25            | 33     | 20        | 16          | 20      | 36    |
| <i>Weighted base</i>       | 4,420              | 169             | 136           | 361    | 159       | 53          | 63      | 667   |
| <i>Unweighted base</i>     | 4,108              | 155             | 123           | 265    | 162       | 99          | 153     | 240   |
| <b>WOMEN</b>               | 29                 | 32              | 19            | 18     | 15        | 19          | 16      | 29    |
| <i>Weighted base</i>       | 4,702              | 249             | 183           | 442    | 207       | 83          | 66      | 923   |
| <i>Unweighted base</i>     | 5,075              | 243             | 154           | 320    | 207       | 144         | 166     | 328   |

*Notes:* Age-standardised percentages (standardised risk ratios x percentage in general population). For observed values see source.

Adults with a valid blood pressure reading and data on medication.

Informants were classified as having high blood pressure if their systolic blood pressure was 140mmHg or over or their diastolic blood pressure was 90mmHg or over, or they were taking medication for high blood pressure.

Comparative data for the general population are not available for 2004 so data have been taken from 2003 survey, which was weighted for non-response. 2004 survey is weighted for differential selection probabilities and individual-level non-response at each stage but not for household non-response.

*Source:* Department of Health (2005) Health Survey for England 2004. The Health of Minority Ethnic Groups. The Stationery Office: London.

**Table 9.8** *Mean systolic blood pressure estimates and projections for 2002, 2005 and 2010 by sex, adults aged 15 and over, all available countries, Europe*

| Country                | MEN   |       |       | WOMEN |       |       |
|------------------------|-------|-------|-------|-------|-------|-------|
|                        | 2002  | 2005  | 2010  | 2002  | 2005  | 2010  |
| Albania                | 128.8 | 128.8 | 128.8 | 125.1 | 125.1 | 125.1 |
| Austria                | 128.6 | 127.9 | 126.8 | 122.4 | 121.6 | 120.2 |
| Belarus                | 134.2 | 134.2 | 134.2 |       |       |       |
| Belgium                | 127.2 | 127.2 | 127.2 | 118.9 | 118.9 | 118.9 |
| Bosnia and Herzegovina | 130.1 | 130.1 | 130.1 | 130.7 | 130.7 | 130.7 |
| Bulgaria               | 132.4 | 132.4 | 132.4 | 125.2 | 125.2 | 125.2 |
| Cyprus                 | 127.7 | 127.7 | 127.7 | 123.4 | 123.4 | 123.4 |
| Czech Republic         | 129.8 | 129.1 | 128.0 | 123.1 | 122.2 | 120.6 |
| Denmark                | 122.2 | 121.6 | 120.6 | 114.8 | 114.1 | 113.1 |
| Estonia                | 131.4 | 131.4 | 131.4 | 121.7 | 121.7 | 121.7 |
| Finland                | 131.4 | 130.3 | 128.5 | 124.6 | 123.2 | 121.0 |
| France                 | 129.3 | 127.2 | 123.9 | 124.6 | 122.5 | 119.2 |
| Georgia                | 139.7 | 139.7 | 139.7 | 134.6 | 134.6 | 134.6 |
| Germany                | 134.4 | 134.4 | 134.4 | 130.0 | 130.0 | 130.0 |
| Greece                 | 130.5 | 129.8 | 128.6 | 124.1 | 123.2 | 121.7 |
| Hungary                | 133.7 | 133.7 | 133.7 | 126.1 | 126.1 | 126.1 |
| Iceland                | 124.9 | 124.9 | 124.9 | 117.9 | 117.9 | 117.9 |
| Israel                 | 127.5 | 126.8 | 125.7 | 121.1 | 120.2 | 118.8 |
| Italy                  | 128.8 | 127.4 | 125.0 | 121.8 | 120.3 | 118.0 |
| Lithuania              | 136.7 | 136.7 | 136.7 | 133.8 | 133.8 | 133.8 |
| Luxembourg             | 125.8 | 125.1 | 124.0 | 120.8 | 120.0 | 118.7 |
| Malta                  | 132.3 | 131.6 | 130.4 | 128.1 | 127.2 | 125.8 |
| Netherlands            | 130.5 | 129.8 | 128.7 | 121.6 | 120.8 | 119.5 |
| Poland                 | 128.6 | 128.6 | 128.6 | 123.3 | 123.3 | 123.3 |
| Portugal               | 126.7 | 126.1 | 125.1 | 124.4 | 123.6 | 122.3 |
| Romania                | 126.8 | 126.8 | 126.8 | 122.0 | 122.0 | 122.0 |
| Russian Federation     | 129.4 | 129.4 | 129.4 | 127.4 | 127.4 | 127.4 |
| Serbia and Montenegro  | 132.7 | 132.7 | 132.7 | 129.9 | 129.9 | 129.9 |
| Spain                  | 123.1 | 122.5 | 123.3 | 117.6 | 117.0 | 115.9 |
| Sweden                 | 130.8 | 130.8 | 130.8 | 125.0 | 125.0 | 125.0 |
| Switzerland            | 126.2 | 125.4 | 124.0 | 115.4 | 114.0 | 111.9 |
| Turkey                 | 117.6 | 117.6 | 117.6 | 118.8 | 118.8 | 118.8 |
| Ukraine                | 127.2 | 127.2 | 127.2 | 125.3 | 125.3 | 125.3 |
| United Kingdom         | 132.2 | 130.9 | 128.7 | 126.6 | 125.3 | 123.1 |
| Uzbekistan             | 121.4 | 121.4 | 121.4 | 121.2 | 121.2 | 121.2 |

Notes: Values age-adjusted to the WHO Standard Population.

Mean SBP is measured in mmHg.

Standard deviation available upon request, contact [infobase@who.int](mailto:infobase@who.int).

Source: World Health Organization (2005) *The SuRF Report 2. Surveillance of chronic disease Risk Factors - Country-level data and comparable estimates*. WHO Global InfoBase (<http://infobase.who.int>)

*Figure 9.8a Mean systolic blood pressure estimates, men aged 15 and over, all available countries, 2002, Europe*

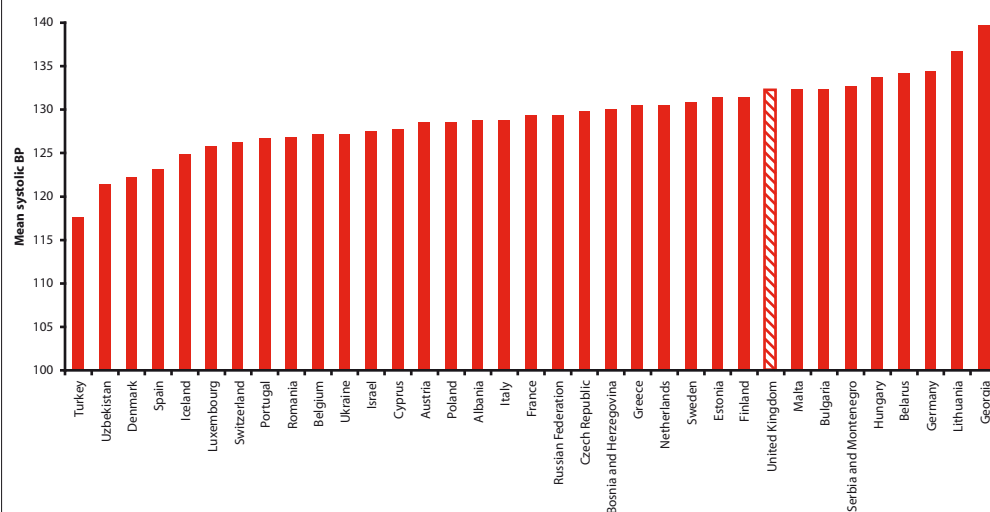
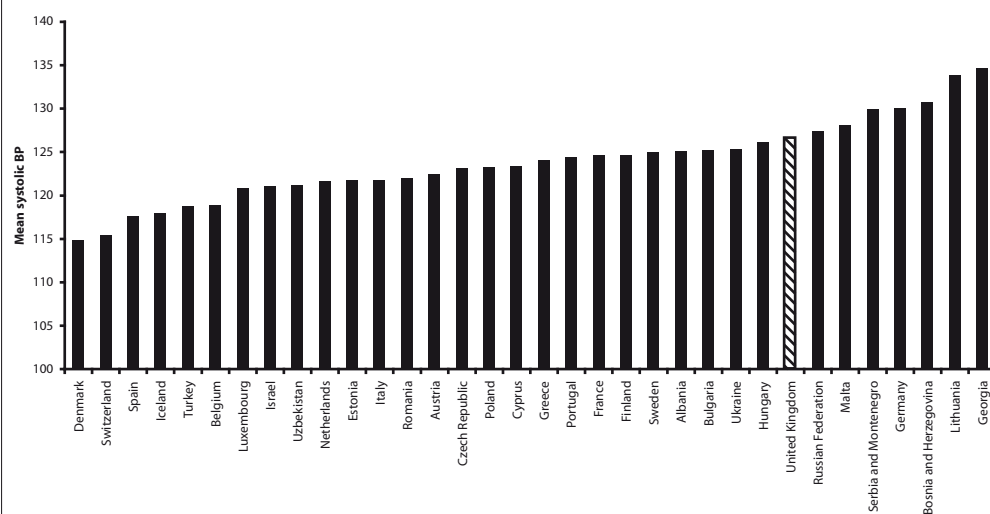


*Figure 9.8b Mean systolic blood pressure estimates, women aged 15 and over, all available countries, 2002, Europe*



# 10. Blood Cholesterol

Risk of CHD is directly related to blood cholesterol levels. Blood cholesterol levels can be reduced by drugs, physical activity and by dietary changes, in particular a reduction in the consumption of saturated fat.

Research from the World Health Organization highlights the importance of raised blood cholesterol as a risk factor for CHD. The World Health Report 2002 estimates that around 8% of all disease burden in developed countries is caused by raised blood cholesterol, and that over 60% of CHD and around 40% of ischaemic stroke in developed countries is due to total blood cholesterol levels in excess of the theoretical minimum (3.8mmol/l)<sup>1</sup>.

More recently the INTERHEART case-control study estimated that 45% of heart attacks in Western Europe and 35% of heart attacks in Central and Eastern Europe are due to abnormal blood lipids, and that those with abnormal lipids are at over three times the risk of a heart attack compared to those with normal lipids<sup>2</sup>.

Different guidelines give slightly different advice for managing high levels of blood cholesterol (hyperlipidaemia). The National Service Framework for coronary heart disease includes guidelines on the prevention of CHD in clinical practice and suggests a cholesterol target of less than 5.0mmol/l for both primary and secondary prevention<sup>3</sup>. More recent guidelines suggest a target for total cholesterol of less than 4.0mmol/l for individuals with established cardiovascular disease, diabetes, or at high risk of developing cardiovascular disease (Table 10.1).

High-density lipoprotein cholesterol (HDL-cholesterol) is the fraction of cholesterol that removes cholesterol (via the liver) from the blood. Low levels of HDL-cholesterol are associated with an increased risk of CHD and a worse prognosis after a heart attack. Guidelines on HDL-cholesterol generally recommend treatment for those with concentrations below 1.0mmol/l (Table 10.1).

## *Overall levels*

The mean blood cholesterol level for men aged 16 and over in England in 2003 was 5.5mmol/l and for women 5.6mmol/l<sup>4</sup>. About 70% of both men and women had blood cholesterol levels of 5.0mmol/l and above. In Scotland, the mean blood cholesterol level in 2003 was 5.4mmol/l for men and 5.6mmol/l for women, and 63% of both men and women aged 16 to 64 had levels of 5.0mmol/l and above<sup>5</sup> (Table 10.2).

The mean HDL-cholesterol level for those aged 16 and over in England in 2003 was 1.4mmol/l for men and 1.6mmol/l for women<sup>4</sup>, and in Scotland 1.3mmol/l for men and 1.6mmol/l for women<sup>5</sup>. Overall, about 6% of men and 2% of women had HDL-cholesterol levels of less than 1.0mmol/l in England (around 8% and 2% in Scotland) (Table 10.3).

## *Age and sex differences*

The prevalence of raised cholesterol increases with age in both men and women. In 2003, the proportion of men with cholesterol levels of 5.0mmol/l or above was 28% in those aged 16 to 24 compared to around 80% in those aged 45 to 64, and slightly lower in the two oldest age groups. The proportion of women with cholesterol levels of 5.0mmol/l or above was 34% in those aged 16 to 24 compared to 88% in those aged 55 to 64, and slightly lower in those over 65 years (Table 10.2 and Figure 10.2).

The prevalence of low HDL-cholesterol showed smaller age-related variation, with no clear pattern (Table 10.3).

Rates of low HDL-cholesterol are much higher in men than women – over three times higher overall, and between two and eight times higher in all age groups (Table 10.3).

## *Temporal trends*

In both England and Scotland, and for both men and women, the prevalence of raised total cholesterol fell between 1994 and 1998, but increased slightly between 1998 and 2003. This increase was not consistent across all age groups but was concentrated in the younger age groups. In older age groups (55 and older in men and 65 and older in women) the prevalence of raised total cholesterol has fallen steadily over the past decade (Table 10.2).

## *National and regional differences*

In 2003, the proportion of people with total cholesterol levels of 5mmol/l and above ranged between around 60% and 70% for different regions of England, for both men and women. London had the lowest prevalence of raised cholesterol (60% in men, 64% in women), and the North West had the highest prevalence (71% in men, 69% in women) (Table 10.4).

This pattern was not repeated for low HDL-cholesterol. The proportion of people with HDL-cholesterol less than 1.0mmol/l was lowest in the North West (3% in men, 1% in women), and highest in Yorkshire and the Humber (10% in men, 3% in women) (Table 10.4).

## *Socio-economic differences*

Total blood cholesterol levels show little social class variation in either sex. However, low HDL-cholesterol levels vary with income, most notably in women, where those with higher incomes are less likely to have levels of HDL-cholesterol below 1.0mmol/l (Tables 10.5 and 10.6).

Two longitudinal cohort studies in the UK examined socio-economic variations in baseline cholesterol levels. The West of Scotland cohort data (employed men aged 35 to 64 in 1970 to 1973 from West of Scotland) showed a slight gradient in cholesterol levels, with lower total cholesterol levels in the lower social classes<sup>6</sup>. The Whitehall II study (male and female civil servants aged 35 to 55 in 1985 to 1988 from London) found a slight gradient with higher total cholesterol levels in the lower social classes<sup>7</sup>.

## *Ethnic differences*

In 2004, the prevalence of blood cholesterol levels of 5.0mmol/l and above, was lower in all ethnic minority groups than the general population, with the exception of the Irish (Table 10.6).

The highest rates of HDL-cholesterol below 1.0mmol/l for both sexes in 2005 were found in the Indian, Pakistani and Bangladeshi communities. One fifth of Bangladeshi men had an HDL-cholesterol level of less than 1.0mmol/l compared to 6% of men in the general population. In contrast Black Caribbean men and women had a relatively low prevalence of low HDL-cholesterol (Table 10.7).

## *International differences*

Total blood cholesterol levels in the UK are high by international standards, particularly in women. For example, data from the World Health Organization MONICA Project show that mean blood cholesterol levels in Beijing, China were about 4.5mmol/l for men and women aged 35 to 64 in 1993; and only 20% of men aged 35 to 64 and 19% of women had levels above 5.2mmol/l (Table 10.8 and Figure 10.8).

Trend data from the MONICA Project show that between the mid-1980s and mid-1990s around half of the populations included in the study experienced a decline in average blood cholesterol levels. Compared to other cities in the study, declines in average blood cholesterol level were above average in Glasgow and Belfast, where significant declines occurred in both men and women<sup>8</sup>.

The World Health Organization global database holds worldwide estimates of mean total cholesterol levels for countries. These estimates are derived from national or sub-national surveys, and have been adjusted to national age-standardised populations. Trend data has been used to standardise the estimates to 2005. Their estimate suggests that mean total cholesterol levels for both men and women in the UK in 2005 were 5.1mmol/l, around average for Europe (Table 10.9 and Figure 10.9).

1. World Health Organization (2002) *The World Health Report 2002. Reducing Risks, Promoting Healthy Life*. World Health Organization: Geneva.
2. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, McQueen M, Budaj A, Pais P, Varigo J, Lisheng A, on behalf of the INTERHEART Study Investigators (2004) Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART Study): case-control study. *The Lancet*; 364: 937-952.
3. Department of Health (2000) *National Service Framework for Coronary Heart Disease*. DH: London.
4. Department of Health (2004) *Health Survey for England 2003*. DH: London
5. Scottish Executive (2005) *The Scottish Health Survey 2003*. Scottish Executive: Edinburgh.
6. Blane D, Hart C, Davey Smith G (1996). Association of cardiovascular disease risk factors with socioeconomic position during childhood and during adulthood. *BMJ*, 313: 1434-8.
7. Brunner E, Shipley M, Blane D (1999). When does cardiovascular risk start? Past and present socioeconomic circumstances and risk factors in adulthood. *Journal of Epidemiology and Community Health*, 53; 757-64.
8. WHO MONICA Project (2003) *Monica monograph and multimedia sourcebook*. Edited by Hugh Tunstall-Pedoe for the WHO MONICA Project. WHO: Geneva.

*Table 10.1 Cholesterol recommendations for the United Kingdom*

| UNITED KINGDOM                 |                                                                                                                                    |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Total cholesterol <sup>1</sup> | <4.0mmol/l in individuals with established cardiovascular disease, diabetes, or at high risk of developing cardiovascular disease. |
| HDL cholesterol <sup>2</sup>   | ≥ 1mmol/l in individuals with established cardiovascular disease, and those at high risk of the disease.                           |

Notes: The original recommendation for total cholesterol levels of less than 5mmol/l for individuals with cardiovascular disease, diabetes, or at high risk of developing cardiovascular disease, originally set in 1998 by the Joint British Societies is retained for audit purposes.

Source: 1. British Cardiac Society, British Hypertension Society, Diabetes UK, HEART UK, Primary Care Cardiovascular Society, The Stroke Association (2005). JBS2: Joint British Societies' guidelines on prevention of cardiovascular diseases in clinical practices. *Heart*. 91 (suppl V): v1-v52.  
2. Sacks FM, for the expert group on HDL-cholesterol (2002). The role of high density lipoprotein (HDL) cholesterol on the prevention of coronary heart disease; Expert group recommendations. *American Journal of Cardiology*. 90: 139-143.

**Table 10.2 Total cholesterol levels by sex and age, 1994, 1998 and 2003, England and 1995, 1998 and 2003, Scotland**

| <i>&gt;=5.0mmol/l total cholesterol</i> |  | All ages<br>% | 16-24<br>% | 25-34<br>% | 35-44<br>% | 45-54<br>% | 55-64<br>% | 65-74<br>% | 75+<br>% |
|-----------------------------------------|--|---------------|------------|------------|------------|------------|------------|------------|----------|
| <b>ENGLAND</b>                          |  |               |            |            |            |            |            |            |          |
| <b>MEN</b>                              |  |               |            |            |            |            |            |            |          |
| 1994                                    |  | 74.5          | 32.4       | 61.2       | 82.0       | 88.3       | 89.9       | 87.4       | 79.4     |
| 1998                                    |  | 66.3          | 22.5       | 50.1       | 69.9       | 77.5       | 81.4       | 76.0       | 71.5     |
| 2003                                    |  | 70.1          | 27.8       | 60.3       | 77.3       | 81.6       | 80.5       | 68.8       | 63.4     |
| <b>WOMEN</b>                            |  |               |            |            |            |            |            |            |          |
| 1994                                    |  | 76.5          | 44.2       | 57.1       | 69.8       | 82.2       | 94.6       | 96.6       | 93.1     |
| 1998                                    |  | 67.4          | 27.1       | 43.8       | 58.8       | 73.6       | 87.9       | 90.6       | 89.2     |
| 2003                                    |  | 70.8          | 33.9       | 50.2       | 61.6       | 77.5       | 88.0       | 86.8       | 82.3     |
| <b>SCOTLAND</b>                         |  |               |            |            |            |            |            |            |          |
| <b>MEN</b>                              |  |               |            |            |            |            |            |            |          |
| 1995                                    |  | 69.8*         | 26.4       | 65.3       | 81.4       | 86.9       | 86.1       |            |          |
| 1998                                    |  | 62.0*         | 21.8       | 53.0       | 69.7       | 82.1       | 76.0       | 71.5       |          |
| 2003                                    |  | 63.3*         | 21.7       | 58.7       | 71.5       | 82.6       | 75.4       | 67.1       | 55.5     |
| <b>WOMEN</b>                            |  |               |            |            |            |            |            |            |          |
| 1995                                    |  | 67.8*         | 34.3       | 53.7       | 68.4       | 86.5       | 92.0       |            |          |
| 1998                                    |  | 59.6*         | 23.1       | 44.2       | 57.9       | 78.8       | 88.5       | 91.5       |          |
| 2003                                    |  | 62.9*         | 26.2       | 46.4       | 65.3       | 83.0       | 88.2       | 84.3       | 78.5     |
| <i>Unweighted base:</i>                 |  |               |            |            |            |            |            |            |          |
| <i>England, men,</i>                    |  |               |            |            |            |            |            |            |          |
| 1994                                    |  | 5,345         | 635        | 1,090      | 1,069      | 856        | 755        | 634        | 306      |
| 1998                                    |  | 5,001         | 423        | 912        | 967        | 964        | 724        | 621        | 390      |
| 2003                                    |  | 3,814         | 302        | 546        | 770        | 708        | 691        | 491        | 306      |
| <i>England, women</i>                   |  |               |            |            |            |            |            |            |          |
| 1994                                    |  | 5,817         | 588        | 1,097      | 1,104      | 967        | 765        | 786        | 510      |
| 1998                                    |  | 5,568         | 450        | 967        | 1,071      | 1,092      | 804        | 636        | 548      |
| 2003                                    |  | 4,460         | 342        | 600        | 903        | 813        | 823        | 545        | 434      |
| <i>Scotland, men</i>                    |  |               |            |            |            |            |            |            |          |
| 1995                                    |  | 2,831         | 342        | 676        | 671        | 584        | 558        |            |          |
| 1998                                    |  | 2,362         | 244        | 497        | 601        | 509        | 511        | 408        |          |
| 2003                                    |  | 1,426         | 123        | 211        | 380        | 345        | 367        | 281        | 178      |
| <i>Scotland, women</i>                  |  |               |            |            |            |            |            |            |          |
| 1995                                    |  | 3,300         | 338        | 811        | 804        | 673        | 674        |            |          |
| 1998                                    |  | 2,741         | 277        | 599        | 670        | 650        | 545        | 572        |          |
| 2003                                    |  | 1,696         | 129        | 251        | 455        | 435        | 426        | 294        | 223      |

**Notes:** From 2003 onwards Health Survey for England used weighted data to adjust for non-response. English data presented here are unweighted for comparison with earlier estimates. Scottish data are all weighted for non-response.

The Scottish Health Survey for 1995 only covered 16-64 year olds. The survey for 1998 only covered 16-74 year olds. For comparability, all of the Scottish all age estimates (marked with asterisks) are for 16-64 year olds only.

**Source:** Department of Health (2004) Health Survey for England 2003. London: The Stationery Office  
The Scottish Executive (2005) The Scottish Health Survey 2003. Edinburgh: Scottish Executive

*Figure 10.2 Percentage of adults with blood cholesterol levels of 5.0mmol/l and above, 2003, England*

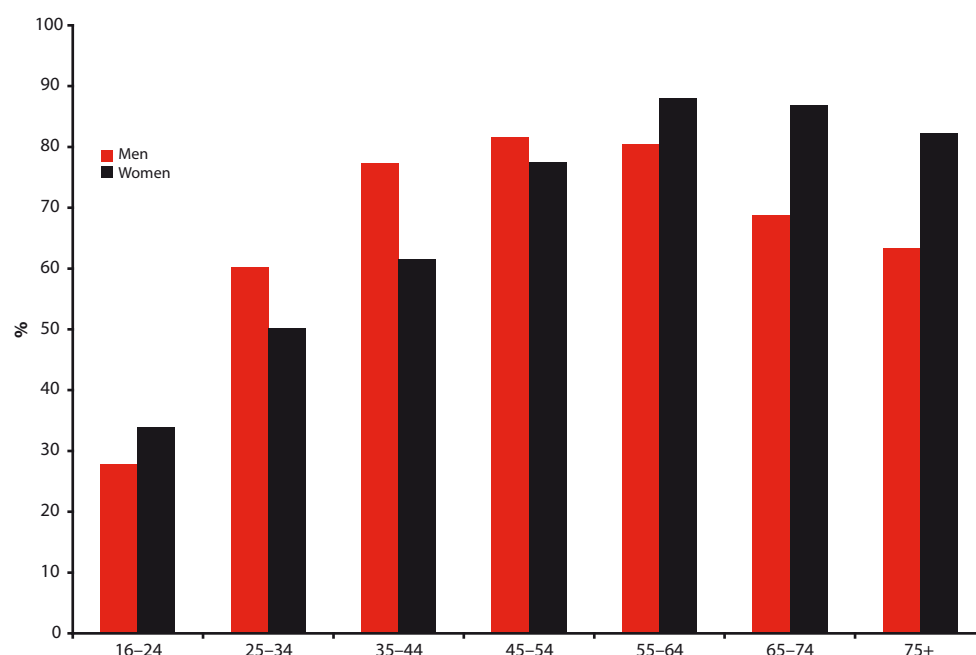


*Table 10.3 Low HDL cholesterol by sex and age, 2003, England and Scotland*

| $\leq 1.0\text{mmol/l}$ total HDL cholesterol |       | All ages | 16-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+ |
|-----------------------------------------------|-------|----------|-------|-------|-------|-------|-------|-------|-----|
|                                               |       | %        | %     | %     | %     | %     | %     | %     | %   |
| <b>ENGLAND</b>                                |       |          |       |       |       |       |       |       |     |
| MEN                                           |       | 6.3      | 8.5   | 5.2   | 5.9   | 5.4   | 6.9   | 7.5   | 4.6 |
| WOMEN                                         |       | 1.9      | 2.4   | 2.8   | 3.0   | 0.9   | 1.2   | 1.0   | 1.8 |
| <b>SCOTLAND</b>                               |       |          |       |       |       |       |       |       |     |
| MEN                                           |       | 7.7      | 10.6  | 7.1   | 8.4   | 5.7   | 7.4   | 8.5   | 6.2 |
| WOMEN                                         |       | 2.0      | 3.3   | 3.5   | 1.2   | 1.5   | 1.6   | 0.4   | 2.6 |
| <b>ENGLAND</b>                                |       |          |       |       |       |       |       |       |     |
| Unweighted base                               | Men   | 3,814    | 302   | 546   | 770   | 708   | 691   | 491   | 306 |
|                                               | Women | 4,460    | 342   | 600   | 903   | 813   | 823   | 545   | 434 |
| Weighted base                                 | Men   | 4,020    | 571   | 718   | 789   | 675   | 585   | 401   | 282 |
|                                               | Women | 4,249    | 572   | 717   | 794   | 674   | 603   | 455   | 433 |
| <b>SCOTLAND</b>                               |       |          |       |       |       |       |       |       |     |
| Unweighted base                               | Men   | 1,886    | 123   | 211   | 381   | 345   | 367   | 281   | 178 |
|                                               | Women | 2,213    | 129   | 251   | 455   | 435   | 426   | 294   | 223 |
| Weighted base                                 | Men   | 1,954    | 285   | 311   | 386   | 339   | 292   | 208   | 133 |
|                                               | Women | 2,150    | 274   | 336   | 411   | 348   | 302   | 244   | 235 |

Notes: Data are weighted for non response.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.  
The Scottish Executive (2004) Scottish Health Survey 2003. Scottish Executive: Edinburgh

**Table 10.4** *Total cholesterol levels and low HDL cholesterol levels by sex and Government Office Region, adults aged 16 and over, 2003, England*

|                               | North<br>East<br>% | North<br>West<br>% | Yorkshire<br>& the<br>Humber<br>% | East<br>Midlands<br>% | West<br>Midlands<br>% | East<br>England<br>% | London<br>% | South<br>East<br>% | South<br>West<br>% |
|-------------------------------|--------------------|--------------------|-----------------------------------|-----------------------|-----------------------|----------------------|-------------|--------------------|--------------------|
| <b>MEN</b>                    |                    |                    |                                   |                       |                       |                      |             |                    |                    |
| ≥ 5.0mmol/l total cholesterol | 70.5               | 62.3               | 64.8                              | 67.5                  | 64.9                  | 64.8                 | 60.1        | 63.7               | 63.5               |
| ≤ 1.0mmol/l HDL cholesterol   | 2.6                | 4.8                | 9.6                               | 6.5                   | 5.0                   | 4.6                  | 6.6         | 8.0                | 6.9                |
| <b>WOMEN</b>                  |                    |                    |                                   |                       |                       |                      |             |                    |                    |
| ≥ 5.0mmol/l total cholesterol | 69.2               | 64.4               | 63.2                              | 67.8                  | 69.3                  | 64.1                 | 63.6        | 64.5               | 66.4               |
| ≤ 1.0mmol/l HDL cholesterol   | 1.2                | 1.8                | 2.5                               | 2.0                   | 3.0                   | 1.1                  | 1.8         | 2.3                | 1.7                |
| <i>Men, unweighted base</i>   | 232                | 564                | 377                               | 365                   | 416                   | 420                  | 411         | 621                | 410                |
| <i>Women, unweighted base</i> | 277                | 630                | 450                               | 411                   | 491                   | 467                  | 489         | 766                | 480                |
| <i>Men, weighted base</i>     | 200                | 551                | 405                               | 352                   | 439                   | 453                  | 595         | 625                | 403                |
| <i>Women, weighted base</i>   | 220                | 568                | 433                               | 362                   | 452                   | 465                  | 628         | 696                | 427                |

Notes: Data are weighted for non-response, and estimates are age-standardised to account for differing age structures.

Source: Department of Health (2004) Health Survey for England 2003. London: The Stationery Office

**Table 10.5** *Total cholesterol by sex and socio-economic classification, 2003, England*

|                                   | NS-SEC of head of household  |              |                                             |                                     |                           |
|-----------------------------------|------------------------------|--------------|---------------------------------------------|-------------------------------------|---------------------------|
|                                   | Managerial &<br>professional | Intermediate | Small employers<br>& own account<br>workers | Lower<br>supervisory<br>& technical | Semi-routine<br>& routine |
| <i>Total cholesterol (mmol/l)</i> | %                            | %            | %                                           | %                                   | %                         |
| <b>MEN</b>                        |                              |              |                                             |                                     |                           |
| Mean                              | 5.4                          | 5.5          | 5.5                                         | 5.5                                 | 5.4                       |
| % 5.0 and above                   | 65.9                         | 64.9         | 66.8                                        | 65.3                                | 59.8                      |
| <b>WOMEN</b>                      |                              |              |                                             |                                     |                           |
| Mean                              | 5.5                          | 5.5          | 5.6                                         | 5.5                                 | 5.5                       |
| % 5.0 and above                   | 64.9                         | 67.2         | 69.2                                        | 63.6                                | 66.3                      |
| <i>Men, unweighted base</i>       | 1,645                        | 247          | 475                                         | 549                                 | 867                       |
| <i>Women, unweighted base</i>     | 1,790                        | 421          | 466                                         | 507                                 | 1,180                     |
| <i>Men, weighted base</i>         | 1,667                        | 283          | 478                                         | 553                                 | 991                       |
| <i>Women, weighted base</i>       | 1,627                        | 399          | 429                                         | 493                                 | 1,165                     |

Notes: Data are weighted for non response and age-standardised. For method of age-standardisation see source.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 10.6** *Low HDL cholesterol by sex and equivalised household income, 2003, England*

|                                | Equivalised household income quintile |     |     |     |        |
|--------------------------------|---------------------------------------|-----|-----|-----|--------|
|                                | Highest                               | 2nd | 3rd | 4th | Lowest |
| Total HDL cholesterol (mmol/l) | %                                     | %   | %   | %   | %      |
| <b>MEN</b>                     |                                       |     |     |     |        |
| Mean                           | 1.4                                   | 1.4 | 1.4 | 1.4 | 1.3    |
| % < 1.0                        | 4.0                                   | 6.2 | 5.9 | 6.8 | 9.2    |
| <b>WOMEN</b>                   |                                       |     |     |     |        |
| Mean                           | 1.7                                   | 1.6 | 1.6 | 1.6 | 1.5    |
| % < 1.0                        | 0.5                                   | 1.4 | 2.3 | 1.3 | 3.9    |
| Men, unweighted base           | 824                                   | 815 | 701 | 508 | 502    |
| Women, unweighted base         | 742                                   | 858 | 871 | 704 | 703    |
| Men, weighted base             | 835                                   | 846 | 708 | 552 | 564    |
| Women, unweighted base         | 672                                   | 809 | 806 | 673 | 699    |

Notes: Data are weighted for non response and age-standardised. For method of age-standardisation see source.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 10.7** *Total cholesterol and low HDL cholesterol by sex and ethnic group, adults aged 16 and over, 2004, England*

|                               | General population (2003) | Black Caribbean | Black African | Indian | Pakistani | Bangladeshi | Chinese | Irish |
|-------------------------------|---------------------------|-----------------|---------------|--------|-----------|-------------|---------|-------|
|                               | %                         | %               | %             | %      | %         | %           | %       | %     |
| <b>MEN</b>                    |                           |                 |               |        |           |             |         |       |
| ≥ 5.0mmol/l total cholesterol | 66                        | 51              | 55            | 60     | 55        | 60          | 60      | 67    |
| ≤ 1.0mmol/l HDL cholesterol   | 6                         | 4               | 2             | 11     | 20        | 20          | 8       | 5     |
| <b>WOMEN</b>                  |                           |                 |               |        |           |             |         |       |
| ≥ 5.0mmol/l total cholesterol | 67                        | 56              | 44            | 53     | 53        | 55          | 52      | 67    |
| ≤ 1.0mmol/l HDL cholesterol   | 2                         | 1               | 3             | 4      | 6         | 8           | 1       | 2     |
| Men, unweighted base          | 3,814                     | 137             | 103           | 234    | 137       | 87          | 101     | 244   |
| Women, unweighted base        | 4,460                     | 195             | 118           | 256    | 143       | 98          | 108     | 300   |
| Men, weighted base            | 4,020                     | 139             | 109           | 267    | 123       | 44          | 39      | 510   |
| Women, weighted base          | 4,249                     | 199             | 142           | 304    | 148       | 64          | 48      | 675   |

Notes: Data are weighted for non-response and age-standardised. For method of age-standardisation see source.

Source: Department of Health (2006) Health Survey for England 2004. The Health of Minority Ethnic Groups. London: The Stationery Office

**Table 10.8** *Blood cholesterol levels by sex, adults aged 35 to 64, latest available data, MONICA Project populations*

| MONICA population            | MONICA population code | Year of survey | Total cholesterol (mmol/l) |        |             |              |        |             |
|------------------------------|------------------------|----------------|----------------------------|--------|-------------|--------------|--------|-------------|
|                              |                        |                | MEN                        |        |             | WOMEN        |        |             |
|                              |                        |                | 5.2 - <7.8 %               | ≥7.8 % | Mean mmol/l | 5.2 - <7.8 % | ≥7.8 % | Mean mmol/l |
| Australia-Newcastle          | AUS-NEW                | 1994           | 68                         | 3      | 5.8         | 61           | 3      | 5.6         |
| Australia-Perth              | AUS-PER                | 1994           | 65                         | 2      | 5.5         | 5            | 1      | 5.4         |
| Belgium-Charleroi            | BEL-CHA                | 1990/93        | 68                         | 9      | 6.2         | 67           | 10     | 6.1         |
| Belgium-Ghent                | BEL-GHE                | 1990/92        | 70                         | 6      | 6.0         | 66           | 6      | 6.0         |
| Canada-Halifax County        | CAN-HAL                | 1995           | 68                         | 1      | 5.6         | 65           | 5      | 5.8         |
| China-Beijing                | CHN-BEI                | 1993           | 20                         | 0      | 4.5         | 19           | 0      | 4.5         |
| Czech Republic               | CZE-CZE                | 1992           | 69                         | 11     | 6.2         | 67           | 11     | 6.1         |
| Denmark-Glostrup             | DEN-GLO                | 1991/92        | 72                         | 5      | 6.0         | 65           | 5      | 5.8         |
| Finland-Kuopio Province      | FIN-KUO                | 1992           | 70                         | 7      | 6.0         | 66           | 5      | 5.8         |
| Finland-North Karelia        | FIN-NKA                | 1992           | 74                         | 7      | 6.0         | 65           | 4      | 5.7         |
| Finland-Turku/Loimaa         | FIN-TUL                | 1992           | 71                         | 4      | 5.9         | 62           | 5      | 5.7         |
| France-Lille                 | FRA-LIL                | 1995/96        | 72                         | 4      | 5.8         | 68           | 5      | 5.8         |
| France-Strasbourg            | FRA-STR                | 1995/97        | 76                         | 5      | 6.0         | 70           | 5      | 5.9         |
| France-Toulouse              | FRA-TOU                | 1994/96        | 70                         | 4      | 5.8         | 66           | 2      | 5.6         |
| Germany-Augsburg (rural)     | GER-AUR                | 1994/95        | 72                         | 6      | 6.1         | 69           | 5      | 5.9         |
| Germany-Augsburg (urban)     | GER-AUU                | 1994/95        | 71                         | 10     | 6.2         | 68           | 6      | 5.9         |
| Germany-Bremen               | GER-BRE                | 1991/92        | 74                         | 9      | 6.2         | 76           | 8      | 6.2         |
| Germany-East Germany         | GER-EGE                | 1993/94        | 69                         | 4      | 5.8         | 64           | 5      | 5.8         |
| Iceland                      | ICE-ICE                | 1993/94        | 70                         | 10     | 6.2         | 67           | 6      | 6.0         |
| Italy-Area Brianza           | ITA-BRI                | 1993/94        | 69                         | 6      | 5.9         | 70           | 5      | 5.9         |
| Italy-Friuli                 | ITA-FRI                | 1994           | 65                         | 5      | 5.9         | 60           | 3      | 5.7         |
| Lithuania-Kaunas             | LTU-KAU                | 1992/93        | 68                         | 7      | 6.0         | 62           | 14     | 6.2         |
| New Zealand                  | NEZ-AUC                | 1993/94        | 67                         | 3      | 5.7         | 58           | 4      | 5.6         |
| Poland-Tarnobrzeg Voivodship | POL-TAR                | 1992/93        | 63                         | 2      | 5.6         | 59           | 1      | 5.5         |
| Poland-Warsaw                | POL-WAR                | 1993           | 67                         | 3      | 5.7         | 62           | 4      | 5.6         |
| Russia-Moscow (control)      | RUS-MOC                | 1992/95        | 47                         | 2      | 5.3         | 53           | 5      | 5.6         |
| Russia-Novosibirsk (control) | RUS-NOC                | 1995           | 40                         | 1      | 5.0         | 49           | 2      | 5.3         |
| Spain-Catalonia              | SPA-CAT                | 1994/96        | 63                         | 3      | 5.6         | 61           | 2      | 5.5         |
| Sweden-Gothenburg            | SWE-GOT                | 1994/96        | 52                         | 5      | 5.6         | 48           | 3      | 5.4         |
| Sweden-Northern Sweden       | SWE-NSW                | 1994           | 71                         | 11     | 6.3         | 66           | 11     | 6.1         |
| Switzerland-Ticino           | SWI-TIC                | 1992/93        | 74                         | 15     | 6.5         | 70           | 10     | 6.2         |
| Switzerland-Vaud/Fribourg    | SWI-VAF                | 1992/93        | 75                         | 10     | 6.3         | 69           | 8      | 6.1         |
| United Kingdom-Belfast       | UNK-BEL                | 1991/92        | 71                         | 6      | 5.9         | 63           | 8      | 5.9         |
| United Kingdom-Glasgow       | UNK-GLA                | 1995           | 72                         | 6      | 6.1         | 69           | 8      | 6.1         |
| United States-Stanford       | USA-STA                | 1989/90        | 53                         | 2      | 5.4         | 48           | 2      | 5.3         |
| Yugoslavia-Novı Sad          | YUG-NOS                | 1994/95        | 69                         | 13     | 6.4         | 70           | 9      | 6.2         |

Notes: Age-standardised levels; consult WHO MONICA Project for details of measurement and age-standardisation.

Source: WHO MONICA Project database. <http://www.ktl.fi/publications/monica>

**Figure 10.8** *Percentage of adults aged 35 to 64 with blood cholesterol levels ≥7.8 mmol/l, latest available data, MONICA Project populations*

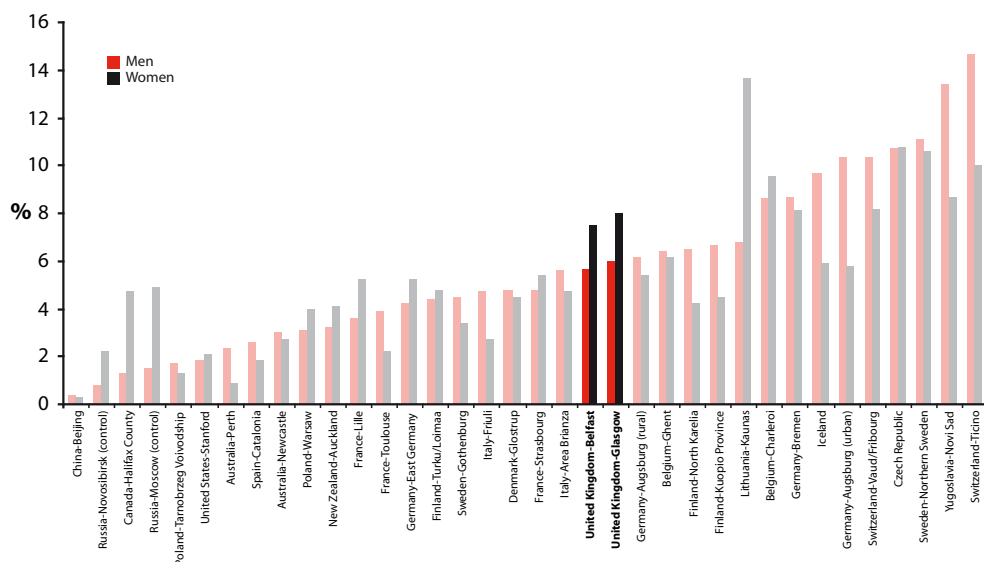


**Table 10.9 Mean total cholesterol levels by sex, adults aged 15 and over, 2005, the World**

| MEN WOMEN                       |     |     | MEN WOMEN                  |     |     | MEN WOMEN                  |     |     |
|---------------------------------|-----|-----|----------------------------|-----|-----|----------------------------|-----|-----|
| Mean total cholesterol (mmol/l) |     |     |                            |     |     |                            |     |     |
| Afghanistan                     | 4.6 | 4.6 | Gabon                      | 4.6 | 4.6 | Oman                       | 5.0 | 5.0 |
| Albania                         | 5.2 | 5.1 | Gambia                     | 4.1 | 4.6 | Pakistan                   | 4.7 | 4.5 |
| Algeria                         | 4.6 | 4.7 | Georgia                    | 5.0 | 5.0 | Palau                      | 5.4 | 5.4 |
| Andorra                         | 5.4 | 5.4 | Germany                    | 5.7 | 5.7 | Panama                     | 5.2 | 5.2 |
| Angola                          | 4.3 | 4.3 | Ghana                      | 4.3 | 4.3 | Papua New Guinea           | 5.5 | 5.3 |
| Antigua and Barbuda             | 5.4 | 5.4 | Greece                     | 4.8 | 4.7 | Paraguay                   | 5.1 | 5.1 |
| Argentina                       | 5.4 | 5.3 | Grenada                    | 5.3 | 5.3 | Peru                       | 5.1 | 5.1 |
| Armenia                         | 5.1 | 5.1 | Guatemala                  | 4.6 | 4.9 | Philippines                | 4.4 | 4.4 |
| Australia                       | 5.5 | 5.5 | Guinea                     | 4.3 | 4.3 | Poland                     | 5.2 | 5.1 |
| Austria                         | 5.4 | 5.5 | Guinea-Bissau              | 4.2 | 4.2 | Portugal                   | 5.2 | 5.1 |
| Azerbaijan                      | 5.0 | 5.0 | Guyana                     | 5.1 | 5.1 | Qatar                      | 5.3 | 5.3 |
| Bahamas                         | 5.6 | 5.6 | Haiti                      | 4.9 | 4.9 | Rep. of Korea              | 4.8 | 4.9 |
| Bahrain                         | 5.1 | 5.1 | Honduras                   | 5.0 | 5.0 | Rep. of Moldova            | 5.0 | 5.0 |
| Bangladesh                      | 4.1 | 4.3 | Hungary                    | 5.4 | 5.1 | Romania                    | 5.1 | 5.0 |
| Barbados                        | 5.4 | 5.4 | Iceland                    | 5.6 | 5.4 | Russian Fed.               | 4.9 | 4.9 |
| Belarus                         | 6.0 | 5.3 | India                      | 5.1 | 5.2 | Rwanda                     | 4.2 | 4.2 |
| Belgium                         | 5.5 | 5.5 | Indonesia                  | 4.5 | 4.5 | Saint Kitts and Nevis      | 5.4 | 5.4 |
| Belize                          | 5.2 | 5.2 | Iran (Islamic Rep. of)     | 4.6 | 4.8 | Saint Lucia                | 5.2 | 5.2 |
| Benin                           | 4.2 | 4.2 | Iraq                       | 4.7 | 4.7 | Saint Vincent & Grenadines | 5.2 | 5.2 |
| Bhutan                          | 4.7 | 4.7 | Ireland                    | 5.5 | 5.4 | Samoa                      | 5.4 | 5.4 |
| Bolivia                         | 5.0 | 5.0 | Israel                     | 5.6 | 6.0 | San Marino                 | 5.3 | 5.3 |
| Bosnia and Herzegovina          | 5.1 | 5.1 | Italy                      | 5.2 | 5.1 | Sao Tome and Principe      | 4.3 | 4.3 |
| Botswana                        | 4.6 | 4.6 | Jamaica                    | 5.1 | 5.1 | Saudi Arabia               | 4.5 | 4.6 |
| Brazil                          | 4.9 | 5.2 | Japan                      | 5.2 | 5.1 | Senegal                    | 4.3 | 4.3 |
| Brunei Darussalam               | 5.3 | 5.3 | Jordan                     | 5.3 | 5.5 | Serbia and Montenegro      | 6.2 | 5.9 |
| Bulgaria                        | 5.7 | 5.9 | Kazakhstan                 | 5.2 | 5.2 | Seychelles                 | 5.7 | 5.8 |
| Burkina Faso                    | 4.2 | 4.2 | Kenya                      | 4.3 | 4.3 | Sierra Leone               | 4.2 | 4.2 |
| Burundi                         | 4.2 | 4.2 | Kiribati                   | 5.1 | 5.4 | Singapore                  | 5.3 | 5.2 |
| Cambodia                        | 5.0 | 5.0 | Kuwait                     | 5.1 | 5.1 | Slovakia                   | 5.0 | 5.1 |
| Cameroon                        | 3.1 | 3.4 | Kyrgyzstan                 | 5.1 | 5.0 | Slovenia                   | 5.2 | 5.2 |
| Canada                          | 5.2 | 5.0 | Lao People's Dem. Rep.     | 5.0 | 5.0 | Solomon Islands            | 4.4 | 4.6 |
| Cape Verde                      | 4.5 | 4.5 | Latvia                     | 5.3 | 5.3 | Somalia                    | 4.2 | 4.2 |
| Central African Rep.            | 4.3 | 4.3 | Lebanon                    | 4.4 | 4.6 | South Africa               | 4.3 | 4.3 |
| Chad                            | 4.2 | 4.2 | Lesotho                    | 4.3 | 4.3 | Spain                      | 5.1 | 5.1 |
| Chile                           | 4.8 | 4.9 | Liberia                    | 4.4 | 4.4 | Sri Lanka                  | 5.5 | 5.4 |
| China                           | 5.5 | 5.4 | Libyan Arab Jamahiriya     | 5.4 | 6.0 | Sudan                      | 4.3 | 4.3 |
| Colombia                        | 6.3 | 5.2 | Lithuania                  | 5.3 | 5.4 | Suriname                   | 5.1 | 5.1 |
| Comoros                         | 4.3 | 4.3 | Luxembourg                 | 6.0 | 5.9 | Swaziland                  | 4.5 | 4.5 |
| Congo                           | 4.3 | 4.3 | Madagascar                 | 4.3 | 4.3 | Sweden                     | 5.2 | 5.2 |
| Cook Islands                    | 5.6 | 5.4 | Malawi                     | 4.2 | 4.2 | Switzerland                | 5.1 | 5.2 |
| Costa Rica                      | 5.3 | 5.4 | Malaysia                   | 5.1 | 5.1 | Syrian Arab Rep.           | 4.9 | 4.9 |
| Cote d'Ivoire                   | 4.4 | 4.4 | Maldives                   | 4.9 | 4.9 | Tajikistan                 | 4.9 | 4.9 |
| Croatia                         | 5.5 | 5.3 | Mali                       | 4.2 | 4.2 | Thailand                   | 5.1 | 5.3 |
| Cuba                            | 5.1 | 5.1 | Malta                      | 5.7 | 5.9 | Togo                       | 4.3 | 4.3 |
| Cyprus                          | 6.0 | 5.8 | Marshall Islands           | 5.1 | 5.1 | Tonga                      | 5.3 | 5.1 |
| Czech Rep.                      | 5.4 | 5.5 | Mauritania                 | 4.0 | 4.2 | Trinidad and Tobago        | 6.0 | 5.9 |
| Dem. People's Rep. of Korea     | 5.0 | 5.0 | Mauritius                  | 5.1 | 5.1 | Tunisia                    | 4.1 | 4.4 |
| Dem. Rep. of the Congo          | 4.2 | 4.2 | Mexico                     | 4.8 | 4.8 | Turkey                     | 4.5 | 4.6 |
| Dem. Rep. of Timor-Leste        | 4.7 | 4.7 | Micronesia, Fed. States of | 4.6 | 4.6 | Turkmenistan               | 5.2 | 5.2 |
| Denmark                         | 5.4 | 5.2 | Monaco                     | 5.3 | 5.3 | Tuvalu                     | 5.4 | 5.4 |
| Djibouti                        | 4.3 | 4.3 | Mongolia                   | 5.0 | 5.0 | Uganda                     | 4.3 | 4.3 |
| Dominica                        | 5.2 | 5.2 | Morocco                    | 4.7 | 4.7 | Ukraine                    | 5.1 | 5.2 |
| Dominican Rep.                  | 4.8 | 5.0 | Mozambique                 | 4.2 | 4.2 | United Arab Emirates       | 5.8 | 4.8 |
| Ecuador                         | 5.1 | 5.1 | Myanmar                    | 4.9 | 4.9 | United Kingdom             | 5.1 | 5.1 |
| Egypt                           | 4.7 | 4.9 | Namibia                    | 4.5 | 4.5 | United Rep. of Tanzania    | 4.7 | 5.1 |
| El Salvador                     | 5.1 | 5.1 | Nauru                      | 5.4 | 5.5 | United States of America   | 5.1 | 5.1 |
| Equatorial Guinea               | 4.5 | 4.5 | Nepal                      | 4.7 | 4.7 | Uruguay                    | 6.1 | 6.0 |
| Eritrea                         | 4.2 | 4.2 | Netherlands                | 4.8 | 4.9 | Uzbekistan                 | 5.0 | 5.0 |
| Estonia                         | 5.0 | 5.2 | New Zealand                | 5.6 | 5.4 | Vanuatu                    | 5.9 | 5.1 |
| Ethiopia                        | 4.5 | 4.2 | Nicaragua                  | 5.0 | 5.0 | Venezuela                  | 4.6 | 4.9 |
| Fiji                            | 5.3 | 5.0 | Niger                      | 4.2 | 4.2 | Vietnam                    | 5.4 | 5.2 |
| Finland                         | 5.3 | 5.2 | Nigeria                    | 3.5 | 3.6 | Yemen                      | 4.6 | 4.6 |
| France                          | 5.4 | 5.3 | Niue                       | 5.5 | 5.5 | Zambia                     | 4.2 | 4.2 |
| FYR Macedonia                   | 5.1 | 5.1 | Norway                     | 5.6 | 6.0 | Zimbabwe                   | 4.4 | 4.4 |

Notes: Estimates are based on national or sub-national surveys, and are adjusted for definitions, and for non-standard age groups. Non-representative data is adjusted to national populations, and trend data is used to adjust to the standard reporting year. The estimates are then age-standardised to the WHO standard population. For details on adjustments, see source.

Source: WHO (2006). WHO global infobase online.

[http://www.who.int/ncd\\_surveillance/infobase/web/InfoBasePolicyMaker/CountryProfiles/QCStart.aspx](http://www.who.int/ncd_surveillance/infobase/web/InfoBasePolicyMaker/CountryProfiles/QCStart.aspx)

Figure 10.9a Mean total cholesterol levels, men aged 15 and over, 2005, Europe

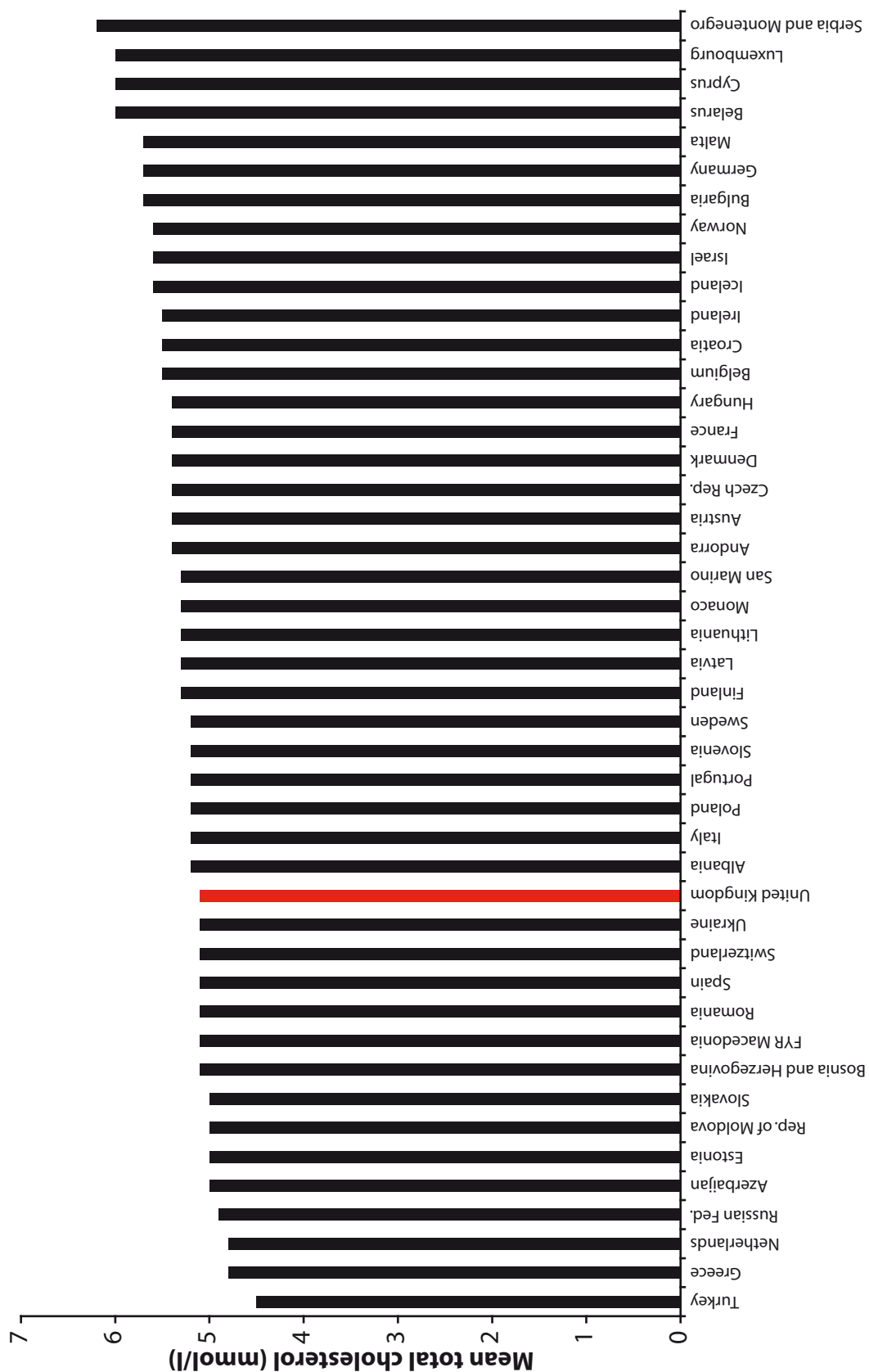
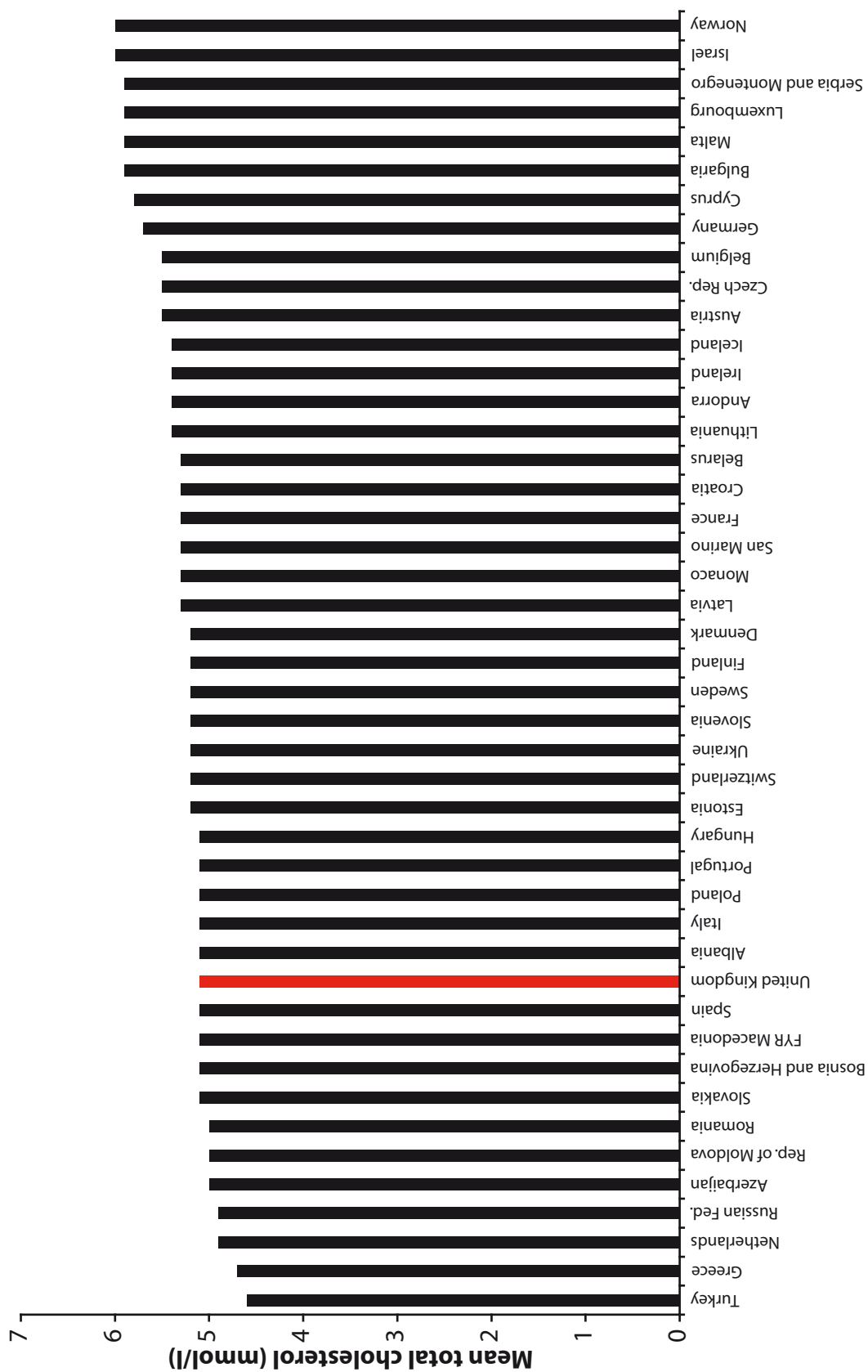


Figure 10.9b Mean total cholesterol levels, women aged 15 and over, 2005, Europe



# 11. Overweight and Obesity

Overweight and obesity increase the risk of CHD. As well as being an independent risk factor, obesity is also a major risk factor for high blood pressure, raised blood cholesterol, diabetes and impaired glucose tolerance<sup>1</sup>.

The adverse effects of excess weight are more pronounced when fat is concentrated in the abdomen. This is known as central or abdominal obesity and is assessed using the waist to hip ratio<sup>2</sup>.

The World Health Organization's World Health Report 2002 estimated that over 7% of all disease burden in developed countries was caused by raised body mass index (BMI), and that around a third of CHD and ischaemic stroke and almost 60% of hypertensive disease in developed countries was due to overweight<sup>3</sup>.

More recently the INTERHEART case-control study estimated that 63% of heart attacks in Western Europe and 28% of heart attacks in Central and Eastern Europe were due to abdominal obesity (a high waist to hip ratio), and those with abdominal obesity were at over twice the risk of a heart attack compared to those without<sup>4</sup>. This study also found that abdominal obesity was a much more significant risk factor for heart attack than BMI.

## *Public health targets*

In 2004 in England an obesity target for children was introduced to halt the year-on-year rise in obesity in children under 11 by 2010. A more general statement has been made that increasing rates of obesity in the population should be addressed (Table 11.1). There are currently no targets for overweight and obesity in Scotland, Wales or Northern Ireland.

## *Overall prevalence*

In England around 44% of men and 35% of women were overweight (a BMI of 25-30 kg/m<sup>2</sup>), and an additional 23% of men and 24% of women were obese (a BMI of more than 30 kg/m<sup>2</sup>) (Table 11.2). Central obesity was also common among adults in England. Data from 2003 show that around 33% of men and 30% of women had central obesity (Table 11.3).

## *Sex and age differences*

Overweight and obesity increased with age, peaking in those aged 55 to 64. About 31% of men and 38% of women aged 16 to 24 were overweight or obese compared to 78% of men and 70% of women aged 55 to 64 (Table 11.2 and Figure 11.2). The prevalence of central obesity also increased with age, especially in men. About 4% of men and 11% of women aged 16 to 24 had central obesity but 57% of men and 45% of women aged 65 to 74 had central obesity (Table 11.3).

## *Overweight and obesity in children*

The classification of overweight and obesity in children and adolescents is more problematic than

in adults. Constant changes in body composition during growth mean that the relationship between BMI and adiposity during childhood is age-dependent, and further complicated by race and gender. There is no clear agreement on the best way to define overweight and obesity in children. The International Obesity Taskforce (IOTF) has developed a new international classification based on age and sex-specific BMI cut-off points. UK data is sometimes reported using the National BMI percentile classification where children are classified as overweight or obese using the 85th and 95th percentiles as cut points. These two methods of classification result in different estimates of childhood overweight and obesity<sup>5</sup>.

The IOTF classification has been used in the 2004 Health Survey for England which found a third of boys (33%) and more than a third of girls (35%) in England aged 2 to 15 years were either overweight or obese (Table 11.4)<sup>6</sup>.

## *Temporal trends*

Overweight and obesity are increasing rapidly. In England, the percentage of adults aged 16 to 64 who are obese has increased by over 50% in the last decade (Table 11.5 and Figure 11.5). This increase in obesity was particularly marked in men among whom rates have tripled since the mid-1980s, with men now as likely to be obese as women.

The high levels of overweight and obesity among children are likely to exacerbate the trend towards overweight and obesity in the adult population, since compared to thin children, obese children have a high risk of becoming overweight adults<sup>7</sup>. Between 1995 and 2004 the prevalence of obesity almost doubled among English boys (from 11% to 19%) and increased by half in girls (from 12% to 18%) (Table 11.6 and Figure 11.6).

Trend data from the 2003 Health Survey for England, and mid-population estimates for 2010 were used to predict the numbers and proportions of overweight and obese adults and children in 2010.

For men, the prediction was an increase in the proportion of those obese from 22% in 2003 to 33% in 2010. For women the predicted increase was from 23% in 2003 to 28% in 2010. These increases were largely attributable to the change in men and women aged 35 to 54 years (Table 11.7 and Figure 11.7).

For boys aged 2 to 15 years, the predicted increase in obesity was from 17% in 2003 to 19% in 2010, and for girls aged 2 to 15 years, the predicted increase was from 16% in 2003 to 22% in 2010 (Table 11.8).

## *Regional differences*

In England in 2003, about two thirds of men were overweight or obese with some variation by Government Region. The highest prevalence was found in the East Midlands (69%) and the lowest in London (58%). For women, the prevalence of overweight and obesity was lower and there was slightly more regional variation. The highest prevalence was found in the West Midlands (61%) and the lowest in London (48%) (Table 11.9).

## *Socio-economic differences*

Obesity is more common in adults employed in manual occupations, particularly in women. For example, in 2003, 33% of women working in semi routine and routine occupations had a BMI of more than 30 kg/m<sup>2</sup> compared to 21% of those employed in a managerial and professional role. (Table 11.10).

In both men and women, the prevalence of central obesity was highest in semi-routine and routine groups and lowest in managerial and professional groups. However, as in general obesity, the social class patterning of central obesity was most evident in women where the prevalence of central obesity gradually increased from 24% in managerial and professional occupations to 36% in semi-routine and routine occupations (Table 11.11).

## *Ethnic differences*

Levels of general and abdominal obesity vary with ethnicity in both men and women in England. In 2004, levels of obesity were much lower in Black African, Indian, Pakistani, and, most markedly, Bangladeshi and Chinese men, who were around four times less likely to be obese compared to men in the general population (Table 11.12 and Figure 11.12). Black Caribbean and Irish men had similar levels of obesity to the general population. Despite low levels of general obesity, Pakistani, Indian and Bangladeshi men had similar levels of raised waist to hip ratio compared to the general population. Black Caribbean, Black African and Chinese men were less likely to have a raised waist to hip ratio (Table 11.13).

Among women, obesity prevalence was high for Black Caribbean, Black African and Pakistani women and low for Chinese women (Table 11.12 and Figure 11.12). Again the pattern was different for levels of central obesity. Black Caribbean, Pakistani, and Irish women all had levels of central obesity above that of the general female population, while Bangladeshi women were much more likely to have a raised waist to hip ratio as women in the general population (Table 11.13).

## *International differences*

Data from the WHO SuRF Report 2 show that the prevalence of overweight and obesity in the UK is among the highest in Europe. Worldwide prevalence of overweight and obesity in the UK is in the highest quintile for men and the second highest for women (Table 11.14 and Figures 11.14a and 11.14b).

In 2006, the International Obesity TaskForce collated data on overweight and obesity in children worldwide. Caution should be used in interpreting these data as the studies used different age groups and different definitions of overweight and obesity. For boys, the countries with overweight (including obesity) levels of 30% or more were Canada (33%), Mexico (32.3%), Kuwait (30%), Malta (32.7%), Spain (31%) and New Zealand (30%). For girls the countries were Mexico (31.1%), Bahrain (38.5%), Kuwait (31.8%), Malta (38.5%), Portugal (34.3%) and New Zealand (30%). Ethiopia, Mali, Senegal and Nepal had very low levels of under 1% for both boys and girls (Table 11.15).

1. World Health Organization (2000) *Obesity – preventing and managing the global epidemic. Report of a WHO Consultation on Obesity*. World Health Organization: Geneva.
2. Central obesity is commonly defined as a waist-hip ratio of 0.95 and over in men and 0.85 and over in women.
3. World Health Organization (2002) *The World Health Report 2002. Reducing Risks, Promoting Healthy Life*. World Health Organization: Geneva.
4. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, McQueen M, Budaj A, Pais P, Varigo J, Lisheng A, on behalf of the INTERHEART Study Investigators (2004) Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART Study): case-control study. *The Lancet*; 364: 937-952.
5. For details of the International classification system see Department of Health (2003) *Health Survey for England 2002. The Stationery Office: London*. Because of differences in definition and measurement, direct comparison of adult (Table 11.2) and childhood (Table 11.6) tables in this chapter is inappropriate.
6. This finding should be viewed with caution since it has been suggested that the International classification may exaggerate sex differences by under-estimating prevalence for boys. Overweight and obesity estimates derived using the alternative National BMI percentiles classification showed no marked sex differences.
7. Serdula M, Ivery D, Coates R, Freedman D, Williamson D and Byers T (1993) Do obese children become obese adults? A review of the literature. *Prev Med* 22:167-177.

**Table 11.1** *Obesity targets for the United Kingdom*

|                            |                                                                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>England<sup>1</sup></b> |                                                                                                                                                              |
| Children                   | To halt the year-on-year rise in obesity among children under 11 by 2010 in the context of a broader strategy to tackle obesity in the population as a whole |
| <b>Wales</b>               | No target set                                                                                                                                                |
| <b>Scotland</b>            | No target set                                                                                                                                                |
| <b>Northern Ireland</b>    | No target set                                                                                                                                                |

1. Department of Health (2004) National Standards, Local Action: Health and Social Care Standards and Planning Framework 2005/06 and 2007/08. DH: London. PSA Target 3. [www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAmpGBrowsableDocument/f/en?CONTENT\\_ID=4096173&chk=V8WLUg](http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAmpGBrowsableDocument/f/en?CONTENT_ID=4096173&chk=V8WLUg)

**Table 11.2** *Body mass index by sex and age, 2004, England*

| ENGLAND 2004               | All ages  | 16-24     | 25-34     | 35-44     | 45-54     | 55-64     | 65-74     | 75+       |
|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                            | %         | %         | %         | %         | %         | %         | %         | %         |
| <b>MEN</b>                 |           |           |           |           |           |           |           |           |
| BMI (kg/m <sup>2</sup> )   |           |           |           |           |           |           |           |           |
| 20 or under                | 5         | 20        | 4         | 2         | 1         | 1         | 2         | 3         |
| Over 20-25                 | 29        | 49        | 37        | 22        | 22        | 22        | 22        | 24        |
| Over 25-30                 | 44        | 23        | 41        | 50        | 48        | 48        | 48        | 54        |
| Over 30-40                 | 22        | 7         | 18        | 25        | 28        | 28        | 27        | 19        |
| Over 40                    | 1         | 1         | 0         | 0         | 2         | 2         | 1         | 0         |
| <i>All over 30 (obese)</i> | <b>23</b> | <b>8</b>  | <b>18</b> | <b>25</b> | <b>30</b> | <b>30</b> | <b>28</b> | <b>19</b> |
| Weighted base              | 39,244    | 5,920     | 6,806     | 8,110     | 6,584     | 5,651     | 3,912     | 2,260     |
| Unweighted base            | 2,444     | 255       | 388       | 478       | 390       | 424       | 319       | 190       |
| <b>WOMEN</b>               |           |           |           |           |           |           |           |           |
| BMI (kg/m <sup>2</sup> )   |           |           |           |           |           |           |           |           |
| 20 or under                | 6         | 17        | 9         | 6         | 4         | 2         | 3         | 4         |
| Over 20-25                 | 36        | 46        | 43        | 41        | 34        | 29        | 28        | 30        |
| Over 25-30                 | 35        | 25        | 31        | 30        | 36        | 37        | 40        | 46        |
| Over 30-40                 | 21        | 11        | 16        | 21        | 23        | 30        | 24        | 20        |
| Over 40                    | 3         | 2         | 2         | 3         | 3         | 3         | 4         | 0         |
| <i>All over 30 (obese)</i> | <b>24</b> | <b>12</b> | <b>18</b> | <b>24</b> | <b>26</b> | <b>32</b> | <b>28</b> | <b>20</b> |
| Weighted base              | 39,803    | 5,345     | 6,513     | 7,984     | 6,493     | 6,023     | 4,172     | 3,273     |
| Unweighted base            | 3,135     | 294       | 453       | 649       | 527       | 538       | 393       | 281       |

Notes: Adults aged 16 and above with a valid height and weight measurement.

Data are weighted for non-response.

Source: Department of Health (2005) Health Survey for England 2004. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>

**Figure 11.2** *Prevalence of overweight and obesity by sex and age, 2004, England*

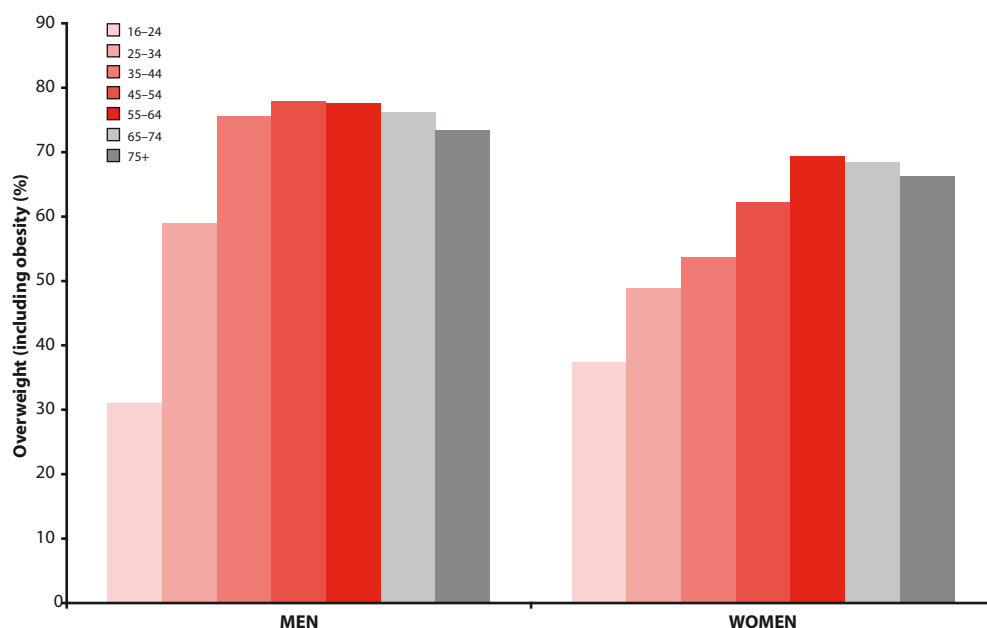


**Table 11.3** *Prevalence of a raised waist to hip ratio by sex and age, 2003, England*

|              | All ages | 16-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+ |
|--------------|----------|-------|-------|-------|-------|-------|-------|-----|
|              | %        | %     | %     | %     | %     | %     | %     | %   |
| <b>MEN</b>   | 33       | 4     | 14    | 32    | 41    | 54    | 57    | 51  |
| Base         | 5,397    | 771   | 969   | 1,074 | 891   | 779   | 551   | 363 |
| <b>WOMEN</b> | 30       | 11    | 18    | 26    | 28    | 42    | 45    | 54  |
| Base         | 5,554    | 752   | 891   | 1,044 | 895   | 809   | 606   | 556 |

Notes: Raised waist to hip ratio for men is defined as 0.95 and over and for women is 0.85 and over.

Source: Department of Health (2004) Health Survey for England 2003.

See [www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en](http://www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en)

**Table 11.4** *Prevalence of overweight and obesity in children by sex and age, 2004, England*

|                                   | AGE (YEARS) |           |           |
|-----------------------------------|-------------|-----------|-----------|
|                                   | 2-15        | 2-10      | 11-15     |
|                                   | %           | %         | %         |
| <b>BOYS</b>                       |             |           |           |
| Overweight                        | 14          | 15        | 13        |
| Obese                             | 19          | 16        | 24        |
| <b>Total overweight and obese</b> | <b>33</b>   | <b>31</b> | <b>37</b> |
| Base                              | 8,833       | 5,368     | 3,466     |
| <b>GIRLS</b>                      |             |           |           |
| Overweight                        | 17          | 15        | 19        |
| Obese                             | 19          | 13        | 27        |
| <b>Total overweight and obese</b> | <b>35</b>   | <b>28</b> | <b>46</b> |
| Base                              | 8,228       | 4,901     | 3,328     |

Notes: Children were defined as overweight or obese using the International classification age and sex-specific BMI percentile cut-points. See source for details.

Source: Department of Health (2005) Health Survey for England 2004. The Stationery Office: London.

**Table 11.5 Prevalence of overweight and obesity by sex, adults aged 16 to 64, 1986/87 to 2004, England**

| Body mass index (kg/m <sup>2</sup> ) | 1986/87 | 1991/92 | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  |
|--------------------------------------|---------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                      | %       | %       | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     |
| <b>MEN</b>                           |         |         |       |       |       |       |       |       |       |       |       |       |       |       |
| 20 or less                           | 6       | 6       | 5     | 5     | 4     | 4     | 4     | 4     | 5     | 5     | 4     | 5     | 4     | 5     |
| Over 20-25                           | 49      | 41      | 38    | 37    | 36    | 35    | 34    | 34    | 33    | 30    | 28    | 30    | 29    | 29    |
| Over 25-30                           | 38      | 40      | 44    | 44    | 44    | 45    | 45    | 46    | 44    | 45    | 47    | 43    | 44    | 44    |
| More than 30                         | 7       | 13      | 13    | 14    | 15    | 16    | 17    | 17    | 19    | 21    | 21    | 22    | 23    | 23    |
| Base                                 | n/a     | n/a     | 7,247 | 6,795 | 6,707 | 6,997 | 3,635 | 6,600 | 3,204 | 3,260 | 6,267 | 2,969 | 5,966 | 2,444 |
| <b>WOMEN</b>                         |         |         |       |       |       |       |       |       |       |       |       |       |       |       |
| 20 or less                           | 11      | 9       | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 6     | 6     | 6     | 6     | 6     |
| Over 20-25                           | 53      | 50      | 44    | 44    | 43    | 41    | 40    | 40    | 39    | 39    | 38    | 37    | 37    | 36    |
| Over 25-30                           | 24      | 26      | 32    | 31    | 33    | 34    | 33    | 32    | 33    | 34    | 33    | 34    | 33    | 35    |
| More than 30                         | 12      | 15      | 16    | 17    | 18    | 18    | 20    | 21    | 21    | 21    | 24    | 23    | 23    | 24    |
| Base                                 | n/a     | n/a     | 8,037 | 7,884 | 7,729 | 8,064 | 4,254 | 7,730 | 3,699 | 3,703 | 7,414 | 3,509 | 7,090 | 3,135 |

Source: Department of Health (2005) Health Survey for England 2004, and previous surveys. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>  
Earlier figures, Central Health Monitoring Unit, Department of Health, personal communication.

**Figure 11.5 Prevalence of obesity by sex, adults aged 16 to 64, 1986/87 to 2004, England**

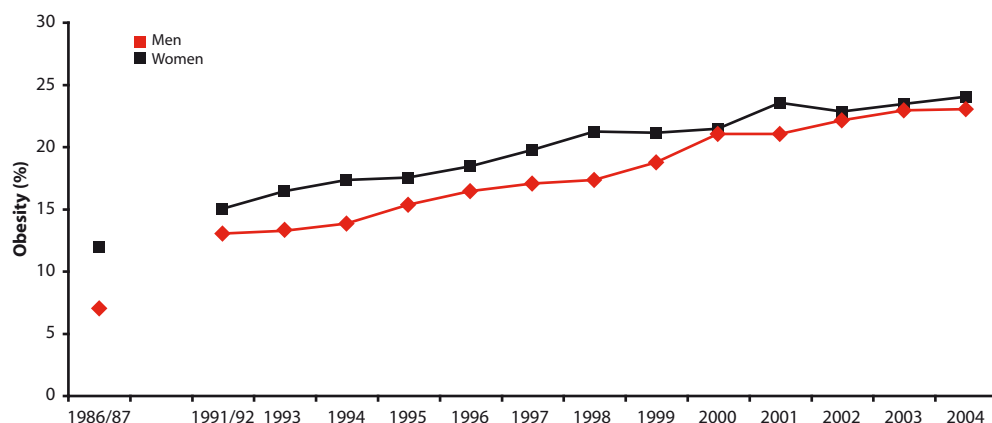


**Table 11.6** *Prevalence of overweight and obesity in children by sex and age, 1995 to 2004, England*

|                            | 1995  | 1996  | 1997  | 1998  | 1999 | 2000 | 2001  | 2002  | 2003  | 2004  |
|----------------------------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
|                            | %     | %     | %     | %     | %    | %    | %     | %     | %     | %     |
| <b>BOYS</b>                |       |       |       |       |      |      |       |       |       |       |
| <b>Aged 2-10</b>           |       |       |       |       |      |      |       |       |       |       |
| Overweight                 | 13    | 14    | 13    | 15    | 14   | 14   | 16    | 13    | 15    | 15    |
| Obese                      | 10    | 11    | 11    | 11    | 16   | 12   | 14    | 15    | 15    | 16    |
| Overweight including obese | 22    | 25    | 24    | 26    | 30   | 26   | 29    | 29    | 30    | 30    |
| <b>Aged 11-15</b>          |       |       |       |       |      |      |       |       |       |       |
| Overweight                 | 13    | 15    | 13    | 15    | 15   | 10   | 14    | 14    | 14    | 13    |
| Obese                      | 14    | 14    | 16    | 16    | 17   | 19   | 19    | 20    | 20    | 24    |
| Overweight including obese | 27    | 29    | 28    | 31    | 32   | 29   | 33    | 34    | 35    | 37    |
| <b>All (aged 2-15)</b>     |       |       |       |       |      |      |       |       |       |       |
| Overweight                 | 13    | 14    | 13    | 15    | 14   | 12   | 15    | 14    | 15    | 14    |
| Obese                      | 11    | 12    | 13    | 13    | 16   | 14   | 15    | 17    | 17    | 19    |
| Overweight including obese | 24    | 26    | 26    | 28    | 31   | 27   | 31    | 31    | 32    | 33    |
| Weighted base              | 1,918 | 2,132 | 3,063 | 1,981 | 977  | 877  | 1,653 | 3,745 | 1,452 | 8,833 |
| <b>GIRLS</b>               |       |       |       |       |      |      |       |       |       |       |
| <b>Aged 2-10</b>           |       |       |       |       |      |      |       |       |       |       |
| Overweight                 | 13    | 11    | 12    | 12    | 13   | 12   | 14    | 13    | 13    | 15    |
| Obese                      | 10    | 10    | 11    | 12    | 13   | 12   | 13    | 16    | 12    | 13    |
| Overweight including obese | 23    | 21    | 23    | 24    | 26   | 23   | 27    | 29    | 26    | 28    |
| <b>Aged 11-15</b>          |       |       |       |       |      |      |       |       |       |       |
| Overweight                 | 14    | 14    | 15    | 16    | 14   | 14   | 18    | 15    | 16    | 19    |
| Obese                      | 15    | 15    | 16    | 17    | 15   | 18   | 18    | 19    | 22    | 27    |
| Overweight including obese | 29    | 29    | 32    | 33    | 29   | 33   | 35    | 34    | 38    | 46    |
| <b>All (aged 2-15)</b>     |       |       |       |       |      |      |       |       |       |       |
| Overweight                 | 13    | 12    | 13    | 14    | 14   | 13   | 15    | 14    | 15    | 17    |
| Obese                      | 12    | 12    | 12    | 14    | 14   | 14   | 14    | 17    | 16    | 18    |
| Overweight including obese | 25    | 24    | 26    | 27    | 27   | 27   | 30    | 31    | 31    | 35    |
| Weighted base              | 1,901 | 2,014 | 3,069 | 1,872 | 950  | 841  | 1,699 | 3,636 | 1,393 | 8,228 |

*Notes:* Children were defined as overweight or obese using the 85th and 95th percentiles of the UK reference curves (known as the National BMI percentile classification).

Alternative methods of classification of childhood overweight and obesity are discussed in Health Survey for England 2002, Chapter 9, Introduction.

*Source:* Department of Health (2005) Health Survey for England 2004, and previous surveys. See <http://www.ic.nhs.uk/pubs/hsechildobesityupdate/exceltables/file>

Figure 11.6 Prevalence of obese children aged 2 to 15, 1995 to 2004, England

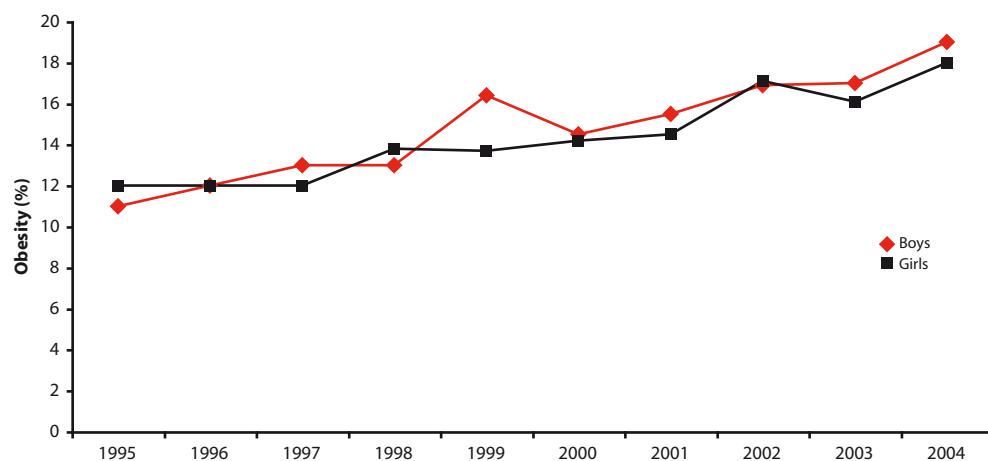


**Table 11.7** *Prevalence of overweight and obesity by sex and age, adults aged 16 and over, 2003 and 2010 (predicted), England*

| BMI Status             |      | Age group  |            |            |          |               |
|------------------------|------|------------|------------|------------|----------|---------------|
|                        |      | 16-34<br>% | 35-54<br>% | 55-74<br>% | 75+<br>% | All ages<br>% |
| <b>Men</b>             |      |            |            |            |          |               |
| <b>Obesity</b>         |      |            |            |            |          |               |
|                        | 2003 | 14         | 27         | 28         | 21       | 22            |
|                        | 2010 | 16         | 38         | 35         | 22       | 33            |
| <b>Overweight</b>      |      |            |            |            |          |               |
|                        | 2003 | 33         | 47         | 50         | 50       | 43            |
|                        | 2010 | 32         | 46         | 47         | 42       | 42            |
| <b>Women</b>           |      |            |            |            |          |               |
| <b>Obesity</b>         |      |            |            |            |          |               |
|                        | 2003 | 16         | 24         | 29         | 26       | 23            |
|                        | 2010 | 22         | 29         | 28         | 23       | 28            |
| <b>Overweight</b>      |      |            |            |            |          |               |
|                        | 2003 | 24         | 33         | 40         | 40       | 33            |
|                        | 2010 | 22         | 32         | 36         | 33       | 30            |
| <b>Weighted base</b>   |      |            |            |            |          |               |
| Men                    | 2003 | 2,154      | 2,389      | 1,607      | 369      | 6,519         |
| Women                  | 2003 | 1,996      | 2,362      | 1,675      | 536      | 6,570         |
| <b>Unweighted base</b> |      |            |            |            |          |               |
| Men                    | 2003 | 1,648      | 2,179      | 1,733      | 406      | 5,966         |
| Women                  | 2003 | 1,876      | 2,594      | 2,004      | 616      | 7,090         |

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

Population bases are presented in thousands. For 2003, data from the 2003 mid population estimates have been used. For 2010, forecasted midyear population estimates for 2010 have been applied.

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

Source: Department of Health (2006) Joint Health Surveys Unit. Forecasting obesity to 2010, Table 14. [http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT\\_ID=4138630&chk=XVZ/60](http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT_ID=4138630&chk=XVZ/60)

**Figure 11.7** *Prevalence of obesity by sex and age, adults aged 16 and over, 2003 and 2010 (predicted), England*

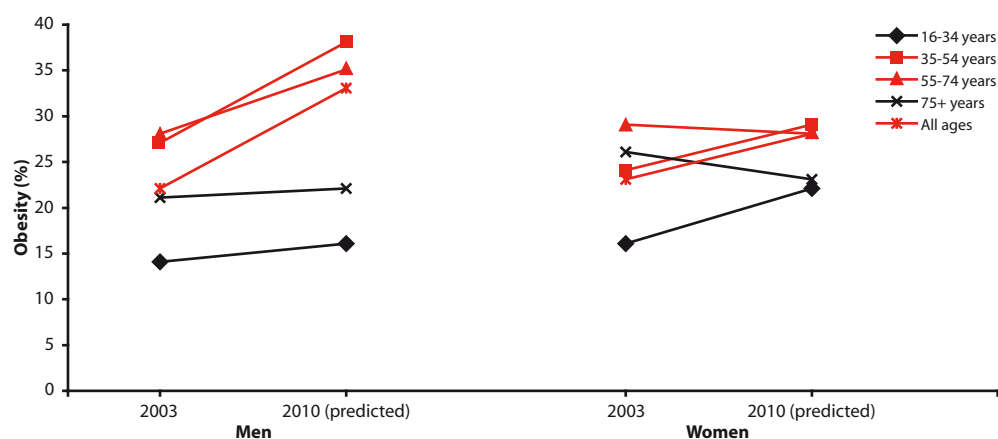


**Table 11.8** Prevalence of overweight and obese children aged 2 to 15 by sex and age, 2003 and 2010 (predicted), England

Aged 2-15

| BMI Status             | Age group |      |       | Total aged 2-15 |       |
|------------------------|-----------|------|-------|-----------------|-------|
|                        | 2-5       | 6-10 | 11-15 |                 |       |
|                        | %         | %    | %     | %               | %     |
| <b>Boys</b>            |           |      |       |                 |       |
| Obesity                |           |      |       |                 |       |
| 2003                   | 12        | 17   | 20    | 15              | 17    |
| 2010                   | 13        | 19   | 31    | 17              | 19    |
| Overweight             |           |      |       |                 |       |
| 2003                   | 13        | 15   | 14    | 15              | 15    |
| 2010                   | 15        | 14   | 14    | 15              | 14    |
| <b>Girls</b>           |           |      |       |                 |       |
| Obesity                |           |      |       |                 |       |
| 2003                   | 10        | 14   | 22    | 12              | 16    |
| 2010                   | 10        | 24   | 27    | 19              | 22    |
| Overweight             |           |      |       |                 |       |
| 2003                   | 12        | 14   | 16    | 13              | 15    |
| 2010                   | 13        | 14   | 16    | 13              | 14    |
| <b>Weighted base</b>   |           |      |       |                 |       |
| Boys 2003              | 330       | 549  | 574   | 878             | 1,452 |
| Girls 2003             | 341       | 516  | 535   | 858             | 1,393 |
| <b>Unweighted base</b> |           |      |       |                 |       |
| Boys 2003              | 332       | 532  | 553   | 864             | 1,417 |
| Girls 2003             | 336       | 533  | 547   | 869             | 1,416 |

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

Population bases are presented in thousands. For 2003, data from the 2003 mid population estimates have been used. For 2010, forecasted midyear population estimates for 2010 have been applied.

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

Source: Department of Health (2006) Joint Health Surveys Unit. Forecasting obesity to 2010, Table 15. [http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT\\_ID=4138630&chk=XVZ/60](http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT_ID=4138630&chk=XVZ/60)

**Figure 11.8** Prevalence of obesity by sex and age, children aged 2 to 15 years, 2003 and 2010 (predicted), England

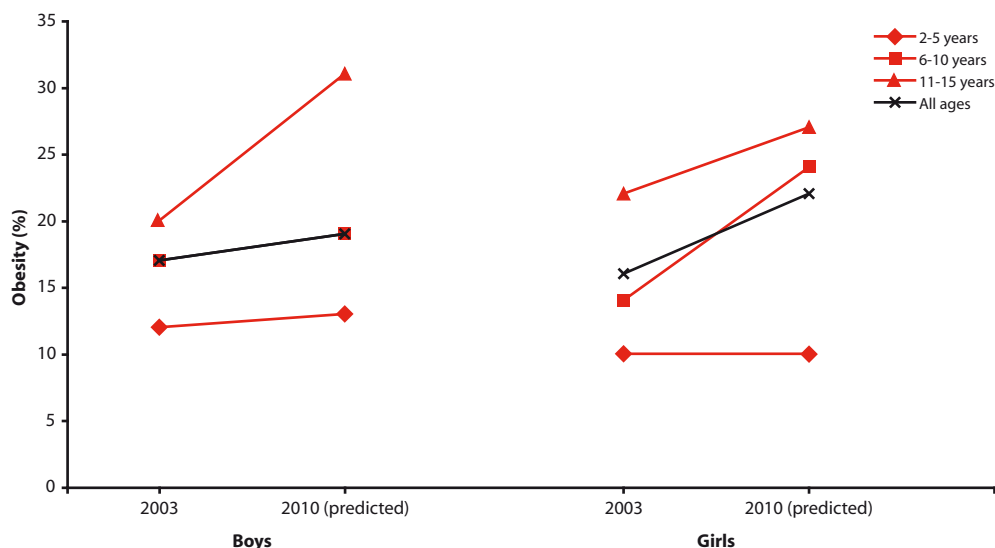


**Table 11.9 Prevalence of overweight and obesity by Government Office Region, by sex and age, 2003, England**

| Government Office Region | BMI status - Overweight including obesity |            |            |          |               |            |            |            |          |               |
|--------------------------|-------------------------------------------|------------|------------|----------|---------------|------------|------------|------------|----------|---------------|
|                          | MEN                                       |            |            |          |               | WOMEN      |            |            |          |               |
|                          | Age group                                 |            |            |          |               | Age group  |            |            |          |               |
|                          | 16-34<br>%                                | 35-54<br>% | 55-74<br>% | 75+<br>% | All ages<br>% | 16-34<br>% | 35-54<br>% | 55-74<br>% | 75+<br>% | All ages<br>% |
| North East               | 37                                        | 74         | 81         |          | 65            | 45         | 67         | 61         | [67]     | 59            |
| North West               | 46                                        | 72         | 78         | 68       | 66            | 43         | 63         | 74         | 64       | 60            |
| Yorkshire and the Humber | 47                                        | 77         | 75         | 69       | 66            | 42         | 53         | 71         | 69       | 55            |
| East Midlands            | 51                                        | 76         | 79         | 84       | 69            | 43         | 56         | 71         | 69       | 57            |
| West Midlands            | 51                                        | 70         | 81         | 82       | 66            | 49         | 62         | 74         | 59       | 61            |
| East of England          | 52                                        | 74         | 79         | 69       | 68            | 42         | 56         | 68         | 73       | 57            |
| London                   | 42                                        | 71         | 73         | 64       | 58            | 31         | 53         | 67         | 64       | 48            |
| South East               | 43                                        | 77         | 77         | 59       | 65            | 35         | 52         | 65         | 63       | 52            |
| South West               | 49                                        | 75         | 73         | 74       | 68            | 36         | 58         | 66         | 70       | 56            |
| <i>Weighted base</i>     |                                           |            |            |          |               |            |            |            |          |               |
| North East               | 106                                       | 126        | 113        | 23       | 339           | 109        | 125        | 108        | 35       | 376           |
| North West               | 282                                       | 379        | 242        | 61       | 878           | 268        | 342        | 222        | 69       | 901           |
| Yorkshire and the Humber | 216                                       | 274        | 172        | 50       | 634           | 215        | 218        | 167        | 50       | 650           |
| East Midlands            | 210                                       | 219        | 158        | 48       | 591           | 168        | 208        | 150        | 56       | 582           |
| West Midlands            | 255                                       | 284        | 173        | 57       | 676           | 202        | 253        | 181        | 60       | 696           |
| East of England          | 274                                       | 262        | 214        | 65       | 755           | 228        | 252        | 191        | 65       | 735           |
| London                   | 453                                       | 370        | 197        | 57       | 930           | 342        | 321        | 163        | 50       | 876           |
| South East               | 360                                       | 408        | 303        | 81       | 1,052         | 301        | 380        | 304        | 85       | 1,071         |
| South West               | 164                                       | 278        | 203        | 65       | -             | 163        | 265        | 189        | 66       | 683           |
| <i>Unweighted base</i>   |                                           |            |            |          |               |            |            |            |          |               |
| North East               | 96                                        | 136        | 139        | 27       | 368           | 123        | 157        | 145        | 43       | 468           |
| North West               | 233                                       | 364        | 268        | 68       | 849           | 271        | 385        | 269        | 81       | 1,006         |
| Humber                   | 164                                       | 236        | 178        | 53       | 560           | 196        | 224        | 191        | 56       | 667           |
| East Midlands            | 170                                       | 212        | 180        | 55       | 574           | 172        | 248        | 191        | 67       | 678           |
| West Midlands            | 197                                       | 265        | 191        | 65       | 629           | 194        | 292        | 222        | 70       | 778           |
| East of England          | 224                                       | 253        | 238        | 74       | 728           | 224        | 290        | 235        | 76       | 825           |
| London                   | 299                                       | 298        | 193        | 59       | 727           | 282        | 319        | 181        | 55       | 837           |
| South East               | 266                                       | 356        | 313        | 87       | 930           | 271        | 402        | 351        | 95       | 1,119         |
| South West               | 122                                       | 244        | 210        | 69       | 601           | 143        | 277        | 219        | 73       | 712           |

Notes: Population bases are presented in thousands and use data from the 2003 mid population estimates

[ ] indicate that caution should be taken with these estimates due to small base sizes

Source: Department of Health (2006) Joint Health Surveys Unit. Forecasting obesity to 2010, Tables 4 and 5, [http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT\\_ID=4138630&chk=XVZ/60](http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT_ID=4138630&chk=XVZ/60)

*Table 11.10 Prevalence of overweight and obesity by sex and socio-economic classification, 2003, England*

| NS-SEC of household reference person      |                              |              |                                             |                                  |                           |
|-------------------------------------------|------------------------------|--------------|---------------------------------------------|----------------------------------|---------------------------|
|                                           | Managerial<br>& professional | Intermediate | Small employers<br>& own<br>account workers | Lower supervisory<br>& technical | Semi-routine<br>& routine |
| <i>Body mass index (kg/m<sup>2</sup>)</i> | %                            | %            | %                                           | %                                | %                         |
| <b>MEN</b>                                |                              |              |                                             |                                  |                           |
| 25-30 (overweight)                        | 43                           | 43           | 38                                          | 39                               | 39                        |
| Over 30 (obese)                           | 21                           | 20           | 27                                          | 24                               | 23                        |
| <i>Base</i>                               | 2,706                        | 459          | 754                                         | 879                              | 1,615                     |
| <b>WOMEN</b>                              |                              |              |                                             |                                  |                           |
| 25-30 (overweight)                        | 28                           | 29           | 35                                          | 29                               | 28                        |
| Over 30 (obese)                           | 21                           | 21           | 22                                          | 32                               | 33                        |
| <i>Base</i>                               | 2,540                        | 612          | 671                                         | 758                              | 1,815                     |

Notes: Adults aged 16 and over

Age-standardised percentages: see source for method of age-standardisation

Source: Department of Health (2004) Health Survey for England 2003. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>

*Table 11.11 Prevalence of a raised waist to hip ratio by sex and socio-economic classification, 2003, England*

| NS-SEC of household reference person |                              |              |                                             |                                  |                           |
|--------------------------------------|------------------------------|--------------|---------------------------------------------|----------------------------------|---------------------------|
|                                      | Managerial<br>& professional | Intermediate | Small employers<br>& own<br>account workers | Lower supervisory<br>& technical | Semi-routine<br>& routine |
|                                      | %                            | %            | %                                           | %                                | %                         |
| <b>MEN</b>                           |                              |              |                                             |                                  |                           |
| Mean waist-hip ratio                 | 0.90                         | 0.91         | 0.92                                        | 0.91                             | 0.92                      |
| <i>Base</i>                          | 2,275                        | 395          | 626                                         | 764                              | 1,383                     |
| <b>WOMEN</b>                         |                              |              |                                             |                                  |                           |
| Mean waist-hip ratio                 | 0.81                         | 0.81         | 0.82                                        | 0.82                             | 0.83                      |
| <i>Base</i>                          | 2,257                        | 544          | 594                                         | 687                              | 1,623                     |

Notes: Adults aged 16 and over.

Raised waist to hip ratio for men is 0.95 and over and for women is 0.85 and over; age-standardised percentages; see source for method of age-standardisation.

Source: Department of Health (2004) Health Survey for England 2003. See [www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en](http://www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en)

*Table 11.12 Prevalence of obesity by sex and ethnic group, 2004, England*

|                        | General population | Black Caribbean | Black African | Indian | Pakistani | Bangladeshi | Chinese | Irish |
|------------------------|--------------------|-----------------|---------------|--------|-----------|-------------|---------|-------|
|                        | %                  | %               | %             | %      | %         | %           | %       | %     |
| <b>MEN</b>             | 23                 | 25              | 17            | 14     | 15        | 6           | 6       | 25    |
| <i>Unweighted base</i> | 2,444              | 317             | 297           | 482    | 346       | 330         | 307     | 420   |
| <b>WOMEN</b>           | 23                 | 32              | 39            | 20     | 28        | 17          | 8       | 21    |
| <i>Unweighted base</i> | 3,135              | 459             | 332           | 546    | 391       | 353         | 308     | 555   |

Notes: Adults aged 16 and over.

Obesity is defined as a BMI of over 30; age-standardised percentages; see source for method of age-standardisation.

Source: Department of Health (2005) Health Survey for England 2004. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>

*Figure 11.12 Prevalence of obesity by sex and ethnic group, 2004, England*

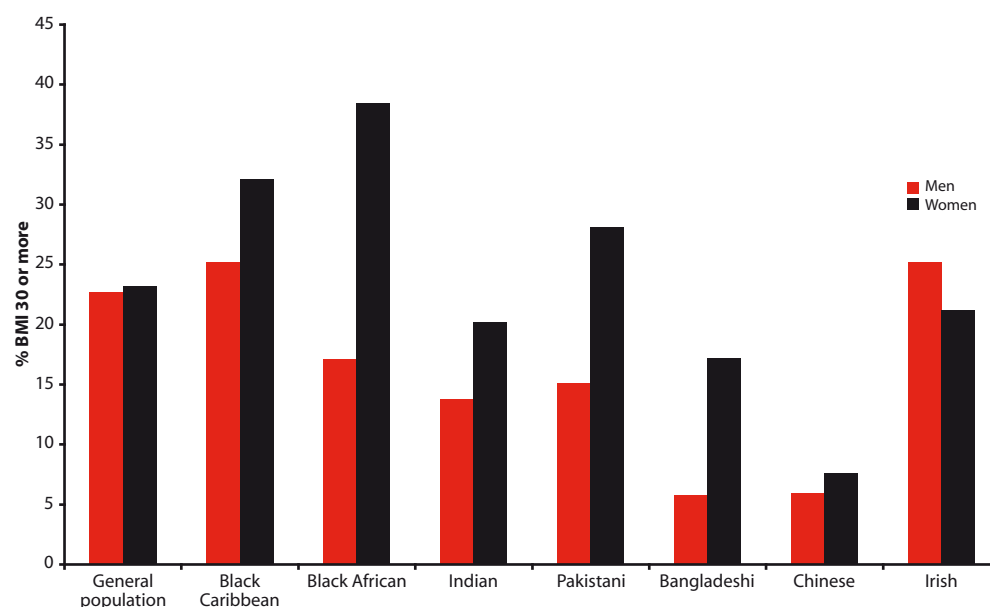


*Table 11.13 Prevalence of a raised waist to hip ratio by sex and ethnic group, 2004, England*

|                        | General population | Black Caribbean | Black African | Indian | Pakistani | Bangladeshi | Chinese | Irish |
|------------------------|--------------------|-----------------|---------------|--------|-----------|-------------|---------|-------|
|                        | %                  | %               | %             | %      | %         | %           | %       | %     |
| <b>MEN</b>             | 33                 | 25              | 16            | 36     | 37        | 32          | 17      | 36    |
| <i>Unweighted base</i> | 4,692              | 209             | 156           | 310    | 197       | 138         | 182     | 311   |
| <b>WOMEN</b>           | 30                 | 37              | 32            | 30     | 39        | 50          | 22      | 37    |
| <i>Unweighted base</i> | 5,995              | 314             | 200           | 345    | 224       | 171         | 185     | 405   |

Notes: Adults aged 16 and over.

A raised waist to hip ratio for men is 0.95 and over and for women is 0.85 and over; age-standardised percentages; see source for method of age-standardisation. General population figures taken from 2003 Health Survey for England.

Source: Department of Health (2005) Health Survey for England 2004. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>

*Table 11.14 Prevalence estimates of overweight and obesity for 2002, and projections for 2005 and 2010, by sex, adults aged 15 and over, the World*

|                                                         | Prevalence of overweight<br>Male<br>% |      |      | Prevalence of overweight<br>Female<br>% |      |      | Prevalence of obesity<br>Male<br>% |      |      | Prevalence of obesity<br>Female<br>% |      |      |
|---------------------------------------------------------|---------------------------------------|------|------|-----------------------------------------|------|------|------------------------------------|------|------|--------------------------------------|------|------|
|                                                         | 2002                                  | 2005 | 2010 | 2002                                    | 2005 | 2010 | 2002                               | 2005 | 2010 | 2002                                 | 2005 | 2010 |
| <b>WHO Africa Region</b>                                |                                       |      |      |                                         |      |      |                                    |      |      |                                      |      |      |
| Angola                                                  | 19.9                                  | 21.3 | 23.8 | 31.4                                    | 33.6 | 37.2 | 1.6                                | 1.9  | 2.4  | 5.9                                  | 6.9  | 8.7  |
| Benin                                                   | 15.8                                  | 17.9 | 21.9 | 32.8                                    | 39.1 | 43.8 | 0.7                                | 1.0  | 1.5  | 6.2                                  | 9.3  | 12.1 |
| Botswana                                                | 35.5                                  | 37.8 | 41.6 | 46.9                                    | 49.4 | 53.5 | 4.6                                | 5.4  | 6.9  | 12.9                                 | 14.6 | 17.7 |
| Burkina Faso                                            | 10.6                                  | 12.1 | 15.1 | 15.8                                    | 16.0 | 19.4 | 0.3                                | 0.4  | 0.6  | 1.1                                  | 1.1  | 1.7  |
| Burundi                                                 | 7.0                                   | 7.8  | 9.1  | 16.3                                    | 18.1 | 21.1 | 0.1                                | 0.1  | 0.2  | 1.2                                  | 1.5  | 2.2  |
| Cameroon                                                | 35.7                                  | 38.7 | 43.9 | 38.3                                    | 41.1 | 45.8 | 6.3                                | 7.5  | 10.1 | 9.2                                  | 10.8 | 13.8 |
| Cape Verde                                              | 30.5                                  | 32.4 | 35.6 | 41.8                                    | 44.1 | 48.0 | 4.0                                | 4.6  | 5.8  | 11.0                                 | 12.5 | 15.1 |
| Central African Republic                                | 6.7                                   | 7.2  | 8.0  | 17.7                                    | 18.5 | 20.0 | 0.1                                | 0.1  | 0.1  | 1.1                                  | 1.3  | 1.5  |
| Chad                                                    | 10.4                                  | 12.0 | 15.0 | 17.1                                    | 19.2 | 22.9 | 0.3                                | 0.4  | 0.6  | 1.3                                  | 1.7  | 2.6  |
| Comoros                                                 | 17.7                                  | 20.0 | 24.3 | 33.1                                    | 35.9 | 40.7 | 0.9                                | 1.2  | 1.9  | 5.8                                  | 7.1  | 9.6  |
| Congo, Democratic Republic of                           | 4.3                                   | 4.8  | 5.7  | 11.9                                    | 13.3 | 15.8 | 0.0                                | 0.0  | 0.1  | 0.6                                  | 0.8  | 1.1  |
| Congo, Republic of                                      | 12.0                                  | 12.7 | 13.8 | 24.2                                    | 25.2 | 26.8 | 0.4                                | 0.4  | 0.5  | 2.7                                  | 3.0  | 3.5  |
| Côte d'Ivoire                                           | 10.9                                  | 11.6 | 12.7 | 32.5                                    | 34.2 | 36.0 | 0.2                                | 0.2  | 0.3  | 4.8                                  | 5.4  | 6.2  |
| Djibouti                                                | 17.6                                  | 18.9 | 21.2 | 28.8                                    | 31.0 | 34.5 | 1.2                                | 1.4  | 1.8  | 5.0                                  | 5.8  | 7.4  |
| Equatorial Guinea                                       | 35.4                                  | 37.5 | 41.0 | 46.1                                    | 48.5 | 52.3 | 5.6                                | 6.4  | 7.9  | 13.8                                 | 15.4 | 18.4 |
| Eritrea                                                 | 2.9                                   | 3.1  | 3.5  | 5.9                                     | 5.7  | 6.3  | 0.0                                | 0.0  | 0.0  | 0.1                                  | 0.1  | 0.1  |
| Ethiopia                                                | 7.4                                   | 7.8  | 8.6  | 3.1                                     | 3.3  | 3.7  | 0.1                                | 0.2  | 0.2  | 0.0                                  | 0.0  | 0.0  |
| Gabon                                                   | 22.7                                  | 25.4 | 30.2 | 45.0                                    | 47.7 | 52.2 | 1.8                                | 2.3  | 3.4  | 13.5                                 | 15.5 | 19.2 |
| Gambia                                                  | 9.0                                   | 10.3 | 12.8 | 20.5                                    | 22.8 | 27.0 | 0.2                                | 0.3  | 0.5  | 1.9                                  | 2.5  | 3.6  |
| Ghana                                                   | 27.3                                  | 30.3 | 35.6 | 26.2                                    | 28.1 | 32.5 | 2.6                                | 3.3  | 4.8  | 3.5                                  | 4.2  | 5.9  |
| Guinea                                                  | 14.5                                  | 16.5 | 20.3 | 27.8                                    | 30.4 | 34.9 | 0.6                                | 0.8  | 1.3  | 4.2                                  | 5.2  | 7.1  |
| Guinea-Bissau                                           | 10.5                                  | 11.4 | 12.9 | 20.3                                    | 22.1 | 25.1 | 0.4                                | 0.5  | 0.6  | 2.4                                  | 2.8  | 3.7  |
| Kenya                                                   | 6.5                                   | 6.9  | 7.7  | 21.3                                    | 21.7 | 23.3 | 0.1                                | 0.1  | 0.1  | 1.8                                  | 1.9  | 2.2  |
| Lesotho                                                 | 26.3                                  | 27.5 | 29.5 | 68.7                                    | 69.5 | 70.8 | 1.7                                | 1.9  | 2.3  | 33.2                                 | 34.3 | 36.1 |
| Liberia                                                 | 27.8                                  | 29.6 | 32.7 | 39.2                                    | 41.6 | 45.4 | 3.3                                | 3.8  | 4.8  | 9.6                                  | 11.0 | 13.4 |
| Madagascar                                              | 12.9                                  | 14.5 | 17.5 | 18.1                                    | 20.2 | 24.1 | 0.7                                | 1.0  | 1.5  | 1.5                                  | 1.9  | 2.9  |
| Malawi                                                  | 14.3                                  | 15.1 | 16.4 | 21.6                                    | 23.5 | 25.2 | 0.6                                | 0.7  | 0.8  | 1.6                                  | 2.0  | 2.4  |
| Mali                                                    | 12.8                                  | 14.6 | 18.1 | 26.1                                    | 33.6 | 38.4 | 0.4                                | 0.6  | 1.0  | 3.4                                  | 6.2  | 8.4  |
| Mauritania                                              | 27.5                                  | 30.4 | 35.4 | 52.2                                    | 54.6 | 58.6 | 2.9                                | 3.7  | 5.3  | 20.6                                 | 22.9 | 26.9 |
| Mozambique                                              | 8.7                                   | 9.3  | 10.3 | 24.3                                    | 25.3 | 26.9 | 0.1                                | 0.2  | 0.2  | 2.7                                  | 3.0  | 3.4  |
| Namibia                                                 | 11.6                                  | 12.3 | 13.5 | 31.5                                    | 32.6 | 34.4 | 0.2                                | 0.3  | 0.4  | 4.9                                  | 5.3  | 6.1  |
| Niger                                                   | 12.1                                  | 13.9 | 17.2 | 19.6                                    | 21.3 | 25.1 | 0.4                                | 0.6  | 0.9  | 1.9                                  | 2.3  | 3.4  |
| Nigeria                                                 | 19.6                                  | 21.9 | 26.0 | 29.6                                    | 32.2 | 36.8 | 1.6                                | 2.0  | 3.0  | 4.9                                  | 6.0  | 8.1  |
| Rwanda                                                  | 6.8                                   | 7.3  | 8.1  | 19.2                                    | 20.1 | 21.7 | 0.1                                | 0.1  | 0.1  | 1.2                                  | 1.3  | 1.6  |
| Sao Tome and Principe                                   | 14.4                                  | 15.5 | 17.5 | 25.2                                    | 27.2 | 30.5 | 0.8                                | 0.9  | 1.2  | 3.7                                  | 4.4  | 5.7  |
| Senegal                                                 | 14.4                                  | 16.1 | 19.2 | 34.1                                    | 36.7 | 41.0 | 1.0                                | 1.3  | 2.0  | 7.8                                  | 9.2  | 11.8 |
| Seychelles                                              | 55.1                                  | 58.5 | 63.8 | 68.6                                    | 70.7 | 73.8 | 14.2                               | 16.7 | 21.3 | 35.8                                 | 38.6 | 43.2 |
| Sierra Leone                                            | 20.2                                  | 22.4 | 26.3 | 41.6                                    | 44.5 | 49.1 | 1.9                                | 2.4  | 3.5  | 10.9                                 | 12.7 | 16.0 |
| Somalia                                                 | 9.8                                   | 10.6 | 12.1 | 19.3                                    | 21.1 | 24.0 | 0.3                                | 0.4  | 0.6  | 2.1                                  | 2.6  | 3.4  |
| South Africa                                            | 38.2                                  | 39.3 | 41.3 | 66.4                                    | 67.2 | 68.5 | 6.2                                | 6.7  | 7.6  | 34.3                                 | 35.2 | 36.8 |
| Sudan                                                   | 16.0                                  | 17.2 | 19.3 | 27.0                                    | 29.1 | 32.5 | 1.0                                | 1.2  | 1.5  | 4.3                                  | 5.1  | 6.5  |
| Swaziland                                               | 33.6                                  | 35.8 | 39.5 | 45.2                                    | 47.8 | 51.9 | 4.0                                | 4.7  | 6.1  | 11.8                                 | 13.5 | 16.5 |
| Tanzania, United Republic of                            | 14.7                                  | 15.4 | 16.8 | 26.0                                    | 27.0 | 28.7 | 0.6                                | 0.7  | 0.8  | 2.8                                  | 3.1  | 3.6  |
| Togo                                                    | 15.0                                  | 17.1 | 20.9 | 28.3                                    | 30.9 | 35.5 | 0.6                                | 0.9  | 1.4  | 4.3                                  | 5.3  | 7.3  |
| Uganda                                                  | 6.9                                   | 7.4  | 8.2  | 20.1                                    | 22.2 | 23.9 | 0.1                                | 0.1  | 0.1  | 1.3                                  | 1.6  | 1.9  |
| Zambia                                                  | 7.0                                   | 7.5  | 8.3  | 20.2                                    | 18.6 | 20.0 | 0.1                                | 0.1  | 0.1  | 1.6                                  | 1.3  | 1.5  |
| Zimbabwe                                                | 14.5                                  | 15.3 | 16.7 | 47.2                                    | 48.9 | 50.6 | 0.5                                | 0.6  | 0.8  | 14.1                                 | 15.3 | 16.7 |
| <b>WHO Eastern Mediterranean and Middle East Region</b> |                                       |      |      |                                         |      |      |                                    |      |      |                                      |      |      |
| Afghanistan                                             | 11.2                                  | 12.7 | 15.6 | 15.6                                    | 17.4 | 20.8 | 0.3                                | 0.5  | 0.7  | 1.1                                  | 1.4  | 2.1  |
| Algeria                                                 | 32.1                                  | 34.1 | 37.4 | 43.2                                    | 45.6 | 49.4 | 4.5                                | 5.2  | 6.4  | 11.9                                 | 13.4 | 16.2 |
| Armenia                                                 | 53.9                                  | 53.9 | 53.9 | 52.8                                    | 52.8 | 52.8 | 12.1                               | 12.1 | 12.1 | 19.8                                 | 19.8 | 19.8 |
| Bahrain                                                 | 60.9                                  | 60.9 | 60.9 | 66.0                                    | 67.3 | 69.5 | 21.2                               | 21.2 | 21.2 | 33.5                                 | 35.2 | 37.9 |
| Brunei Darussalam                                       | 55.3                                  | 56.4 | 58.1 | 61.9                                    | 63.2 | 65.2 | 14.4                               | 15.2 | 16.6 | 25.9                                 | 27.4 | 29.7 |
| Egypt                                                   | 64.5                                  | 64.5 | 64.5 | 69.7                                    | 74.2 | 76.0 | 22.0                               | 22.0 | 22.0 | 39.3                                 | 45.5 | 48.0 |
| Iran, Islamic Republic of                               | 47.3                                  | 48.5 | 48.5 | 55.7                                    | 57.8 | 60.2 | 9.4                                | 10.0 | 10.0 | 25.0                                 | 27.0 | 29.5 |
| Iraq                                                    | 38.7                                  | 40.1 | 42.4 | 49.0                                    | 50.8 | 53.6 | 6.6                                | 7.2  | 8.3  | 15.5                                 | 16.8 | 19.1 |
| Jordan                                                  | 57.5                                  | 57.5 | 57.5 | 67.3                                    | 63.4 | 65.4 | 19.6                               | 19.6 | 19.6 | 40.2                                 | 35.6 | 37.9 |
| Kuwait                                                  | 69.5                                  | 69.5 | 69.5 | 76.6                                    | 79.0 | 80.4 | 29.6                               | 29.6 | 29.6 | 49.2                                 | 52.9 | 55.2 |
| Lebanon                                                 | 51.7                                  | 51.7 | 51.7 | 52.9                                    | 54.3 | 56.7 | 14.9                               | 14.9 | 14.9 | 23.9                                 | 25.2 | 27.4 |
| Libyan Arab Jamahiriya                                  | 47.6                                  | 48.8 | 50.8 | 56.0                                    | 57.5 | 59.8 | 10.7                               | 11.4 | 12.7 | 21.1                                 | 22.5 | 24.9 |
| Morocco                                                 | 31.1                                  | 31.1 | 31.1 | 53.0                                    | 54.7 | 57.5 | 3.7                                | 3.7  | 3.7  | 19.0                                 | 20.5 | 23.1 |
| Oman                                                    | 43.4                                  | 43.4 | 43.4 | 46.0                                    | 47.8 | 50.8 | 7.7                                | 7.7  | 7.7  | 13.5                                 | 14.8 | 17.0 |
| Pakistan                                                | 16.7                                  | 18.8 | 22.8 | 23.2                                    | 25.5 | 29.5 | 0.8                                | 1.0  | 1.6  | 2.9                                  | 3.6  | 5.0  |
| Qatar                                                   | 56.9                                  | 57.9 | 59.5 | 62.9                                    | 64.1 | 65.9 | 16.6                               | 17.4 | 18.7 | 27.9                                 | 29.3 | 31.6 |
| Saudi Arabia                                            | 62.4                                  | 63.1 | 63.1 | 63.0                                    | 63.8 | 65.9 | 22.3                               | 23.0 | 23.0 | 32.8                                 | 33.8 | 36.4 |
| Syrian Arab Republic                                    | 47.2                                  | 48.4 | 50.4 | 55.7                                    | 57.2 | 59.6 | 10.5                               | 11.2 | 12.4 | 20.8                                 | 22.2 | 24.6 |
| Tunisia                                                 | 42.8                                  | 42.8 | 42.8 | 57.9                                    | 59.2 | 61.4 | 7.7                                | 7.7  | 7.7  | 28.8                                 | 30.2 | 32.6 |
| United Arab Emirates                                    | 66.9                                  | 66.9 | 66.9 | 68.4                                    | 69.6 | 71.6 | 24.5                               | 24.5 | 24.5 | 37.9                                 | 39.4 | 42.0 |
| Yemen                                                   | 24.6                                  | 24.6 | 24.6 | 27.8                                    | 29.4 | 32.2 | 2.0                                | 2.0  | 2.0  | 4.4                                  | 5.1  | 6.2  |
| <b>WHO European Region</b>                              |                                       |      |      |                                         |      |      |                                    |      |      |                                      |      |      |
| Albania                                                 | 57.2                                  | 57.2 | 57.2 | 52.5                                    | 52.5 | 52.5 | 18.6                               | 18.6 | 18.6 | 23.8                                 | 23.8 | 23.8 |
| Andorra                                                 | 59.8                                  | 60.9 | 62.5 | 65.5                                    | 66.8 | 68.7 | 14.9                               | 15.8 | 17.1 | 27.3                                 | 28.8 | 31.2 |
| Austria                                                 | 59.0                                  | 61.0 | 62.9 | 53.4                                    | 53.2 | 55.2 | 19.5                               | 21.3 | 23.1 | 20.4                                 | 20.3 | 21.8 |
| Azerbaijan                                              | 57.4                                  | 57.4 | 57.4 | 56.8                                    | 56.8 | 56.8 | 15.4                               | 15.4 | 15.4 | 24.9                                 | 24.9 | 24.9 |
| Belarus                                                 | 63.7                                  | 63.7 | 63.7 | 69.9                                    | 69.9 | 69.9 | 16.2                               | 16.2 | 16.2 | 32.2                                 | 32.2 | 32.2 |
| Belgium                                                 | 49.0                                  | 51.9 | 54.1 | 40.7                                    | 40.7 | 42.9 | 11.4                               | 13.3 | 14.8 | 9.5                                  | 9.5  | 10.7 |
| Bosnia and Herzegovina                                  | 56.6                                  | 56.6 | 56.6 | 51.0                                    | 51.0 | 51.0 | 13.8                               | 13.8 | 13.8 | 21.5                                 | 21.5 | 21.5 |
| Bulgaria                                                | 62.8                                  | 62.8 | 62.8 | 45.5                                    | 45.5 | 45.5 | 17.0                               | 17.0 | 17.0 | 19.0                                 | 19.0 | 19.0 |
| Croatia                                                 | 60.0                                  | 61.3 | 63.5 | 45.3                                    | 46.4 | 48.3 | 17.1                               | 18.2 | 20.1 | 15.4                                 | 16.2 | 17.6 |
| Cyprus                                                  | 50.4                                  | 51.7 | 53.9 | 59.0                                    | 60.6 | 63.0 | 9.4                                | 10.1 | 11.4 | 20.7                                 | 22.2 | 24.7 |
| Czech Republic                                          | 56.7                                  | 58.1 | 60.1 | 47.0                                    | 47.8 | 49.3 | 17.4                               | 18.5 | 20.2 | 20.0                                 | 20.7 | 22.1 |
| Denmark                                                 | 50.7                                  | 52.5 | 55.0 | 37.5                                    | 39.1 | 41.4 | 9.6                                | 10.6 | 12.0 | 6.4                                  | 7.1  | 8.3  |
| Estonia                                                 | 50.7                                  | 50.7 | 50.7 | 33.8                                    | 33.8 | 33.8 | 8.6                                | 8.6  | 8.6  | 8.4                                  | 8.4  | 8.4  |
| Finland                                                 | 63.8                                  | 64.9 | 67.1 | 52.0                                    | 52.4 | 54.5 | 18.0                               | 18.9 | 20.9 | 17.5                                 | 17.8 | 19.4 |
| France                                                  | 44.1                                  | 45.6 | 48.0 | 33.4                                    | 34.7 | 36.9 | 7.2                                | 7.8  | 9.0  | 6.1                                  | 6.6  | 7.6  |
| Georgia                                                 | 37.4                                  | 38.9 | 41.5 | 48.9                                    | 50.8 | 53.8 | 4.7                                | 5.2  | 6.1  | 13.4                                 | 14.7 | 17.1 |
| Germany                                                 | 63.7                                  | 65.1 | 67.2 | 53.6                                    | 55.1 | 57.1 | 19.7                               | 20.9 | 22.9 | 19.2                                 | 20.4 | 22.1 |
| Greece                                                  | 74.6                                  | 75.7 | 77.5 | 60.1                                    | 61.3 | 63.2 | 26.2                               | 27.7 | 30.3 | 23.4                                 | 24.5 | 26.4 |
| Hungary                                                 | 55.9                                  | 55.9 | 55.9 | 47.4                                    | 47.4 | 47.4 | 15.8                               | 15.8 | 15.8 | 16.1                                 | 16.1 | 16.1 |
| Iceland                                                 | 57.7                                  | 59.0 | 61.2 | 60.5                                    | 61.7 | 63.7 | 15.7                               | 16.7 | 18.5 | 22.0                                 | 23.2 | 25.3 |
| Ireland                                                 | 50.0                                  | 51.5 | 53.9 | 40.3                                    | 41.7 | 43.9 | 9.5                                | 10.3 | 11.7 | 8.4                                  | 9.1  | 10.4 |
| Israel                                                  | 55.9                                  | 57.2 | 59.4 | 56.3                                    | 57.5 | 59.3 | 15.2                               | 16.2 | 17.9 | 23.3                                 | 24.3 | 25.9 |
| Italy                                                   | 51.9                                  | 52.7 | 55.0 | 37.8                                    | 38.3 | 40.0 | 12.2                               | 12.9 | 14.4 | 12.2                                 | 12.6 | 13.7 |
| Kazakhstan                                              | 43.9                                  | 43.9 | 43.9 | 41.9                                    | 38.9 | 38.9 | 7.9                                | 7.9  | 7.9  | 13.1                                 | 11.0 | 11.0 |
| Kyrgyzstan                                              | 34.5                                  | 34.5 | 34.5 | 43.9                                    | 43.9 | 43.9 | 5.0                                | 5.0  | 5.0  | 14.2                                 | 14.2 | 14.2 |
| Latvia                                                  | 49.9                                  | 49.9 | 49.9 | 44.7                                    | 44.7 | 44.7 | 9.7                                | 9.7  | 9.7  | 15.0                                 | 15.0 | 15.0 |
| Lithuania                                               | 62.3                                  | 62.3 | 62.3 | 43.9                                    | 43.9 | 43.9 | 16.8                               | 16.8 | 16.8 | 13.9                                 | 13.9 | 13.9 |
| Luxembourg                                              | 53.0                                  | 54.4 | 56.9 | 52.6                                    | 54.0 | 56.2 | 11.2                               | 12.1 | 13.6 | 15.0                                 | 16.0 | 17.8 |

|                                        | Prevalence of overweight |      |      | Prevalence of overweight |      |      | Prevalence of obesity |      |      | Prevalence of obesity |      |      |
|----------------------------------------|--------------------------|------|------|--------------------------|------|------|-----------------------|------|------|-----------------------|------|------|
|                                        | Male                     |      |      | Female                   |      |      | Male                  |      |      | Female                |      |      |
|                                        | 2002                     | 2005 | 2010 | 2002                     | 2005 | 2010 | 2002                  | 2005 | 2010 | 2002                  | 2005 | 2010 |
| Macedonia, FYR                         | 37.1                     | 37.1 | 37.1 | 57.4                     | 57.4 | 57.4 | 5.9                   | 5.9  | 5.9  | 24.3                  | 24.3 | 24.3 |
| Malta                                  | 70.2                     | 71.4 | 73.3 | 65.1                     | 66.1 | 67.6 | 24.6                  | 25.9 | 28.1 | 33.8                  | 34.8 | 36.5 |
| Moldova, Republic of                   | 33.3                     | 34.8 | 37.5 | 45.4                     | 47.4 | 50.7 | 3.5                   | 4.0  | 4.8  | 11.2                  | 12.5 | 14.8 |
| Monaco                                 | 58.0                     | 59.1 | 60.9 | 64.3                     | 65.6 | 67.6 | 13.7                  | 14.5 | 15.9 | 26.0                  | 27.5 | 29.9 |
| Netherlands                            | 46.7                     | 48.0 | 50.2 | 42.6                     | 44.0 | 46.1 | 9.6                   | 10.4 | 11.7 | 10.7                  | 11.5 | 12.9 |
| Norway                                 | 53.3                     | 54.8 | 57.2 | 42.0                     | 43.4 | 45.8 | 10.4                  | 11.3 | 12.8 | 8.6                   | 9.3  | 10.7 |
| Poland                                 | 50.7                     | 50.7 | 50.7 | 44.3                     | 44.3 | 44.3 | 12.9                  | 12.9 | 12.9 | 18.0                  | 18.0 | 18.0 |
| Portugal                               | 55.5                     | 58.5 | 60.9 | 47.6                     | 49.2 | 51.2 | 13.1                  | 13.7 | 15.5 | 14.6                  | 16.1 | 17.7 |
| Romania                                | 37.7                     | 37.7 | 37.7 | 40.6                     | 40.6 | 40.6 | 5.5                   | 5.5  | 5.5  | 12.0                  | 12.0 | 12.0 |
| Russian Federation                     | 46.5                     | 46.5 | 46.5 | 51.7                     | 51.7 | 51.7 | 9.6                   | 9.6  | 9.6  | 23.6                  | 23.6 | 23.6 |
| San Marino                             | 57.6                     | 58.8 | 60.5 | 64.1                     | 65.4 | 67.4 | 13.5                  | 14.3 | 15.7 | 25.7                  | 27.2 | 29.7 |
| Serbia and Montenegro                  | 61.2                     | 61.2 | 61.2 | 48.5                     | 48.5 | 48.5 | 17.7                  | 17.7 | 17.7 | 20.6                  | 20.6 | 20.6 |
| Slovakia                               | 50.7                     | 52.0 | 54.0 | 59.1                     | 60.6 | 62.9 | 10.1                  | 10.8 | 12.0 | 21.3                  | 22.8 | 25.3 |
| Slovenia                               | 54.8                     | 56.0 | 57.9 | 62.1                     | 63.5 | 65.7 | 11.8                  | 12.5 | 13.9 | 23.7                  | 25.2 | 27.6 |
| Spain                                  | 55.7                     | 55.8 | 57.9 | 45.7                     | 47.7 | 49.8 | 15.6                  | 15.6 | 17.3 | 14.5                  | 15.8 | 17.3 |
| Sweden                                 | 51.7                     | 54.5 | 57.0 | 43.3                     | 44.9 | 47.2 | 10.1                  | 11.8 | 13.3 | 10.0                  | 10.9 | 12.4 |
| Switzerland                            | 52.4                     | 54.1 | 56.5 | 53.8                     | 56.7 | 58.9 | 11.4                  | 12.4 | 13.9 | 16.4                  | 18.7 | 20.6 |
| Tajikistan                             | 29.2                     | 30.8 | 33.5 | 41.8                     | 43.9 | 47.4 | 2.5                   | 2.9  | 3.6  | 9.2                   | 10.4 | 12.6 |
| Turkey                                 | 47.9                     | 47.9 | 47.9 | 65.4                     | 65.7 | 65.7 | 10.8                  | 10.8 | 10.8 | 32.1                  | 32.5 | 32.5 |
| Turkmenistan                           | 48.1                     | 48.1 | 48.1 | 45.5                     | 45.5 | 45.5 | 9.3                   | 9.3  | 9.3  | 15.0                  | 15.0 | 15.0 |
| Ukraine                                | 41.2                     | 41.2 | 41.2 | 48.5                     | 48.5 | 48.5 | 7.4                   | 7.4  | 7.4  | 19.4                  | 19.4 | 19.4 |
| United Kingdom                         | 62.5                     | 65.7 | 67.8 | 58.8                     | 61.9 | 63.8 | 18.7                  | 21.6 | 23.7 | 21.3                  | 24.2 | 26.3 |
| Uzbekistan                             | 42.0                     | 42.0 | 42.0 | 44.3                     | 49.9 | 49.9 | 7.1                   | 7.1  | 7.1  | 13.5                  | 17.6 | 17.6 |
| WHO North American Region              |                          |      |      |                          |      |      |                       |      |      |                       |      |      |
| Antigua and Barbuda                    | 50.0                     | 51.2 | 53.2 | 58.3                     | 59.8 | 62.1 | 10.4                  | 11.2 | 12.4 | 21.5                  | 22.9 | 25.3 |
| Bahamas                                | 55.9                     | 57.0 | 58.7 | 62.5                     | 63.8 | 65.9 | 13.9                  | 14.7 | 16.0 | 25.6                  | 27.1 | 29.5 |
| Barbados                               | 55.5                     | 59.2 | 65.1 | 77.8                     | 80.1 | 83.3 | 14.1                  | 16.8 | 22.0 | 46.7                  | 50.8 | 57.2 |
| Belize                                 | 43.3                     | 44.7 | 47.0 | 53.3                     | 54.9 | 57.6 | 7.3                   | 7.9  | 9.0  | 17.2                  | 18.6 | 21.0 |
| Canada                                 | 64.5                     | 65.1 | 66.9 | 55.9                     | 57.1 | 59.5 | 23.1                  | 23.7 | 25.5 | 22.2                  | 23.2 | 25.7 |
| Dominica                               | 61.5                     | 65.1 | 70.8 | 74.4                     | 77.1 | 80.8 | 16.9                  | 20.0 | 25.8 | 41.8                  | 46.0 | 52.6 |
| Grenada                                | 47.4                     | 48.7 | 50.8 | 56.4                     | 58.0 | 60.4 | 9.1                   | 9.8  | 11.0 | 19.8                  | 21.2 | 23.6 |
| Guyana                                 | 40.6                     | 42.1 | 44.4 | 51.2                     | 52.9 | 55.8 | 6.3                   | 6.8  | 7.9  | 15.6                  | 17.0 | 19.4 |
| Haiti                                  | 13.0                     | 15.1 | 19.0 | 39.8                     | 50.6 | 57.7 | 0.5                   | 0.7  | 1.3  | 8.2                   | 15.0 | 21.1 |
| Jamaica                                | 36.0                     | 40.0 | 46.8 | 71.8                     | 74.7 | 79.0 | 3.8                   | 5.1  | 7.7  | 36.4                  | 41.0 | 48.3 |
| Mexico                                 | 64.6                     | 68.4 | 73.6 | 65.6                     | 67.9 | 73.0 | 20.3                  | 24.0 | 30.1 | 31.6                  | 34.3 | 41.0 |
| Saint Kitts and Nevis                  | 50.7                     | 52.0 | 53.9 | 58.9                     | 60.3 | 62.6 | 10.8                  | 11.6 | 12.8 | 22.0                  | 23.4 | 25.8 |
| Saint Lucia                            | 41.3                     | 45.5 | 52.5 | 65.7                     | 69.1 | 74.1 | 5.0                   | 6.6  | 9.8  | 30.5                  | 34.7 | 41.7 |
| Saint Vincent and the Grenadines       | 44.3                     | 45.6 | 47.9 | 54.0                     | 55.7 | 58.3 | 7.7                   | 8.4  | 9.5  | 17.8                  | 19.2 | 21.6 |
| Trinidad and Tobago                    | 54.8                     | 58.9 | 65.2 | 74.4                     | 77.0 | 80.8 | 11.3                  | 14.0 | 19.1 | 41.9                  | 46.1 | 52.7 |
| United States of America               | 72.2                     | 75.6 | 80.5 | 69.8                     | 72.6 | 76.7 | 32.0                  | 36.5 | 44.2 | 37.8                  | 41.8 | 48.3 |
| WHO South and Central American Region  |                          |      |      |                          |      |      |                       |      |      |                       |      |      |
| Argentina                              | 70.1                     | 73.1 | 77.7 | 62.1                     | 65.7 | 71.2 | 28.0                  | 31.4 | 37.4 | 27.1                  | 31.0 | 37.8 |
| Bolivia                                | 52.5                     | 56.3 | 62.4 | 64.4                     | 68.0 | 73.2 | 12.2                  | 14.7 | 19.4 | 28.8                  | 33.1 | 40.2 |
| Brazil                                 | 43.4                     | 47.4 | 54.0 | 49.2                     | 53.5 | 60.3 | 6.9                   | 8.7  | 12.4 | 15.0                  | 18.3 | 24.5 |
| Chile                                  | 58.9                     | 62.6 | 68.4 | 64.4                     | 68.0 | 73.3 | 16.1                  | 19.0 | 24.3 | 27.2                  | 31.6 | 39.1 |
| Colombia                               | 52.7                     | 56.5 | 62.6 | 55.1                     | 54.6 | 61.1 | 12.4                  | 14.9 | 19.6 | 20.3                  | 19.9 | 26.1 |
| Costa Rica                             | 49.8                     | 53.9 | 60.1 | 56.2                     | 57.8 | 63.8 | 10.6                  | 13.0 | 17.5 | 22.7                  | 24.2 | 30.5 |
| Cuba                                   | 55.2                     | 59.2 | 65.4 | 57.0                     | 61.1 | 67.2 | 12.3                  | 14.9 | 20.1 | 20.7                  | 24.6 | 31.5 |
| Dominican Republic                     | 42.5                     | 46.6 | 53.4 | 62.8                     | 66.4 | 71.7 | 6.0                   | 7.7  | 11.2 | 27.8                  | 31.8 | 38.7 |
| Ecuador                                | 40.2                     | 41.7 | 44.0 | 50.9                     | 52.6 | 55.5 | 6.1                   | 6.7  | 7.7  | 15.4                  | 16.7 | 19.1 |
| El Salvador                            | 42.1                     | 43.5 | 45.8 | 52.3                     | 54.0 | 56.8 | 6.8                   | 7.4  | 8.5  | 16.5                  | 17.8 | 20.2 |
| Guatemala                              | 53.2                     | 56.9 | 62.9 | 61.1                     | 65.4 | 70.9 | 13.1                  | 15.7 | 20.5 | 25.0                  | 29.7 | 36.8 |
| Honduras                               | 36.2                     | 37.6 | 40.1 | 47.5                     | 49.4 | 52.5 | 4.7                   | 5.2  | 6.2  | 13.1                  | 14.4 | 16.7 |
| Nicaragua                              | 48.9                     | 52.9 | 59.4 | 62.9                     | 68.1 | 73.1 | 9.3                   | 11.5 | 15.9 | 28.3                  | 34.3 | 41.1 |
| Panama                                 | 45.2                     | 46.5 | 48.7 | 54.7                     | 56.3 | 58.9 | 8.1                   | 8.8  | 9.9  | 18.3                  | 19.8 | 22.2 |
| Paraguay                               | 40.9                     | 42.3 | 44.7 | 51.4                     | 53.2 | 56.0 | 6.4                   | 7.0  | 8.0  | 15.8                  | 17.2 | 19.6 |
| Peru                                   | 50.8                     | 54.6 | 60.9 | 62.7                     | 64.7 | 70.1 | 10.8                  | 13.2 | 17.7 | 28.9                  | 31.1 | 37.7 |
| Suriname                               | 41.0                     | 42.4 | 44.8 | 51.5                     | 53.2 | 56.1 | 6.4                   | 7.0  | 8.1  | 15.8                  | 17.2 | 19.6 |
| Uruguay                                | 60.0                     | 63.6 | 69.3 | 54.1                     | 58.1 | 64.4 | 17.1                  | 20.1 | 25.7 | 19.6                  | 23.3 | 29.8 |
| Venezuela                              | 65.6                     | 69.1 | 74.4 | 57.5                     | 61.4 | 67.3 | 19.7                  | 23.2 | 29.5 | 22.4                  | 26.2 | 33.0 |
| WHO South-East Asian Region            |                          |      |      |                          |      |      |                       |      |      |                       |      |      |
| Bangladesh                             | 5.9                      | 6.7  | 8.4  | 4.3                      | 5.4  | 6.7  | 0.1                   | 0.1  | 0.2  | 0.1                   | 0.2  | 0.2  |
| Bhutan                                 | 34.0                     | 35.3 | 37.7 | 44.7                     | 46.5 | 49.6 | 5.3                   | 5.8  | 6.7  | 13.1                  | 14.3 | 16.5 |
| India                                  | 15.0                     | 16.8 | 20.1 | 13.7                     | 15.2 | 18.1 | 0.9                   | 1.1  | 1.7  | 1.1                   | 1.4  | 2.0  |
| Maldives                               | 29.7                     | 32.3 | 36.6 | 45.7                     | 47.6 | 50.8 | 4.7                   | 5.7  | 7.7  | 20.2                  | 22.0 | 25.0 |
| Mauritius                              | 35.6                     | 39.0 | 44.8 | 49.5                     | 52.3 | 56.8 | 4.5                   | 5.6  | 8.0  | 16.1                  | 18.3 | 22.3 |
| Nepal                                  | 7.7                      | 8.8  | 11.0 | 8.0                      | 8.0  | 9.9  | 0.1                   | 0.2  | 0.3  | 0.2                   | 0.2  | 0.3  |
| Sri Lanka                              | 8.8                      | 8.9  | 9.1  | 5.0                      | 5.9  | 7.9  | 0.2                   | 0.2  | 0.2  | 0.1                   | 0.1  | 0.2  |
| WHO Western Pacific Region             |                          |      |      |                          |      |      |                       |      |      |                       |      |      |
| Australia                              | 69.7                     | 72.1 | 75.7 | 60.2                     | 62.7 | 66.5 | 21.2                  | 23.8 | 28.4 | 22.5                  | 24.9 | 29.1 |
| Cambodia                               | 9.6                      | 13.3 | 21.4 | 7.1                      | 9.3  | 13.8 | 0.1                   | 0.2  | 0.5  | 0.1                   | 0.1  | 0.4  |
| China                                  | 27.5                     | 33.1 | 45.0 | 22.7                     | 24.7 | 32.0 | 1.0                   | 1.6  | 4.1  | 1.5                   | 1.9  | 3.6  |
| Cook Islands                           | 92.0                     | 92.6 | 93.4 | 88.5                     | 89.2 | 90.3 | 67.9                  | 69.5 | 72.1 | 69.0                  | 70.8 | 73.4 |
| Fiji                                   | 42.7                     | 43.9 | 47.5 | 63.4                     | 65.6 | 69.5 | 7.8                   | 8.7  | 10.7 | 29.8                  | 32.5 | 37.1 |
| Indonesia                              | 9.6                      | 9.7  | 9.9  | 20.3                     | 22.7 | 27.1 | 0.2                   | 0.2  | 0.2  | 2.0                   | 2.6  | 3.9  |
| Japan                                  | 25.3                     | 27.0 | 29.8 | 18.6                     | 18.1 | 16.2 | 1.5                   | 1.8  | 2.3  | 1.5                   | 1.5  | 1.1  |
| Kiribati                               | 71.4                     | 73.2 | 76.1 | 71.9                     | 73.9 | 77.1 | 27.6                  | 29.8 | 33.6 | 37.9                  | 41.0 | 46.1 |
| Korea, Democratic People's Republic of | 31.0                     | 32.7 | 35.5 | 44.0                     | 46.2 | 49.7 | 2.4                   | 2.7  | 3.4  | 9.5                   | 10.7 | 12.9 |
| Korea, Republic of                     | 32.8                     | 40.2 | 51.5 | 38.2                     | 43.8 | 51.0 | 2.3                   | 4.1  | 8.3  | 7.2                   | 10.1 | 14.6 |
| Lao People's Democratic Republic       | 30.4                     | 32.1 | 34.9 | 43.5                     | 45.6 | 49.2 | 2.3                   | 2.6  | 3.3  | 9.2                   | 10.4 | 12.6 |
| Malaysia                               | 22.5                     | 22.7 | 23.0 | 34.2                     | 37.2 | 42.2 | 1.6                   | 1.6  | 1.7  | 6.8                   | 8.2  | 11.0 |
| Marshall Islands                       | 39.1                     | 40.6 | 43.0 | 50.0                     | 51.8 | 54.7 | 5.7                   | 6.3  | 7.3  | 14.8                  | 16.1 | 18.5 |
| Micronesia, Federated States of        | 91.5                     | 92.1 | 93.1 | 89.5                     | 90.1 | 91.1 | 64.3                  | 66.2 | 69.1 | 71.3                  | 72.9 | 75.3 |
| Mongolia                               | 46.0                     | 53.0 | 64.1 | 65.8                     | 69.3 | 74.4 | 5.2                   | 7.9  | 14.5 | 24.6                  | 29.0 | 36.6 |
| Myanmar                                | 27.8                     | 29.4 | 32.3 | 41.1                     | 43.3 | 47.0 | 1.8                   | 2.1  | 2.7  | 8.0                   | 9.1  | 11.3 |
| Nauru                                  | 96.3                     | 96.5 | 96.9 | 92.0                     | 92.4 | 93.0 | 82.3                  | 83.2 | 84.6 | 77.7                  | 78.8 | 80.5 |
| New Zealand                            | 65.2                     | 68.7 | 73.9 | 64.0                     | 68.2 | 74.2 | 19.7                  | 23.0 | 28.9 | 26.7                  | 31.5 | 39.9 |
| Niue                                   | 76.9                     | 78.5 | 80.9 | 83.8                     | 85.0 | 86.7 | 34.4                  | 36.8 | 40.7 | 58.6                  | 61.0 | 64.7 |
| Palau                                  | 72.7                     | 74.5 | 77.2 | 81.0                     | 82.4 | 84.5 | 29.0                  | 31.2 | 35.0 | 52.2                  | 55.0 | 59.4 |
| Papua New Guinea                       | 29.2                     | 31.5 | 35.3 | 26.1                     | 29.0 | 34.0 | 2.0                   | 2.5  | 3.4  | 3.2                   | 4.2  | 6.1  |
| Philippines                            | 21.7                     | 21.9 | 22.2 | 25.4                     | 28.5 | 33.6 | 1.1                   | 1.1  | 1.1  | 2.8                   | 3.7  | 5.5  |
| Samoa                                  | 77.2                     | 78.7 | 81.1 | 80.7                     | 82.1 | 84.1 | 36.2                  | 38.4 | 42.2 | 55.0                  | 57.3 | 60.9 |
| Singapore                              | 23.6                     | 23.8 | 24.1 | 20.7                     | 22.0 | 26.7 |                       |      |      |                       |      |      |

Figure 11.14a Prevalence of obesity by sex, 2002, WHO European Region

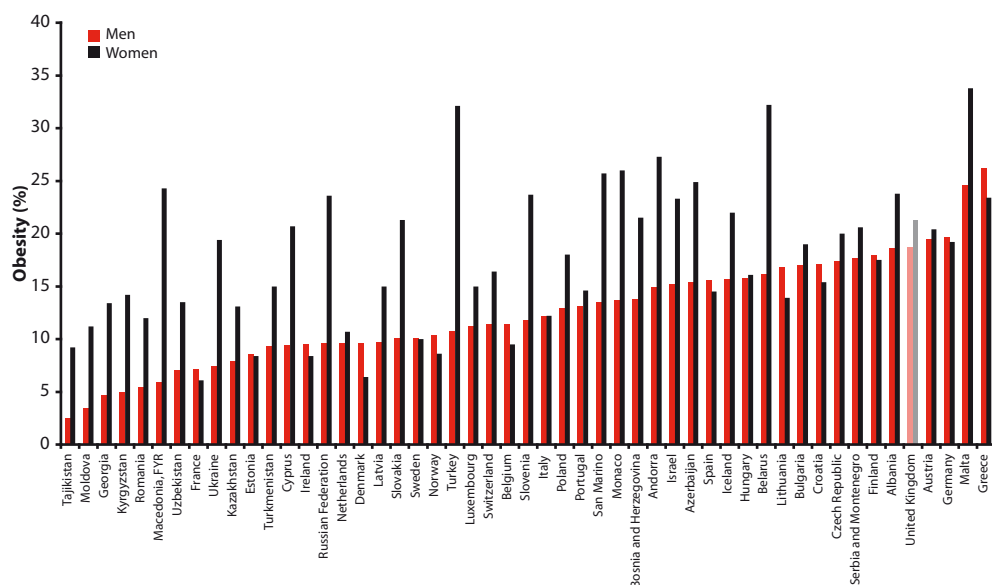


Figure 11.14b Prevalence of obesity by sex, 2002, selected countries, the World

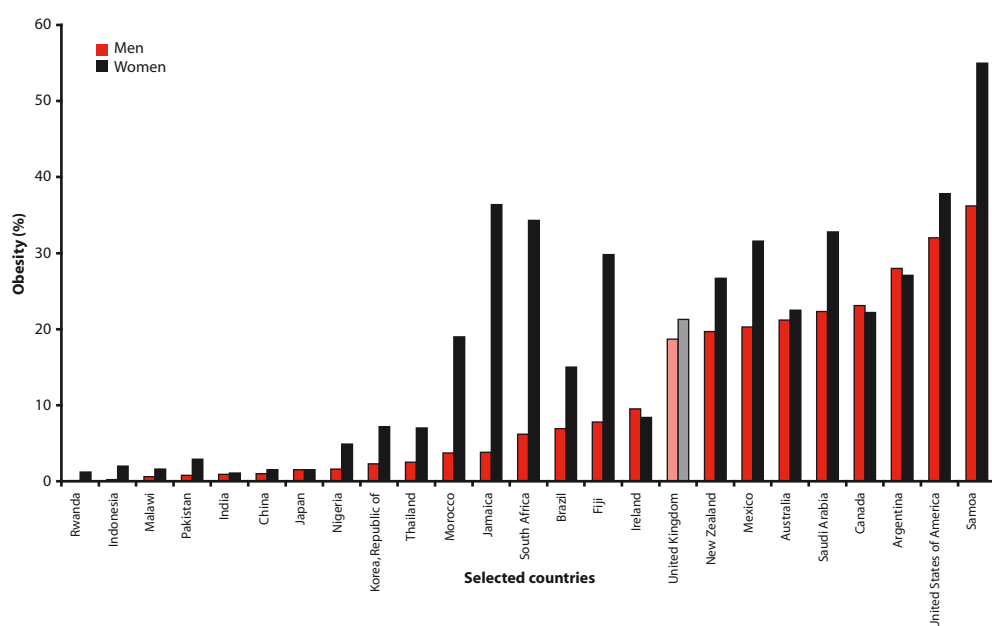


*Table 11.15 Prevalence of overweight and obese children by WHO Region and country, by sex, latest available year, the World*

|                                  | Year of Survey    | Age Range<br>Years (inclusive) | Overweight (including obesity) |       | Cut Off             |
|----------------------------------|-------------------|--------------------------------|--------------------------------|-------|---------------------|
|                                  |                   |                                | Boys                           | Girls |                     |
|                                  |                   |                                |                                |       |                     |
| WHO Africa Region                |                   |                                |                                |       |                     |
| Algeria                          | 2003              | 7-17                           | 6.0                            | 5.6   | IOTF                |
| Ethiopia                         | 1987-1995         | 5-17                           | 0.1                            | 0.4   | IOTF                |
| Mali                             | 1993              | 5-17                           | 0.2                            | 0.5   | IOTF                |
| Senegal                          | 1992              | 5-17                           | 0.1                            | 0.5   | IOTF                |
| Seychelles                       | 1999              | 5,9,12 & 16                    | 9.2                            | 15.8  | IOTF                |
| Zimbabwe                         | 1990-4            | 5-17                           | 1.7                            | 2.4   | IOTF                |
| WHO Americas Region              |                   |                                |                                |       |                     |
| Bolivia (urban)                  | 2003              | 14-17                          | 15.6                           | 27.5  | IOTF                |
| Brazil                           | 2002              | 7-10                           | 23.0                           | 21.1  | IOTF                |
| Canada                           | 1996              | 7-13                           | 33.0                           | 27.0  | IOTF                |
| Chile                            | 2000              | 6                              | 26.0                           | 27.1  | IOTF                |
| Mexico                           | 1995              | 5-17                           | 32.3                           | 31.1  | IOTF                |
| Trinidad & Tobago                | 1999              | 5,6,9 & 10                     | 8.1                            | 8.8   | IOTF                |
| USA                              | 1988-94           | 5-17                           | 26.8                           | 28.1  | IOTF                |
| Venezuela                        | 1976-82           | 10 & 15                        | 21.1                           | 17.2  | IOTF                |
| WHO Eastern Mediterranean Region |                   |                                |                                |       |                     |
| Bahrain                          | 2000              | 12-17                          | 29.9                           | 38.5  | IOTF                |
| Iran                             | 1995              | 6                              | 24.7                           | 26.8  | IOTF                |
| Kuwait                           | 1999-2000         | 10-14                          | 30.0                           | 31.8  | 85th/95th centile   |
| Lebanon                          | 1996              | 5-17                           | 23.4                           | 19.7  | IOTF                |
| Saudi Arabia                     | 2002              | 5-17                           | 16.7                           | 19.4  | IOTF                |
| WHO European Region              |                   |                                |                                |       |                     |
| Austria                          | 2003              | 8-12                           | 22.5                           | 16.7  | 90/97th centile     |
| Belgium                          | 1998-9            | 5-15                           | 27.7                           | 26.8  | 85/95th centile     |
| Bulgaria                         | 1998              | 7-17                           | 18.9                           | 16.1  | IOTF                |
| Cyprus                           | 1999-2000         | 6-17                           | 25.4                           | 22.6  | IOTF                |
| Czech Republic                   | 2001              | 5-17                           | 14.7                           | 13.4  | IOTF                |
| Denmark                          | 1996/7            | 6-16                           | 14.1                           | 15.3  | IOTF                |
| Finland (self report)            | 1999              | 12-17                          | 19.4                           | 11.2  | IOTF                |
| France                           | 2000 (12yrs 2001) | 7,8,9&12                       | 19.1                           | 19.3  | IOTF                |
| Germany                          | 1995              | 5-17                           | 14.1                           | 14.0  | IOTF                |
| Greece                           | 2003              | 13-17                          | 29.6                           | 16.1  | IOTF                |
| Hungary                          | 1993-4            | 10 & 15                        | 17.8                           | 15.9  | IOTF                |
| Iceland                          | 1998              | 9                              | 22.0                           | 25.5  | IOTF                |
| Italy                            | 1993-2001         | 5-17                           | 26.6                           | 24.8  | IOTF                |
| Macedonia, FYR                   | 1995-2002         | 6-17                           | 18.6                           | 16.7  | 85th & 95th centile |
| Malta                            | 1992              | 10                             | 32.7                           | 38.5  | IOTF                |
| Netherlands                      | 1997              | 5-17                           | 8.8                            | 11.8  | IOTF                |
| Poland                           | 1996              | 5-17                           | 16.7                           | 13.6  | IOTF                |
| Portugal                         | 2002/3            | 7-9                            | 29.5                           | 34.3  | IOTF                |
| Russian Federation               | 1992              | 5-17                           | 24.2                           | 19.7  | IOTF                |
| Slovakia                         | 1995-99           | 11-17                          | 9.8                            | 8.2   | IOTF                |
| Spain                            | 1998-2000         | 5-16                           | 31.0                           | 19.5  | IOTF                |
| Sweden                           | 2001              | 6-11                           | 17.6                           | 27.4  | IOTF                |
| Switzerland                      | 2002              | 6-12                           | 21.0                           | 23.2  | IOTF                |
| Turkey                           | 2001              | 12-17                          | 11.4                           | 10.3  | IOTF                |
| United Kingdom (England)         | 2001              | 5-17                           | 21.8                           | 27.1  | IOTF                |
| WHO South East Asia Region       |                   |                                |                                |       |                     |
| India                            | 2002 approx       | 5-17 (5-15 girls)              | 12.9                           | 8.2   | IOTF                |
| Nepal                            | 1997              | 5-17                           | 0.0                            | 0.0   | IOTF                |
| Thailand                         | 1997              | 5-15                           | 21.1                           | 12.6  | IOTF                |
| WHO Western Pacific Region       |                   |                                |                                |       |                     |
| Australia                        | 1995              | 7-17                           | 21.1                           | 21.3  | IOTF                |
| Japan                            | 1996-2000         | 6-14                           | 16.2                           | 14.3  | IOTF                |
| Singapore                        | 1993              | 10 & 15                        | 20.4                           | 14.6  | IOTF                |
| China                            | 1999-2000         | 11 & 15                        | 14.9                           | 8.0   | IOTF                |
| New Zealand                      | 2000              | 11 & 12                        | 30.0                           | 30.0  | IOTF                |

Source: International Obesity TaskForce (2006). <http://www.iotf.org/database/ChildhoodTablebyRegionFeb06.htm>

# 12. Diabetes

Diabetes substantially increases the risk of CHD. Men with non-insulin dependent (Type 2) diabetes have a two to fourfold greater annual risk of CHD, with an even higher (three to fivefold) risk in women with Type 2 diabetes<sup>1</sup>.

Diabetes not only increases the risk of CHD but also magnifies the effect of other risk factors for CHD such as raised cholesterol levels, raised blood pressure, smoking and obesity. There are two main types of diabetes: Type 1 and Type 2 diabetes<sup>2</sup>.

The recent INTERHEART case-control study estimated that 15% of heart attacks in Western Europe and 9% of heart attacks in Central and Eastern Europe are due to diagnosed diabetes, and that people with diagnosed diabetes are at three times the risk of a heart attack compared to those without<sup>3</sup>.

## *Overall prevalence of diabetes*

Over 4% of men and 3% of women in England have diagnosed diabetes (Table 12.1)<sup>4</sup>.

Using the age and sex-specific prevalence rates from the Health Survey for England we estimate that there are just over 1.9 million adults with diagnosed diabetes in the UK<sup>5</sup>.

However, not all diabetes is diagnosed. The Health Survey for England 2003 suggests that 3% of men and 0.7% of women aged 35 and over have undiagnosed diabetes (Table 12.2).

From these prevalence rates we estimate that there are around 595,000 adults with undiagnosed diabetes in the UK<sup>5</sup>. This means there are around 2.5 million adults in the UK with diabetes today.

## *Age and sex differences*

For both men and women, the proportion of people with diabetes increases with age. The Health Survey for England 2003 suggests that less than 0.5% of men aged 16 to 34 years have diagnosed diabetes compared with 10% of those aged 75 and over (Table 12.1 and Figure 12.1). This pattern is similar in women, although rates are slightly lower at most ages than for men.

## *Temporal trends*

The prevalence of diabetes is increasing. Since 1991, the prevalence of diagnosed diabetes has more than doubled in men and increased by 80% in women (Table 12.3 and Figure 12.3).

Extrapolating from the Health Survey for England data (Table 12.3) it is suggested that the prevalence of diagnosed diabetes in the UK will be about 7% for adult men and 5% for adult women by the year 2010. This would equate to approximately three million people with diagnosed diabetes.

## *National and regional differences*

The prevalence of diagnosed diabetes varies by Government Office Region in England for both men and women (Table 12.4). The age-standardised prevalence is highest for men (5.4%) and women (4.4%) in London, and lowest for men in the South West (2.8%) and for women in the North East (2.5%).

## *Socio-economic differences*

Diabetes prevalence is also related to socio-economic position (Table 12.5). In the Health Survey for England 2003, men and women in managerial and professional and intermediate households had a lower prevalence of diagnosed diabetes than those from other households. In women, for example, the prevalence was around twice as high in those living in manual compared to non-manual households (Table 12.5). Men and women living in households with the highest incomes had the lowest prevalence of diagnosed diabetes (Table 12.6).

## *Ethnic differences*

The prevalence of diabetes in 2004 was much higher among some ethnic minority communities than in the general population. In Black Caribbean and Indian men, the prevalence of diagnosed diabetes was more than twice that found in the general population. The prevalence for Black Caribbean and Pakistani women was two and a half times that of the general population. However, the prevalence for Black African and Irish women was substantially lower than for the general population (Table 12.7 and Figure 12.7).

## *International differences*

Diabetes is now one of the most common non-communicable diseases globally. The International Diabetes Federation estimates that there are currently about 194 million people aged 20 to 79 with diabetes worldwide and that this will increase to 333 million by 2025 (Table 12.8).

Prevalence rates in the UK are average for developed countries (Table 12.8 and Figure 12.8). In general developed countries currently have higher rates than developing countries (Figure 12.8).

1. Garcia MJ, McNamara PM, Gordon T, Kannell WB (1974). Morbidity and mortality in the Framingham population. Sixteen year follow-up. *Diabetes*; 23:105-111.
2. Diabetes is characterised by high blood glucose levels. It arises when the pancreas fails to make enough insulin or when the body cannot effectively make use of the insulin produced or both. The chronic high blood glucose levels (hyperglycaemia) that result are associated with long-term damage, dysfunction and failure of various organs, especially the eyes, kidneys, nerves, heart and blood vessels. Type 1 diabetes results from an autoimmune destruction of the cells in the pancreas which produce insulin. People with Type 1 diabetes must take daily injections of insulin for survival. Type 2 diabetes, which accounts for about 90% of all diabetes, is characterised by an inability on the part of the body to respond to insulin (insulin resistance) and/or abnormal insulin secretion. People with Type 2 diabetes are not usually treated with insulin. There are a number of other less common types of diabetes including gestational diabetes. This occasionally occurs during pregnancy in women not previously diagnosed with diabetes and is a marker of greater risk of developing Type 2 diabetes in later life.
3. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, McQueen M, Budaj A, Pais P, Varigo J, Lisheng A, on behalf of the INTERHEART Study Investigators (2004) Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART Study): case-control study. *The Lancet*; 364: 937-952.
4. Determining the prevalence of diabetes in the population is difficult. The best source of data on the prevalence of diabetes is the Health Survey for England and this relies on self reports of doctor diagnosed diabetes (Type 1 and Type 2 combined). These national survey data are likely to underestimate the true prevalence of diabetes, as those people who have the disease but have not yet been diagnosed will be omitted from the figures. For further data on overall prevalence, together with data on mortality from diabetes, morbidity from diabetes, prevalence of risk factors for CVD in people with diabetes, and the treatment and prevention of CVD in people with diabetes, see the British Heart Foundation's Diabetes supplement. Rayner M, Petersen S, Buckley C and Press V (2001) Coronary heart disease statistics: diabetes supplement, BHF: London. See [www.heartstats.org](http://www.heartstats.org)
5. These estimates are derived from applying age-specific rates to the UK population estimates for 2005, and supersede our estimates in previous publications (e.g. Petersen S, Peto V and Rayner M (2004) Coronary heart disease statistics. British Heart Foundation: London).

*Table 12.1 Prevalence of diagnosed diabetes by sex and age, 2003, England*

|              | All ages<br>% | 16-24<br>% | 25-34<br>% | 35-44<br>% | 45-54<br>% | 55-64<br>% | 65-74<br>% | 75+<br>% |
|--------------|---------------|------------|------------|------------|------------|------------|------------|----------|
| <b>MEN</b>   | 4.3           | 0.4        | 0.3        | 2.8        | 3.6        | 8.1        | 11.9       | 10.0     |
| <i>Base</i>  | 7,202         | 1,047      | 1,274      | 1,416      | 1,185      | 1,043      | 731        | 507      |
| <b>WOMEN</b> | 3.4           | 0.9        | 0.9        | 1.5        | 2.6        | 4.7        | 8.4        | 8.9      |
| <i>Base</i>  | 7,634         | 1,034      | 1,285      | 1,440      | 1,200      | 1,074      | 816        | 785      |

*Notes:* Self-reported diagnosis of either Type 1 or Type 2 diabetes.

*Source:* Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

*Figure 12.1 Prevalence of diagnosed diabetes by sex and age, 2003, England*

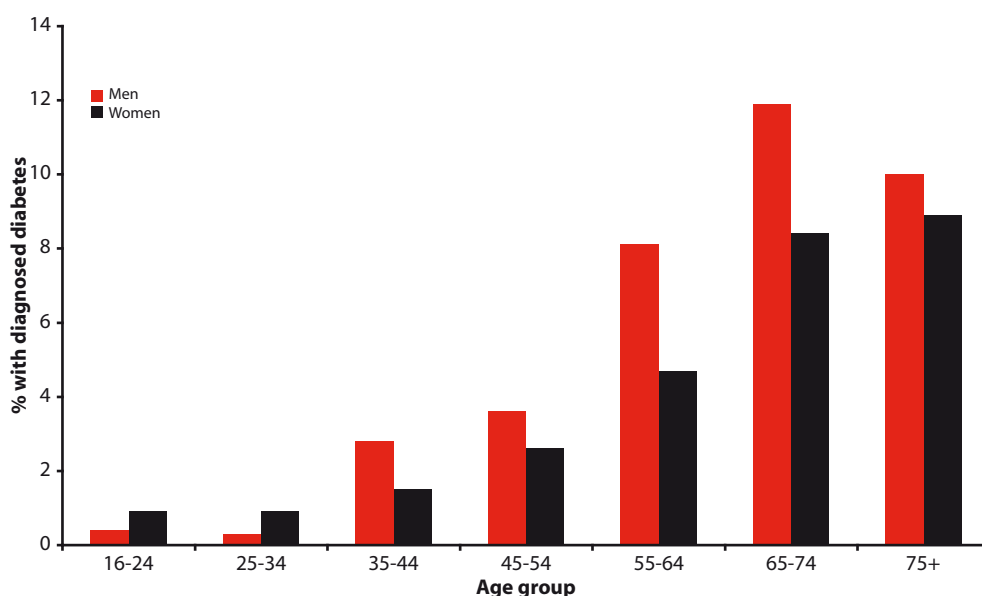


*Table 12.2 Prevalence of undiagnosed diabetes by sex and age, adults aged 35 and over, 2003, England*

|              | All ages<br>% | 35-44<br>% | 45-64<br>% | 65+<br>% |
|--------------|---------------|------------|------------|----------|
| <b>MEN</b>   | 3.0           | 0.0        | 2.3        | 6.9      |
| <i>Base</i>  | 334           | 97         | 146        | 91       |
| <b>WOMEN</b> | 0.7           | 0.8        | 0.0        | 1.9      |
| <i>Base</i>  | 367           | 100        | 163        | 104      |

*Notes:* Undiagnosed diabetes defined as prevalence of glucose  $\geq 7\text{mmol/l}$  without doctor-diagnosed diabetes.

*Source:* Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 12.3** *Prevalence of diagnosed diabetes by sex and age, 1991 to 2003, England*

|                        | All ages<br>% | 16-24<br>% | 25-34<br>% | 35-44<br>% | 45-54<br>% | 55-64<br>% | 65-74<br>% | 75+<br>% |
|------------------------|---------------|------------|------------|------------|------------|------------|------------|----------|
| <b>MEN</b>             |               |            |            |            |            |            |            |          |
| 1991                   | 2.0           | 0.0        | 0.0        | 0.0        | 1.0        | 4.0        | 6.0        | 7.0      |
| 1993                   | 3.0           | 0.0        | 1.0        | 1.0        | 3.0        | 6.0        | 7.0        | 8.0      |
| 1994                   | 2.9           | 0.8        | 0.8        | 1.0        | 2.5        | 6.4        | 5.8        | 7.5      |
| 1998                   | 3.3           | 0.1        | 0.7        | 1.6        | 2.9        | 5.8        | 7.0        | 8.7      |
| 2003 (unweighted)      | 4.8           | 0.4        | 0.4        | 2.6        | 3.5        | 8.0        | 11.8       | 9.9      |
| 2003 (weighted)        | 4.3           | 0.4        | 0.3        | 2.8        | 3.6        | 8.1        | 11.9       | 10.0     |
| Base 2003 (unweighted) | 6,602         | 746        | 1,025      | 1,263      | 1,101      | 1,103      | 807        | 557      |
| Base 2003 (weighted)   | 7,202         | 1,047      | 1,274      | 1,416      | 1,185      | 1,043      | 731        | 507      |
| <b>WOMEN</b>           |               |            |            |            |            |            |            |          |
| 1991                   | 2.0           | 0.0        | 1.0        | 1.0        | 2.0        | 4.0        | 6.0        | 5.0      |
| 1993                   | 2.0           | 0.0        | 1.0        | 1.0        | 2.0        | 4.0        | 5.0        | 5.0      |
| 1994                   | 1.9           | 0.6        | 0.3        | 0.9        | 1.5        | 2.5        | 4.8        | 5.2      |
| 1998                   | 2.5           | 0.8        | 0.7        | 0.9        | 1.6        | 3.1        | 6.6        | 6.6      |
| 2003 (unweighted)      | 3.6           | 0.8        | 0.9        | 1.5        | 2.5        | 4.7        | 8.3        | 8.9      |
| 2003 (weighted)        | 3.4           | 0.9        | 0.9        | 1.5        | 2.6        | 4.7        | 8.4        | 8.9      |
| Unweighted base 2003   | 8,234         | 890        | 1,285      | 1,618      | 1,279      | 1,307      | 952        | 903      |
| Weighted base 2003     | 7,634         | 1,034      | 1,285      | 1,440      | 1,200      | 1,074      | 816        | 785      |

Notes: Self-reported diagnosis of either Type 1 or Type 2 diabetes.

Weighted data provide the best estimate for 2003. However, for looking at trends, unweighted data for 2003 are more consistent with previous years which are also unweighted.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Figure 12.3** *Prevalence of diagnosed diabetes in adults, 1991 to 2003, England*

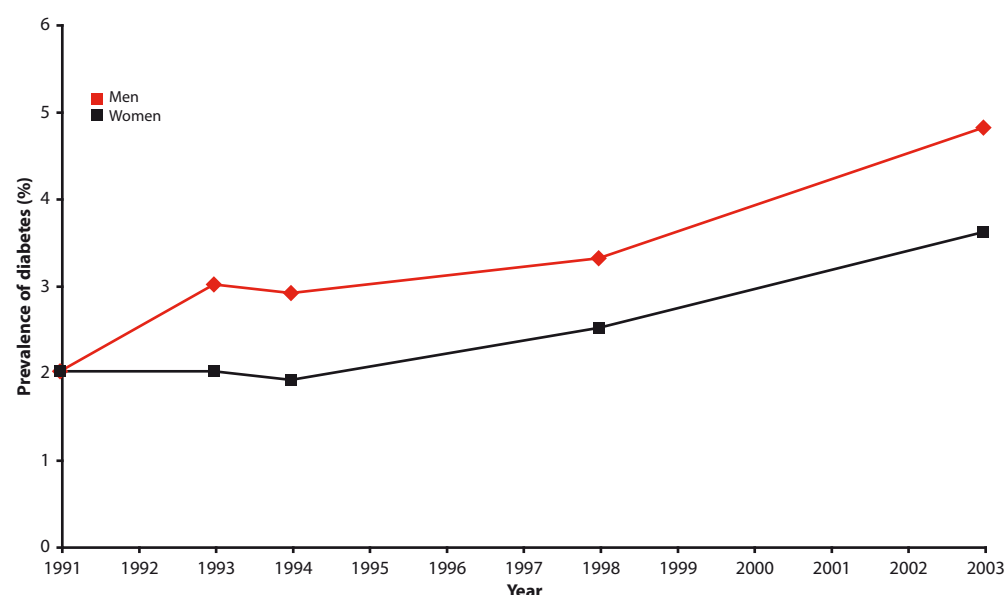


**Table 12.4 Age-standardised prevalence of diagnosed diabetes by sex and Government Office Region, 2003, England**

| Doctor-diagnosed diabetes | Government Office Region |            |                          |               |               |              |        |            |            |
|---------------------------|--------------------------|------------|--------------------------|---------------|---------------|--------------|--------|------------|------------|
|                           | North East               | North West | Yorkshire and the Humber | East Midlands | West Midlands | East England | London | South East | South West |
|                           | %                        | %          | %                        | %             | %             | %            | %      | %          | %          |
| MEN                       | 3.1                      | 3.3        | 3.5                      | 3.7           | 4.9           | 4.8          | 5.4    | 2.9        | 2.8        |
| Weighted base             | 368                      | 963        | 712                      | 635           | 770           | 815          | 1,077  | 1,153      | 709        |
| WOMEN                     | 2.5                      | 2.7        | 2.8                      | 3.5           | 3.8           | 3.7          | 4.4    | 3.2        | 2.7        |
| Weighted base             | 416                      | 1,025      | 769                      | 660           | 817           | 844          | 1,102  | 1,233      | 769        |

Notes: Adults aged 16 and over.

Source: Department of Health (2004) Health Survey for England 2003. The Stationery Office: London.

**Table 12.5** *Age-standardised prevalence of diagnosed diabetes by sex and socio-economic classification, 2003, England*

| <i>Doctor-diagnosed diabetes</i> | <i>NS-SEC of household reference person</i> |                     |                                                  |                                          |                                   |
|----------------------------------|---------------------------------------------|---------------------|--------------------------------------------------|------------------------------------------|-----------------------------------|
|                                  | <i>Managerial &amp; professional</i>        | <i>Intermediate</i> | <i>Small employers &amp; own account workers</i> | <i>Lower supervisory &amp; technical</i> | <i>Semi-routine &amp; routine</i> |
|                                  | %                                           | %                   | %                                                | %                                        | %                                 |
| <b>MEN</b>                       | 3.6                                         | 2.6                 | 4.1                                              | 3.5                                      | 4.1                               |
| <i>Weighted base</i>             | 2,932                                       | 507                 | 829                                              | 971                                      | 1,822                             |
| <b>WOMEN</b>                     | 2.6                                         | 1.6                 | 4.2                                              | 4.3                                      | 4.0                               |
| <i>Weighted base</i>             | 2,900                                       | 716                 | 755                                              | 876                                      | 2,160                             |

*Notes:* Adults aged 16 and over.

*Source:* Department of Health (2004) *Health Survey for England 2003*. The Stationery Office: London.

**Table 12.6** *Age-standardised prevalence of diagnosed diabetes by sex and household income, 2003, England*

|                      | <i>Equivalised household income quintile</i> |            |            |            |                |
|----------------------|----------------------------------------------|------------|------------|------------|----------------|
|                      | <i>Lowest</i>                                | <i>2nd</i> | <i>3rd</i> | <i>4th</i> | <i>Highest</i> |
|                      | %                                            | %          | %          | %          | %              |
| <b>MEN</b>           | 6.1                                          | 6.0        | 4.2        | 3.2        | 2.3            |
| <i>Weighted base</i> | 1,036                                        | 973        | 1,280      | 1,419      | 1,390          |
| <b>WOMEN</b>         | 4.0                                          | 4.5        | 2.7        | 2.4        | 1.7            |
| <i>Weighted base</i> | 1,285                                        | 1,134      | 1,424      | 1,365      | 1,172          |

*Notes:* Adults aged 16 and over.

*Source:* Department of Health (2004) *Health Survey for England 2003*. The Stationery Office: London.

**Table 12.7** *Prevalence of diagnosed diabetes by sex and ethnic group, 2004, England*

|                        | General population | Black Caribbean | Black African | Indian | Pakistani | Bangladeshi | Chinese | Irish |
|------------------------|--------------------|-----------------|---------------|--------|-----------|-------------|---------|-------|
| <b>MEN</b>             | %                  | %               | %             | %      | %         | %           | %       | %     |
| Type 1                 | 0.6                | 0.5             | 0.7           | 0.9    | n/a       | 0.2         | 0.3     | n/a   |
| Type 2                 | 3.8                | 9.5             | 4.3           | 9.2    | 7.3       | 8.0         | 3.4     | 3.6   |
| Types 1 and 2 combined | 4.3                | 10.0            | 5.0           | 10.1   | 7.3       | 8.2         | 3.8     | 3.6   |
| <i>Unweighted base</i> | 6,602              | 414             | 390           | 550    | 433       | 411         | 348     | 497   |
| <b>WOMEN</b>           |                    |                 |               |        |           |             |         |       |
| Type 1                 | 0.3                | 0.8             | 0.1           | n/a    | 0.2       | 0.6         | n/a     | 0.3   |
| Type 2                 | 3.1                | 7.6             | 2.0           | 5.9    | 8.4       | 4.5         | 3.3     | 2.0   |
| Types 1 and 2 combined | 3.4                | 8.4             | 2.1           | 5.9    | 8.6       | 5.2         | 3.3     | 2.3   |
| <i>Unweighted base</i> | 8,234              | 653             | 469           | 634    | 508       | 478         | 375     | 656   |

Notes: Numbers may not add exactly due to rounding. Type 1 diabetes defined as doctor-diagnosed diabetes with diagnosis age <35 and currently on insulin.

General Population data taken from Health Survey for England 2003.

Source: Department of Health (2005) Health Survey for England 2004. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>

**Figure 12.7** *Prevalence of diagnosed diabetes by ethnic group, 2004, England*

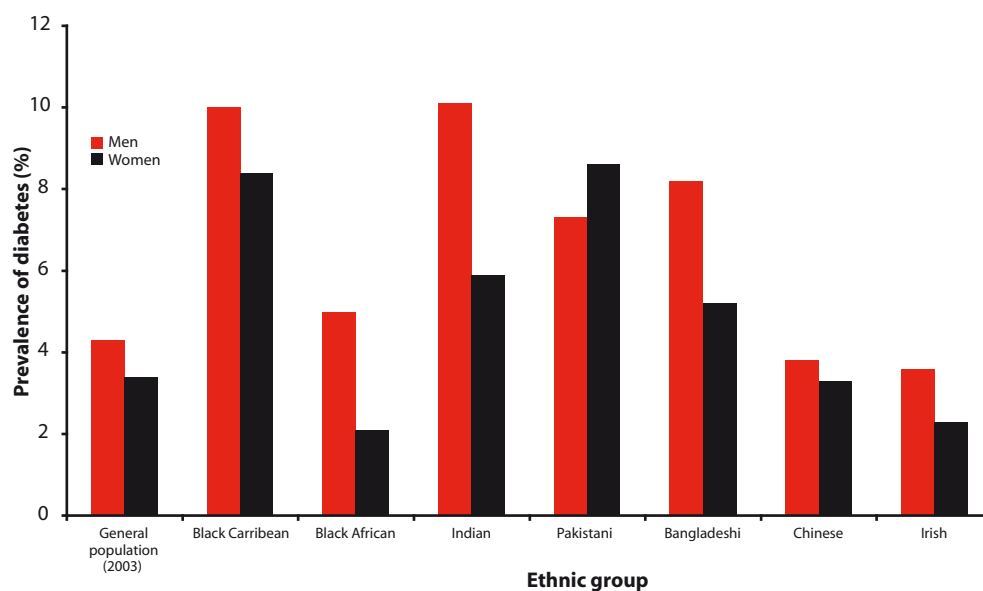


**Table 12.8** *Estimated prevalence of diabetes and number of people with diabetes, 2003 and 2025, selected countries, the World*

|                                                             | 2003<br>Population<br>Aged 20-79<br>(000s) | Men<br>(000s) | Women<br>(000s) | Numbers with diabetes<br>Total<br>(000s) | Crude<br>prevalence<br>% | 2025<br>Population<br>Aged 20-79<br>(000s) | Men<br>(000s)  | Women<br>(000s) | Numbers with diabetes<br>Total<br>(000s) | Crude<br>prevalence<br>% |
|-------------------------------------------------------------|--------------------------------------------|---------------|-----------------|------------------------------------------|--------------------------|--------------------------------------------|----------------|-----------------|------------------------------------------|--------------------------|
| <b>World</b>                                                | <b>3,822,720</b>                           | <b>92,455</b> | <b>101,646</b>  | <b>194,195</b>                           | <b>5.1</b>               | <b>5,250,955</b>                           | <b>158,117</b> | <b>174,552</b>  | <b>332,749</b>                           | <b>6.3</b>               |
| <b>WHO Africa Region</b>                                    | <b>295,065</b>                             | <b>3,580</b>  | <b>3,491</b>    | <b>7,072</b>                             | <b>2.4</b>               | <b>541,140</b>                             | <b>7,870</b>   | <b>7,171</b>    | <b>15,041</b>                            | <b>2.8</b>               |
| Angola                                                      | 5,846                                      | 84            | 73              | 157                                      | 2.7                      | 11,873                                     | 206            | 177             | 383                                      | 3.2                      |
| Benin                                                       | 2,911                                      | 33            | 30              | 63                                       | 2.1                      | 5,851                                      | 74             | 69              | 143                                      | 2.4                      |
| Botswana                                                    | 716                                        | 9             | 17              | 26                                       | 3.6                      | 1,011                                      | 15             | 21              | 36                                       | 3.5                      |
| Burkina Faso                                                | 4,969                                      | 68            | 67              | 135                                      | 2.7                      | 10,920                                     | 106            | 99              | 205                                      | 1.9                      |
| Burundi                                                     | 2,860                                      | 19            | 19              | 38                                       | 1.3                      | 5,534                                      | 53             | 45              | 98                                       | 1.8                      |
| Cameroon                                                    | 7,278                                      | 24            | 35              | 58                                       | 0.8                      | 12,625                                     | 65             | 83              | 148                                      | 1.2                      |
| Cape Verde                                                  | 228                                        | 2             | 3               | 5                                        | 2.3                      | 412                                        | 6              | 7               | 13                                       | 3.2                      |
| Central African Republic                                    | 1,780                                      | 21            | 20              | 41                                       | 2.3                      | 2,988                                      | 37             | 35              | 72                                       | 2.4                      |
| Chad                                                        | 3,674                                      | 39            | 62              | 101                                      | 2.7                      | 7,349                                      | 82             | 126             | 208                                      | 2.8                      |
| Comoros                                                     | 355                                        | 5             | 4               | 9                                        | 2.5                      | 715                                        | 14             | 11              | 25                                       | 3.5                      |
| Congo, Democratic Republic of                               | 22,436                                     | 295           | 257             | 552                                      | 2.5                      | 49,259                                     | 799            | 673             | 1,472                                    | 3.0                      |
| Congo, Republic of                                          | 1,403                                      | 18            | 18              | 36                                       | 2.6                      | 2,823                                      | 38             | 36              | 74                                       | 2.6                      |
| Cote d'Ivoire                                               | 7,959                                      | 107           | 79              | 186                                      | 2.3                      | 13,673                                     | 182            | 138             | 320                                      | 2.3                      |
| Djibouti                                                    | 300                                        | 5             | 10              | 15                                       | 4.9                      | 378                                        | 4              | 10              | 13                                       | 3.5                      |
| Equatorial Guinea                                           | 226                                        | 3             | 3               | 6                                        | 2.5                      | 430                                        | 6              | 6               | 11                                       | 2.7                      |
| Eritrea                                                     | 1,906                                      | 20            | 17              | 36                                       | 1.9                      | 3,628                                      | 51             | 43              | 94                                       | 2.6                      |
| Ethiopia                                                    | 29,562                                     | 299           | 251             | 550                                      | 1.9                      | 52,442                                     | 693            | 568             | 1,260                                    | 2.4                      |
| Gabon                                                       | 647                                        | 10            | 9               | 19                                       | 2.9                      | 1,095                                      | 16             | 15              | 31                                       | 2.8                      |
| Gambia                                                      | 703                                        | 8             | 7               | 15                                       | 2.2                      | 1,167                                      | 16             | 14              | 30                                       | 2.6                      |
| Ghana                                                       | 9,986                                      | 185           | 149             | 334                                      | 3.3                      | 17,839                                     | 408            | 316             | 724                                      | 4.1                      |
| Guinea                                                      | 3,855                                      | 43            | 36              | 79                                       | 2.0                      | 7,131                                      | 93             | 78              | 171                                      | 2.4                      |
| Guinea-Bissau                                               | 588                                        | 6             | 6               | 12                                       | 2.0                      | 1,036                                      | 12             | 11              | 22                                       | 2.2                      |
| Kenya                                                       | 14,604                                     | 194           | 166             | 360                                      | 2.5                      | 25,033                                     | 473            | 388             | 861                                      | 3.4                      |
| Lesotho                                                     | 1,040                                      | 12            | 20              | 32                                       | 3.1                      | 1,195                                      | 14             | 21              | 35                                       | 2.9                      |
| Liberia                                                     | 1,573                                      | 17            | 15              | 32                                       | 2.0                      | 3,300                                      | 44             | 36              | 80                                       | 2.4                      |
| Madagascar                                                  | 7,782                                      | 104           | 88              | 192                                      | 2.5                      | 15,397                                     | 277            | 230             | 507                                      | 3.3                      |
| Malawi                                                      | 5,131                                      | 47            | 41              | 87                                       | 1.7                      | 8,961                                      | 109            | 87              | 196                                      | 2.2                      |
| Mali                                                        | 5,231                                      | 56            | 51              | 107                                      | 2.0                      | 10,339                                     | 124            | 107             | 231                                      | 2.2                      |
| Mauritania                                                  | 1,309                                      | 18            | 28              | 46                                       | 3.5                      | 2,590                                      | 41             | 61              | 101                                      | 3.9                      |
| Mozambique                                                  | 8,681                                      | 142           | 124             | 267                                      | 3.1                      | 13,773                                     | 270            | 227             | 497                                      | 3.6                      |
| Namibia                                                     | 831                                        | 10            | 16              | 26                                       | 3.1                      | 1,463                                      | 19             | 28              | 47                                       | 3.2                      |
| Niger                                                       | 4,728                                      | 58            | 89              | 147                                      | 3.1                      | 10,662                                     | 115            | 167             | 282                                      | 2.6                      |
| Nigeria                                                     | 54,248                                     | 655           | 563             | 1,219                                    | 2.2                      | 103,872                                    | 1,412          | 1,191           | 2,603                                    | 2.5                      |
| Reunion                                                     | 474                                        | 29            | 33              | 62                                       | 13.1                     | 640                                        | 49             | 55              | 105                                      | 16.4                     |
| Rwanda                                                      | 3,645                                      | 23            | 19              | 41                                       | 1.1                      | 6,305                                      | 50             | 41              | 91                                       | 1.4                      |
| Sao Tome and Principe                                       | 107                                        | 2             | 1               | 3                                        | 2.8                      | 146                                        | 3              | 2               | 5                                        | 3.4                      |
| Senegal                                                     | 4,607                                      | 55            | 49              | 104                                      | 2.3                      | 8,798                                      | 120            | 108             | 228                                      | 2.6                      |
| Seychelles                                                  | 49                                         | 3             | 3               | 6                                        | 12.3                     | 67                                         | 5              | 5               | 10                                       | 14.9                     |
| Sierra Leone                                                | 2,268                                      | 26            | 23              | 49                                       | 2.2                      | 4,181                                      | 52             | 47              | 98                                       | 2.3                      |
| Somalia                                                     | 4,086                                      | 50            | 42              | 92                                       | 2.3                      | 9,053                                      | 143            | 122             | 264                                      | 2.9                      |
| South Africa                                                | 24,741                                     | 323           | 519             | 841                                      | 3.4                      | 26,816                                     | 417            | 638             | 1,055                                    | 3.9                      |
| Swaziland                                                   | 450                                        | 5             | 8               | 13                                       | 3.0                      | 589                                        | 7              | 10              | 17                                       | 2.9                      |
| Tanzania                                                    | 16,616                                     | 203           | 176             | 379                                      | 2.3                      | 31,855                                     | 545            | 457             | 1,002                                    | 3.1                      |
| Togo                                                        | 2,196                                      | 24            | 21              | 45                                       | 2.1                      | 4,178                                      | 52             | 45              | 98                                       | 2.3                      |
| Uganda                                                      | 10,018                                     | 85            | 70              | 155                                      | 1.5                      | 22,514                                     | 253            | 207             | 460                                      | 2.0                      |
| Western Sahara                                              | 149                                        | 3             | 4               | 7                                        | 4.9                      | 269                                        | 6              | 8               | 14                                       | 5.2                      |
| Zambia                                                      | 4,625                                      | 76            | 64              | 140                                      | 3.0                      | 8,922                                      | 177            | 140             | 317                                      | 3.6                      |
| Zimbabwe                                                    | 5,686                                      | 59            | 90              | 149                                      | 2.6                      | 10,041                                     | 120            | 165             | 284                                      | 2.8                      |
| <b>WHO Eastern Mediterranean<br/>and Middle East Region</b> | <b>276,025</b>                             | <b>9,713</b>  | <b>9,524</b>    | <b>19,237</b>                            | <b>7.0</b>               | <b>493,560</b>                             | <b>19,257</b>  | <b>20,153</b>   | <b>39,410</b>                            | <b>8.0</b>               |
| Afghanistan                                                 | 11,130                                     | 502           | 416             | 917                                      | 8.2                      | 21,973                                     | 973            | 846             | 1,819                                    | 8.3                      |
| Algeria                                                     | 17,737                                     | 321           | 407             | 728                                      | 4.1                      | 28,950                                     | 693            | 898             | 1,591                                    | 5.5                      |
| Armenia                                                     | 2,607                                      | 82            | 129             | 211                                      | 8.1                      | 2,968                                      | 125            | 191             | 316                                      | 10.7                     |
| Bahrain                                                     | 439                                        | 42            | 23              | 66                                       | 14.9                     | 645                                        | 67             | 51              | 118                                      | 18.3                     |
| Egypt                                                       | 39,299                                     | 1,730         | 2,140           | 3,869                                    | 9.8                      | 63,676                                     | 3,441          | 4,362           | 7,803                                    | 12.3                     |
| Iran                                                        | 38,506                                     | 706           | 685             | 1,391                                    | 3.6                      | 65,757                                     | 1,439          | 1,458           | 2,896                                    | 4.4                      |
| Iraq                                                        | 11,962                                     | 456           | 460             | 916                                      | 7.7                      | 23,293                                     | 1,061          | 1,065           | 2,126                                    | 9.1                      |
| Jordan                                                      | 2,648                                      | 96            | 89              | 185                                      | 7.0                      | 5,054                                      | 245            | 227             | 472                                      | 9.3                      |
| Kuwait                                                      | 1,240                                      | 107           | 51              | 158                                      | 12.8                     | 2,178                                      | 220            | 138             | 358                                      | 16.4                     |
| Lebanon                                                     | 2,202                                      | 67            | 73              | 140                                      | 6.4                      | 3,214                                      | 140            | 153             | 293                                      | 9.1                      |
| Libya                                                       | 3,128                                      | 48            | 67              | 115                                      | 3.7                      | 5,215                                      | 95             | 148             | 243                                      | 4.7                      |
| Morocco                                                     | 17,598                                     | 312           | 419             | 732                                      | 4.2                      | 28,128                                     | 646            | 870             | 1,515                                    | 5.4                      |
| Occupied Palestinian Territories                            | 1,525                                      | 55            | 58              | 113                                      | 7.4                      | 3,543                                      | 148            | 144             | 291                                      | 8.2                      |
| Oman                                                        | 1,274                                      | 85            | 60              | 145                                      | 11.4                     | 2,710                                      | 173            | 150             | 323                                      | 11.9                     |
| Pakistan                                                    | 72,760                                     | 3,311         | 2,870           | 6,180                                    | 8.5                      | 136,909                                    | 5,891          | 5,716           | 11,607                                   | 8.5                      |
| Qatar                                                       | 393                                        | 47            | 16              | 63                                       | 16.0                     | 537                                        | 63             | 35              | 98                                       | 18.2                     |
| Saudi Arabia                                                | 10,544                                     | 597           | 395             | 992                                      | 9.4                      | 21,851                                     | 1,146          | 955             | 2,101                                    | 9.6                      |
| Sudan                                                       | 16,584                                     | 210           | 312             | 522                                      | 3.1                      | 29,070                                     | 473            | 672             | 1,145                                    | 3.9                      |
| Syria                                                       | 8,516                                      | 260           | 268             | 528                                      | 6.2                      | 16,711                                     | 721            | 720             | 1,441                                    | 8.6                      |
| Tunisia                                                     | 5,966                                      | 118           | 156             | 274                                      | 4.6                      | 8,442                                      | 214            | 292             | 506                                      | 6.0                      |
| United Arab Emirates                                        | 1,829                                      | 273           | 95              | 367                                      | 20.1                     | 2,482                                      | 410            | 197             | 607                                      | 24.5                     |
| Yemen                                                       | 8,137                                      | 290           | 335             | 626                                      | 7.7                      | 20,253                                     | 875            | 866             | 1,741                                    | 8.6                      |
| <b>WHO European Region</b>                                  | <b>621,235</b>                             | <b>22,337</b> | <b>26,041</b>   | <b>48,378</b>                            | <b>7.8</b>               | <b>646,334</b>                             | <b>27,842</b>  | <b>30,796</b>   | <b>58,638</b>                            | <b>9.1</b>               |
| Albania                                                     | 1,966                                      | 35            | 40              | 75                                       | 3.8                      | 2,559                                      | 61             | 70              | 131                                      | 5.1                      |
| Andorra                                                     | 50                                         | 2             | 2               | 4                                        | 7.7                      | 52                                         | 3              | 3               | 5                                        | 9.5                      |
| Austria                                                     | 5,991                                      | 259           | 318             | 576                                      | 9.6                      | 5,887                                      | 338            | 365             | 703                                      | 11.9                     |
| Azerbaijan                                                  | 5,154                                      | 144           | 214             | 358                                      | 6.9                      | 6,793                                      | 259            | 377             | 636                                      | 9.4                      |
| Belarus                                                     | 7,336                                      | 309           | 374             | 683                                      | 6.9                      | 7,233                                      | 357            | 417             | 773                                      | 10.7                     |
| Belgium                                                     | 7,531                                      | 141           | 175             | 315                                      | 4.2                      | 7,658                                      | 180            | 214             | 395                                      | 5.2                      |
| Bosnia and Herzegovina                                      | 3,074                                      | 117           | 178             | 295                                      | 9.6                      | 3,270                                      | 166            | 237             | 402                                      | 12.3                     |
| Bulgaria                                                    | 5,894                                      | 236           | 356             | 591                                      | 10.0                     | 4,871                                      | 223            | 342             | 565                                      | 11.6                     |
| Croatia                                                     | 3,412                                      | 82            | 117             | 199                                      | 5.8                      | 3,304                                      | 97             | 124             | 221                                      | 6.7                      |
| Cyprus                                                      | 541                                        | 12            | 15              | 28                                       | 5.1                      | 637                                        | 18             | 22              | 40                                       | 6.3                      |
| Czech Republic                                              | 7,734                                      | 365           | 370             | 735                                      | 9.5                      | 7,599                                      | 442            | 446             | 887                                      | 11.7                     |
| Denmark                                                     | 3,863                                      | 121           | 144             | 265                                      | 6.9                      | 3,988                                      | 148            | 182             | 330                                      | 8.3                      |
| Estonia                                                     | 991                                        | 43            | 53              | 96                                       | 9.7                      | 814                                        | 42             | 48              | 89                                       | 11.0                     |
| Finland                                                     | 3,775                                      | 130           | 143             | 274                                      | 7.2                      | 3,822                                      | 186            | 198             | 384                                      | 10.0                     |
| France                                                      | 42,546                                     | 1,306         | 1,347           | 2,654                                    | 6.2                      | 45,141                                     | 1,610          | 1,676           | 3,285                                    | 7.3                      |
| Georgia                                                     | 3,681                                      | 129           | 203             | 332                                      | 9.0                      | 3,341                                      | 143            | 215             | 358                                      | 10.7                     |
| Germany                                                     | 61,895                                     | 2,879         | 3,415           | 6,294                                    | 10.2                     | 60,030                                     | 3,459          | 3,685           | 7,144                                    | 11.9                     |
| Greece                                                      | 8,069                                      | 217           | 276             | 493                                      | 6.1                      | 7,767                                      | 254            | 312             | 566                                      | 7.3                      |
| Hungary                                                     | 7,350                                      | 336           | 375             | 711                                      | 9.7                      | 6,807                                      | 365            | 397             | 762                                      | 11.2                     |
| Iceland                                                     | 192                                        | 2             | 2               | 4                                        | 2.0                      | 229                                        | 3              | 3               | 6                                        | 2.5                      |
| Ireland                                                     | 2,674                                      | 44            | 46              | 90                                       | 3.4                      | 3,290                                      | 66             | 69              | 135                                      | 4.1                      |
| Israel                                                      | 3,959                                      | 141           | 141             | 282                                      | 7.1                      | 5,776                                      | 243            | 225             | 468                                      | 8.1                      |
| Italy                                                       | 43,925                                     | 1,400         | 1,480           | 2,880                                    | 6.6                      | 40,482                                     | 1,584          | 1,615           | 3,198                                    | 7.9                      |
| Kazakhstan                                                  | 10,235                                     | 305           | 254             | 559                                      | 5.5                      | 11,358                                     | 430            | 367             | 797                                      | 7.0                      |
| Kyrgyzstan                                                  | 2,896                                      | 71            | 54              | 125                                      | 4.3                      | 4,355                                      | 144            | 108             | 252                                      | 5.8                      |
| Latvia                                                      | 1,758                                      | 78            | 96              | 174                                      | 9.9                      | 1,610                                      | 84             | 94              | 178                                      | 11.1                     |
| Lithuania                                                   | 2,648                                      | 115           | 134             | 249                                      | 9.4                      | 2,626                                      | 136            | 148             | 284                                      | 10.8                     |
| Luxembourg                                                  | 327                                        | 6             | 7               | 13                                       | 3.8                      | 415                                        | 8              | 10              | 18                                       | 4.4                      |
| Macedonia                                                   | 1,428                                      | 31            | 39              | 70                                       | 4.9                      | 1,598                                      | 44             | 53              | 97                                       | 6.1                      |
| Malta                                                       | 280                                        | 11            | 15              | 26                                       | 9.2                      | 304                                        | 15             | 20              | 35                                       | 11.6                     |
| Moldova, Republic of                                        | 2,915                                      | 117           | 125             | 242                                      | 9.3                      | 3,095                                      | 148            | 154             | 302                                      | 9.8                      |
| Monaco                                                      | 23                                         | 1             | 1               | 1                                        | 6.1                      | 24                                         | 1              | 1               | 2                                        | 7.2                      |
| Netherlands                                                 | 11,678                                     | 203           | 229             | 432                                      | 3.7                      | 12,538                                     | 291            | 344             | 635                                      | 5.1                      |
| Norway                                                      | 3,154                                      | 96            | 116             | 212                                      | 6.7                      | 3,534                                      | 129            | 159             | 289                                      | 8.2                      |
| Poland                                                      | 27,852                                     | 1,239         | 1,268           | 2,507                                    | 9.0                      | 28,567                                     | 1,546          | 1,607           | 3,153                                    | 11.0                     |
| Portugal                                                    | 7,471                                      | 279           | 306             | 585                                      | 7.8                      | 7,456                                      | 344            | 362             | 706                                      | 9.5                      |

|                                              | 2003                         |               |               |               | Crude prevalence % | 2025                         |               |               |               | Crude prevalence % |
|----------------------------------------------|------------------------------|---------------|---------------|---------------|--------------------|------------------------------|---------------|---------------|---------------|--------------------|
|                                              | Population Aged 20-79 (000s) | Men (000s)    | Women (000s)  | Total (000s)  |                    | Population Aged 20-79 (000s) | Men (000s)    | Women (000s)  | Total (000s)  |                    |
| Romania                                      | 16,392                       | 760           | 759           | 1,519         | 9.3                | 15,860                       | 834           | 843           | 1,677         | 10.6               |
| Russian Federation                           | 105,244                      | 4,418         | 5,276         | 9,694         | 9.2                | 98,969                       | 4,909         | 5,838         | 10,747        | 10.9               |
| San Marino                                   | 20                           | 1             | 1             | 2             | 6.1                | 21                           | 1             | 1             | 2             | 7.2                |
| Serbia and Montenegro                        | 7,542                        | 182           | 240           | 422           | 5.6                | 7,597                        | 215           | 268           | 483           | 6.4                |
| Slovakia                                     | 3,903                        | 168           | 171           | 339           | 8.7                | 4,127                        | 219           | 224           | 443           | 10.7               |
| Slovenia                                     | 1,511                        | 72            | 73            | 145           | 9.6                | 1,451                        | 87            | 87            | 174           | 12.0               |
| Spain                                        | 30,329                       | 1,210         | 1,795         | 3,004         | 9.9                | 29,155                       | 1,479         | 1,466         | 2,945         | 10.1               |
| Sweden                                       | 6,290                        | 206           | 251           | 457           | 7.3                | 6,373                        | 246           | 303           | 548           | 8.6                |
| Switzerland                                  | 5,310                        | 235           | 270           | 505           | 9.5                | 5,114                        | 308           | 339           | 647           | 12.6               |
| Tajikistan                                   | 3,174                        | 70            | 46            | 117           | 3.7                | 5,305                        | 158           | 110           | 268           | 5.1                |
| Turkey                                       | 42,411                       | 1,254         | 1,704         | 2,959         | 7.0                | 59,689                       | 2,285         | 3,145         | 5,430         | 9.1                |
| Turkmenistan                                 | 2,648                        | 62            | 43            | 105           | 4.0                | 4,537                        | 143           | 105           | 248           | 5.5                |
| Ukraine                                      | 35,625                       | 1,552         | 1,901         | 3,453         | 9.7                | 31,102                       | 1,558         | 1,800         | 3,358         | 10.8               |
| United Kingdom*                              | 42,423                       | 814           | 858           | 1,672         | 3.9                | 45,322                       | 1,080         | 1,062         | 2,141         | 4.7                |
| Uzbekistan                                   | 14,144                       | 333           | 228           | 561           | 4.0                | 22,883                       | 754           | 544           | 1,297         | 5.7                |
| <b>WHO North American Region</b>             | <b>289,550</b>               | <b>10,947</b> | <b>12,070</b> | <b>23,016</b> | <b>7.9</b>         | <b>374,364</b>               | <b>16,996</b> | <b>19,179</b> | <b>36,175</b> | <b>9.7</b>         |
| Anguilla                                     | 8                            | 0             | 0             | 0             | 5.5                | 11                           | 0             | 0             | 1             | 6.7                |
| Antigua and Barbuda                          | 41                           | 2             | 1             | 2             | 5.8                | 57                           | 2             | 2             | 5             | 8.2                |
| Aruba                                        | 43                           | 2             | 2             | 4             | 9.7                | 59                           | 3             | 3             | 6             | 10.9               |
| Bahamas                                      | 193                          | 6             | 11            | 17            | 9.0                | 266                          | 11            | 20            | 30            | 11.4               |
| Barbados                                     | 189                          | 7             | 9             | 16            | 8.5                | 217                          | 14            | 14            | 28            | 12.8               |
| Belize                                       | 124                          | 4             | 4             | 7             | 5.7                | 216                          | 9             | 9             | 17            | 7.8                |
| Bermuda                                      | 39                           | 2             | 2             | 4             | 9.7                | 54                           | 3             | 3             | 6             | 10.9               |
| British Virgin Islands                       | 13                           | 1             | 1             | 2             | 8.3                | 18                           | 1             | 1             | 2             | 9.6                |
| Canada                                       | 22,640                       | 1,099         | 835           | 2,034         | 9.0                | 27,135                       | 1,651         | 1,381         | 3,032         | 11.2               |
| Cayman Islands                               | 22                           | 1             | 1             | 2             | 9.7                | 31                           | 2             | 2             | 3             | 10.9               |
| Dominica, Commonwealth of                    | 42                           | 2             | 2             | 4             | 8.4                | 58                           | 3             | 3             | 6             | 9.8                |
| Grenada                                      | 54                           | 2             | 2             | 4             | 6.8                | 74                           | 3             | 3             | 6             | 8.4                |
| Guadeloupe                                   | 289                          | 9             | 10            | 19            | 6.5                | 345                          | 13            | 15            | 28            | 8.2                |
| Guyana                                       | 457                          | 9             | 18            | 28            | 6.0                | 480                          | 14            | 31            | 46            | 9.5                |
| Haiti                                        | 4,113                        | 80            | 157           | 236           | 5.7                | 6,679                        | 157           | 308           | 464           | 7.0                |
| Jamaica                                      | 1,528                        | 39            | 71            | 111           | 7.2                | 2,197                        | 75            | 135           | 210           | 9.6                |
| Martinique                                   | 265                          | 8             | 9             | 17            | 6.5                | 305                          | 12            | 13            | 25            | 8.2                |
| Mexico                                       | 59,336                       | 1,617         | 2,792         | 4,409         | 7.4                | 87,640                       | 3,235         | 5,800         | 9,035         | 10.3               |
| St Kitts and Nevis                           | 23                           | 1             | 1             | 2             | 6.6                | 32                           | 1             | 1             | 3             | 8.0                |
| St Lucia                                     | 101                          | 3             | 3             | 6             | 6.2                | 132                          | 5             | 6             | 11            | 8.4                |
| St Vincent and the Grenadines                | 71                           | 3             | 3             | 5             | 7.7                | 97                           | 5             | 5             | 9             | 9.4                |
| Trinidad and Tobago                          | 861                          | 11            | 57            | 68            | 7.9                | 1,042                        | 44            | 80            | 123           | 11.8               |
| USA                                          | 199,097                      | 8,041         | 7,980         | 16,020        | 8.0                | 247,219                      | 11,735        | 11,345        | 23,081        | 9.3                |
| <b>WHO South and Central American Region</b> | <b>251,850</b>               | <b>6,021</b>  | <b>8,137</b>  | <b>14,158</b> | <b>5.6</b>         | <b>363,881</b>               | <b>11,000</b> | <b>15,156</b> | <b>26,156</b> | <b>7.2</b>         |
| Argentina                                    | 23,958                       | 563           | 742           | 1,305         | 5.4                | 31,775                       | 836           | 1,006         | 1,842         | 5.8                |
| Bolivia                                      | 4,480                        | 100           | 117           | 217           | 4.8                | 7,927                        | 209           | 241           | 450           | 5.7                |
| Brazil                                       | 109,901                      | 2,496         | 3,186         | 5,682         | 5.2                | 150,418                      | 4,556         | 6,101         | 10,657        | 7.1                |
| Chile                                        | 9,864                        | 231           | 326           | 557           | 5.6                | 13,327                       | 356           | 550           | 906           | 6.8                |
| Colombia                                     | 25,524                       | 492           | 607           | 1,099         | 4.3                | 39,178                       | 1,025         | 1,250         | 2,274         | 5.8                |
| Costa Rica                                   | 2,493                        | 66            | 106           | 172           | 6.9                | 3,909                        | 139           | 228           | 368           | 9.4                |
| Cuba                                         | 7,980                        | 386           | 667           | 1,053         | 13.2               | 8,749                        | 541           | 979           | 1,512         | 17.3               |
| Dominican Republic                           | 4,991                        | 191           | 309           | 500           | 10.0               | 7,081                        | 332           | 589           | 920           | 13.0               |
| Ecuador                                      | 7,548                        | 171           | 190           | 361           | 4.8                | 11,887                       | 357           | 406           | 763           | 6.4                |
| El Salvador                                  | 3,620                        | 80            | 146           | 225           | 6.2                | 5,775                        | 168           | 306           | 474           | 8.2                |
| French Guiana                                | 100                          | 5             | 6             | 11            | 11.1               | 190                          | 11            | 15            | 26            | 13.7               |
| Guatemala                                    | 5,620                        | 117           | 192           | 309           | 5.5                | 11,171                       | 271           | 456           | 728           | 6.5                |
| Honduras                                     | 3,302                        | 71            | 117           | 188           | 5.7                | 6,123                        | 164           | 277           | 441           | 7.2                |
| Netherlands Antilles                         | 148                          | 7             | 11            | 18            | 12.3               | 180                          | 11            | 16            | 28            | 15.4               |
| Nicaragua                                    | 2,567                        | 58            | 99            | 157           | 6.1                | 5,124                        | 146           | 149           | 395           | 7.7                |
| Panama                                       | 1,779                        | 50            | 79            | 129           | 7.3                | 2,590                        | 97            | 163           | 260           | 10.0               |
| Paraguay                                     | 2,979                        | 52            | 64            | 115           | 3.9                | 5,533                        | 115           | 151           | 265           | 4.8                |
| Peru                                         | 15,397                       | 367           | 425           | 793           | 5.1                | 23,753                       | 724           | 864           | 1,588         | 6.7                |
| Puerto Rico                                  | 2,671                        | 116           | 236           | 351           | 13.2               | 3,251                        | 168           | 340           | 508           | 15.6               |
| Suriname                                     | 251                          | 8             | 13            | 22            | 8.6                | 315                          | 16            | 23            | 39            | 12.3               |
| Uruguay                                      | 2,217                        | 55            | 96            | 150           | 6.8                | 2,627                        | 72            | 117           | 188           | 7.2                |
| Venezuela                                    | 14,460                       | 341           | 404           | 746           | 5.2                | 22,997                       | 686           | 837           | 1,523         | 6.6                |
| <b>WHO South-East Asian Region</b>           | <b>705,292</b>               | <b>19,911</b> | <b>19,386</b> | <b>39,296</b> | <b>5.6</b>         | <b>1,081,026</b>             | <b>41,380</b> | <b>40,187</b> | <b>81,567</b> | <b>7.5</b>         |
| Bangladesh                                   | 75,020                       | 1,496         | 1,419         | 2,915         | 3.9                | 130,288                      | 3,218         | 3,089         | 6,307         | 4.8                |
| Bhutan                                       | 1,054                        | 19            | 20            | 39            | 3.7                | 2,044                        | 44            | 45            | 89            | 4.3                |
| India                                        | 603,677                      | 17,970        | 17,534        | 35,504        | 5.9                | 909,790                      | 37,276        | 36,200        | 73,476        | 8.1                |
| Maldives                                     | 144                          | 1             | 1             | 3             | 1.8                | 304                          | 3             | 3             | 7             | 2.1                |
| Mauritius                                    | 786                          | 41            | 43            | 85            | 10.7               | 986                          | 69            | 76            | 145           | 14.7               |
| Nepal                                        | 12,004                       | 245           | 243           | 488           | 4.1                | 21,644                       | 553           | 556           | 1,108         | 5.1                |
| Sri Lanka                                    | 12,607                       | 138           | 125           | 263           | 2.1                | 15,971                       | 217           | 218           | 435           | 2.7                |
| <b>WHO Western Pacific Region</b>            | <b>1,383,705</b>             | <b>19,938</b> | <b>23,091</b> | <b>43,029</b> | <b>3.1</b>         | <b>1,750,653</b>             | <b>33,765</b> | <b>41,997</b> | <b>75,762</b> | <b>4.3</b>         |
| Australia                                    | 13,805                       | 476           | 379           | 854           | 6.2                | 16,950                       | 721           | 580           | 1,301         | 7.7                |
| Brunei Darussalam                            | 209                          | 10            | 13            | 22            | 10.7               | 332                          | 22            | 28            | 50            | 15.0               |
| Cambodia                                     | 6,332                        | 44            | 81            | 125           | 2.0                | 12,191                       | 98            | 162           | 260           | 2.1                |
| China, Hong Kong                             | 5,424                        | 233           | 247           | 480           | 8.8                | 6,765                        | 387           | 477           | 863           | 12.8               |
| China, Macau                                 | 323                          | 13            | 14            | 27            | 8.2                | 425                          | 24            | 31            | 55            | 12.9               |
| China, People's Republic of                  | 877,935                      | 10,751        | 13,059        | 23,809        | 2.7                | 1,079,641                    | 19,913        | 26,217        | 46,130        | 4.3                |
| Cook Islands                                 | 13                           | 0             | 1             | 1             | 6.6                | 17                           | 1             | 1             | 2             | 7.3                |
| East Timor                                   | 403                          | 3             | 3             | 6             | 1.4                | 764                          | 6             | 6             | 13            | 1.6                |
| Fiji                                         | 480                          | 18            | 21            | 40            | 8.3                | 641                          | 31            | 35            | 66            | 10.3               |
| French Polynesia                             | 147                          | 5             | 6             | 12            | 8.0                | 217                          | 10            | 13            | 23            | 10.8               |
| Guam                                         | 93                           | 3             | 3             | 6             | 6.7                | 148                          | 6             | 5             | 11            | 7.5                |
| Indonesia                                    | 132,849                      | 1,195         | 1,353         | 2,548         | 1.9                | 186,983                      | 2,507         | 2,703         | 5,210         | 2.8                |
| Japan                                        | 97,090                       | 3,477         | 3,252         | 6,729         | 6.9                | 90,130                       | 3,654         | 3,495         | 7,149         | 7.9                |
| Kiribati                                     | 60                           | 2             | 2             | 4             | 6.2                | 82                           | 3             | 3             | 7             | 7.9                |
| Korea, Democratic People's Republic of       | 14,835                       | 431           | 343           | 774           | 5.2                | 18,008                       | 635           | 499           | 1,135         | 6.3                |
| Korea, Republic of                           | 34,147                       | 1,210         | 976           | 2,186         | 6.4                | 39,095                       | 1,820         | 1,423         | 3,243         | 8.3                |
| Lao People's Democratic Republic             | 2,658                        | 6             | 22            | 28            | 1.1                | 4,933                        | 12            | 42            | 54            | 1.1                |
| Malaysia                                     | 13,280                       | 527           | 724           | 1,252         | 9.4                | 21,032                       | 1,088         | 1,514         | 2,602         | 12.4               |
| Marshall Islands                             | 46                           | 2             | 2             | 4             | 8.6                | 64                           | 3             | 3             | 7             | 10.3               |
| Micronesia                                   | 82                           | 3             | 3             | 6             | 6.7                | 113                          | 5             | 5             | 10            | 8.5                |
| Mongolia                                     | 1,451                        | 10            | 10            | 20            | 1.4                | 2,355                        | 23            | 24            | 46            | 2.0                |
| Myanmar                                      | 28,474                       | 69            | 243           | 312           | 1.1                | 41,135                       | 136           | 416           | 552           | 1.3                |
| Nauru                                        | 8                            | 1             | 1             | 2             | 30.2               | 10                           | 2             | 2             | 4             | 33.0               |
| New Caledonia                                | 140                          | 2             | 3             | 5             | 3.8                | 217                          | 4             | 6             | 10            | 4.7                |
| New Zealand                                  | 2,603                        | 97            | 100           | 197           | 7.6                | 3,106                        | 135           | 143           | 278           | 9.0                |
| Niue                                         | 1                            | 0             | 0             | 0             | 6.8                | 2                            | 0             | 0             | 0             | 7.6                |
| Palau                                        | 12                           | 1             | 1             | 2             | 8.7                | 16                           | 1             | 1             | 2             | 10.3               |
| Papua New Guinea                             | 2,551                        | 20            | 29            | 49            | 1.9                | 4,546                        | 52            | 79            | 131           | 2.9                |
| Philippines                                  | 42,133                       | 399           | 611           | 1,010         | 2.4                | 69,936                       | 811           | 1,260         | 2,071         | 3.0                |
| Samoa                                        | 74                           | 2             | 3             | 4             | 5.9                | 109                          | 3             | 3             | 7             | 6.1                |
| Singapore, Republic of                       | 3,032                        | 172           | 201           | 374           | 12.3               | 3,884                        | 331           | 427           | 758           | 19.5               |
| Solomon Islands                              | 221                          | 2             | 3             | 5             | 2.1                | 480                          | 5             | 9             | 14            | 2.9                |
| Taiwan                                       | 13,767                       | 307           | 459           | 766           | 5.6                | 18,911                       | 481           | 759           | 1,240         | 6.6                |
| Thailand                                     | 42,236                       | 348           | 533           | 882           | 2.1                | 55,716                       | 570           | 888           | 1,458         | 2.6                |
| Tokelau                                      | 1                            | 0             | 0             | 0             | 6.4                | 1                            | 0             | 0             | 0             | 7.6                |
| Tonga                                        | 65                           | 4             | 5             | 8             | 12.4               | 90                           | 6             | 8             | 14            | 15.9               |
| Tuvalu                                       | 7                            | 0             | 0             | 1             | 8.6                | 9                            | 0             | 1             | 1             | 10.8               |
| Vanuatu                                      | 101                          | 1             | 1             | 2             | 2.2                | 195                          | 2             | 4             | 6             | 3.2                |
| Vietnam                                      | 46,620                       | 95            | 386           | 481           | 1.0                | 71,403                       | 256           | 726           | 982           | 1.4                |

Notes: \* Note that the Health Survey for England 2003 verifies this estimate for diagnosed diabetes (types 1 and 2), but estimates that a further 3% of men and 0.7% of women aged over 35 may suffer from undiagnosed diabetes.

Source: International Diabetes Federation (2003) *The Diabetes Atlas* (Second edition) International Diabetes Federation:Brussels.

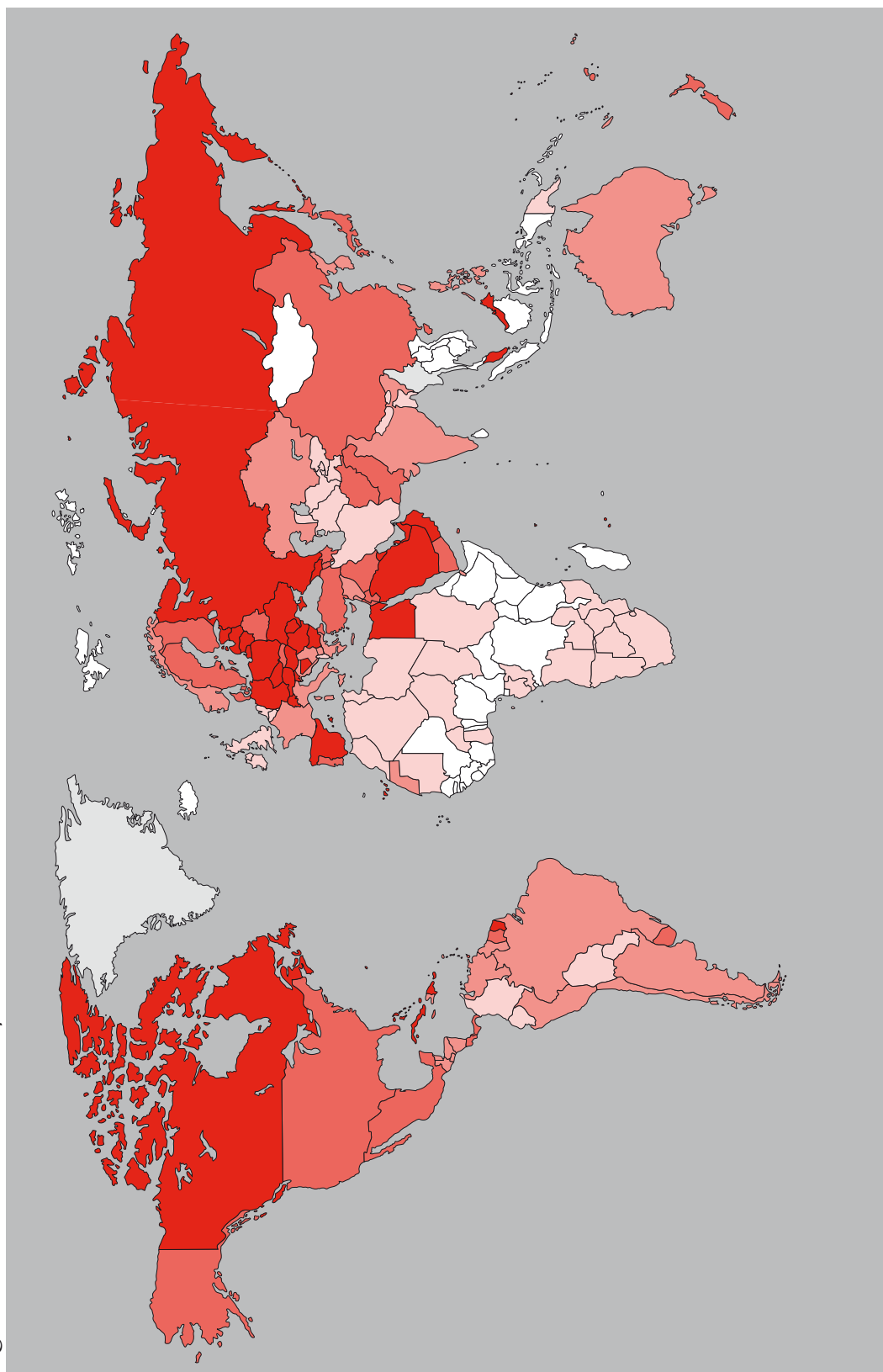
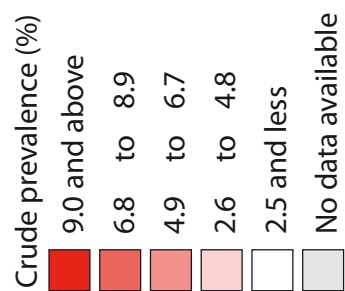


Figure 12.8 Prevalence of diabetes, 2003, the World

# 13. Economic Costs

Both CVD and CHD have major economic consequences for the UK as well as human costs.

## *Health care costs*

CVD cost the health care system in the UK around £14,750 million in 2003<sup>1,2</sup> (Table 13.1). This represents a cost per capita of just under £250. The cost of hospital care for people who have CVD accounts for about 76% of these costs, that of drugs and of dispensing them for about 18% (Figure 13.1a).

CHD cost the health care system in the UK around £3,500 million in 2003<sup>1,2</sup> (Table 13.1). This represents a cost per capita of just under £60. The cost of hospital care for people who have CHD accounts for about 79% of these costs, that of drugs and of dispensing them for about 16% (Figure 13.1b).

## *Non-health care costs*

Looking only at the cost of CVD to the health care system grossly underestimates the total cost of CVD in the UK. Production losses from death and illness in those of working age and from the informal care of people with the disease contribute greatly to the overall financial burden.

In 2003, production losses due to mortality and morbidity associated with CVD cost the UK over £6,200 million, with around 60% of this cost (£3,677 million) due to death and 40% (£2,556 million) due to illness in those of working age. The cost of informal care for people with CVD in the UK was over £4,800 million<sup>3</sup> in 2003 (Table 13.2).

In 2003, production losses due to mortality and morbidity associated with CHD cost the UK over £3,100 million, with around 70% of this cost (£2,173 million) due to death and 30% (£961 million) due to illness in those of working age. The cost of informal care for people with CHD in the UK was around £1,250 million<sup>3</sup> in 2003 (Table 13.2).

## *Total costs*

Overall CVD is estimated to cost the UK economy just under £26 billion a year. This represents an overall cost per capita of £434. Of the total cost of CVD to the UK, around 57% is due to direct health care costs, 24% to productivity losses, and 19% to the informal care of people with CVD (Table 13.2).

Overall CHD is estimated to cost the UK economy over £7.9 billion a year. This represents an overall cost per capita of £133. Of the total cost of CHD to the UK, around 45% is due to direct health care costs, 40% to productivity losses, and 16% to the informal care of people with CHD (Table 13.2).

## *International differences*

Table 13.3 shows the relative costs of cardiovascular related diseases for countries in the EU for 2003. The UK has the highest spend on CVD as a proportion of total health care costs in the EU (Figure 13.3).

1. *The figures for this section are from a cost of illness study by researchers at the Health Economics Research Centre, Department of Public Health, University of Oxford. Details of the methods and data used can be found at [www.heartstats.org/eucosts](http://www.heartstats.org/eucosts).*
2. *This figure does not include the money spent on non-clinical activities concerned with the primary prevention of CVD and CHD, for example, public anti-smoking campaigns, nutrition education etc. However, the cost of drugs prescribed in primary care for both primary and secondary prevention are included.*
3. *The cost of informal care is equivalent to the opportunity costs of unpaid care. It is a measure of the amount of money that carers forgo to provide unpaid care for their spouse, friend or relative living with CVD. For more details on the methods used see [www.heartstats.org/eucosts](http://www.heartstats.org/eucosts)*

*Table 13.1 Health care costs of CVD and CHD, 2003, United Kingdom*

|                                | CVD           |              | CHD          |              |
|--------------------------------|---------------|--------------|--------------|--------------|
|                                | £ million     | % of total   | £ million    | % of total   |
| Primary care                   | 639           | 4.3          | 101          | 2.9          |
| Outpatient care                | 184           | 1.2          | 56           | 1.6          |
| Accident and emergency care    | 51            | 0.3          | 19           | 0.5          |
| Inpatient care                 | 11,229        | 76.2         | 2,773        | 78.6         |
| Medications                    | 2,629         | 17.8         | 578          | 16.4         |
| <b>Total health care costs</b> | <b>14,732</b> | <b>100.0</b> | <b>3,527</b> | <b>100.0</b> |
| Cost per capita                | £249.29       |              | £59.49       |              |

Source: Petersen S, Peto V, Rayner M, Leal J, Luengo-Fernandez R and Gray A (2005) *European cardiovascular disease statistics*. British Heart Foundation: London.

*Figure 13.1a Health care costs of CVD, 2003, United Kingdom*

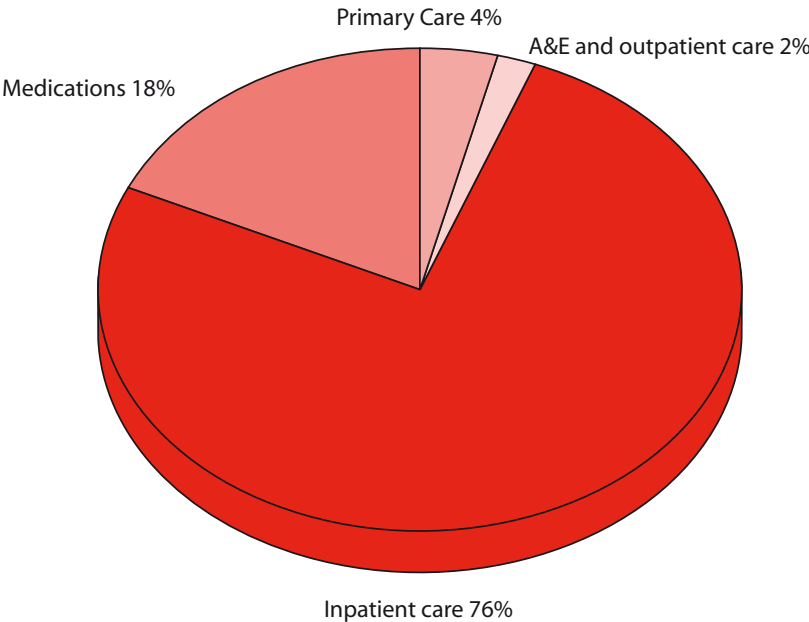


*Figure 13.1b Health care costs of CHD, 2003, United Kingdom*

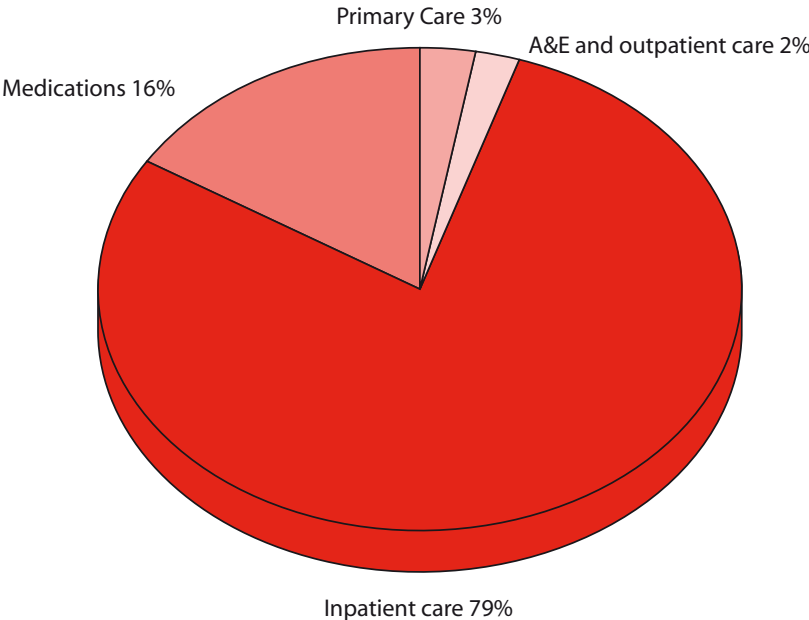


**Table 13.2 Total costs of CVD and CHD, 2003, United Kingdom**

|                                    | CVD           |              | CHD          |              |
|------------------------------------|---------------|--------------|--------------|--------------|
|                                    | £ million     | % of total   | £ million    | % of total   |
| Health care costs                  | 14,732        | 57.1         | 3527         | 44.6         |
| Production losses due to mortality | 3,677         | 14.3         | 2,173        | 27.5         |
| Production losses due to morbidity | 2,556         | 9.9          | 961          | 12.2         |
| Informal care                      | 4,835         | 18.7         | 1,249        | 15.8         |
| <b>Total</b>                       | <b>25,799</b> | <b>100.0</b> | <b>7,910</b> | <b>100.0</b> |

Source: Petersen S, Peto V, Rayner M, Leal J, Luengo-Fernandez R and Gray A (2005) *European cardiovascular disease statistics*. British Heart Foundation: London.

**Table 13.3 Healthcare costs of CVD-related diseases in the EU, by country, 2003**

| Country         | CVDs                |                               | CHD                 |                               | Cerebrovascular diseases |                               |
|-----------------|---------------------|-------------------------------|---------------------|-------------------------------|--------------------------|-------------------------------|
|                 | Cost per capita (€) | % of total health expenditure | Cost per capita (€) | % of total health expenditure | Cost per capita (€)      | % of total health expenditure |
| Austria         | 247                 | 11.4                          | 55                  | 2.5                           | 39                       | 1.8                           |
| Belgium         | 199                 | 8.5                           | 50                  | 2.1                           | 34                       | 1.4                           |
| Cyprus          | 67                  | 6.7                           | 19                  | 1.9                           | 10                       | 1                             |
| Czech Republic  | 83                  | 14.3                          | 21                  | 3.6                           | 14                       | 2.4                           |
| Denmark         | 215                 | 7                             | 53                  | 1.7                           | 52                       | 1.7                           |
| Estonia         | 55                  | 16.8                          | 11                  | 3.5                           | 10                       | 3                             |
| Finland         | 235                 | 11.8                          | 55                  | 2.8                           | 36                       | 1.8                           |
| France          | 212                 | 8.4                           | 34                  | 1.4                           | 24                       | 0.9                           |
| Germany         | 423                 | 15                            | 84                  | 3                             | 94                       | 3.4                           |
| Greece          | 140                 | 10.6                          | 32                  | 2.4                           | 17                       | 1.3                           |
| Hungary         | 52                  | 9.3                           | 11                  | 2                             | 7                        | 1.3                           |
| Ireland         | 108                 | 4.4                           | 30                  | 1.2                           | 24                       | 1                             |
| Italy           | 204                 | 10.6                          | 48                  | 2.5                           | 26                       | 1.3                           |
| Latvia          | 24                  | 11.5                          | 8                   | 3.7                           | 7                        | 3.3                           |
| Lithuania       | 43                  | 16.2                          | 12                  | 4.4                           | 10                       | 3.8                           |
| Luxembourg      | 255                 | 7.7                           | 64                  | 1.9                           | 23                       | 0.7                           |
| Malta           | 22                  | 2                             | 6                   | 0.6                           | 2                        | 0.2                           |
| The Netherlands | 260                 | 10.2                          | 70                  | 2.7                           | 76                       | 3                             |
| Poland          | 46                  | 15.6                          | 14                  | 4.6                           | 7                        | 2.3                           |
| Portugal        | 93                  | 8                             | 20                  | 1.7                           | 14                       | 1.2                           |
| Slovakia        | 52                  | 17                            | 18                  | 5.9                           | 8                        | 2.6                           |
| Slovenia        | 80                  | 7.9                           | 16                  | 1.6                           | 11                       | 1.1                           |
| Spain           | 97                  | 7.1                           | 23                  | 1.7                           | 15                       | 1.1                           |
| Sweden          | 318                 | 11.6                          | 71                  | 2.6                           | 53                       | 1.9                           |
| UK              | 352                 | 17.1                          | 84                  | 4.1                           | 96                       | 4.7                           |
| <b>Total EU</b> | <b>230</b>          | <b>12</b>                     | <b>50</b>           | <b>2.6</b>                    | <b>46</b>                | <b>2.4</b>                    |

Notes: For method see source.

Source: Leal J, Luengo-Fernandez R, Gray A, Petersen S, Rayner M (2006) *Economic burden of cardiovascular diseases in the European Union*. *European Heart Journal*; 27(13):1610-9

Figure 13.3 Health care costs of CVD-related diseases as a proportion of total health care expenditure in the EU, by country, 2003

