Coronary heart disease statistics

2006 edition

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Foreword

The British Heart Foundation is delighted to present the 2006 edition of *Coronary heart disease statistics*.

This year's figures continue to show an encouraging downward trend in the number of people dying prematurely from cardiovascular disease. It now seems inevitable that, barring a disaster, we will soon achieve the Government's target of reducing premature deaths to below 100 per 100,000 population. Whilst this is extremely gratifying and gives some cause for optimism, cardiovascular disease remains the number one killer in our community and we are faring considerably worse than many of our Western European neighbours. Furthermore, as the population ages, the burden of cardiovascular disease increases at huge personal and public cost. So we still have a long way to go.

There can be no doubt that a major contributor to our improving figures is the use of cardioprotective drugs, in particular the group of cholesterol lowering drugs known as statins. BHF-funded and other research has proven beyond any doubt that, by lowering levels of cholesterol, statins protect against heart attacks and strokes. These and other life saving medications, including antiplatelet and blood pressure lowering drugs, are now mandated for patients with or at high risk of cardiovascular disease. The Coronary heart disease statistics show an exponential increase in the prescription of these drugs over the past decade, demonstrating that yesterday's clinical research findings are having a very real impact on today's public and individual health.

Although drug treatments for cardiovascular disease have advanced considerably over recent years, their use is, in effect, an admission of failure to prevent the disease in the first place. And we know that much of the disease risk is determined by lifestyle, in particular diet, exercise and smoking. On this front the statistics are far less encouraging. Approximately one third of young men and women are smokers, even more are overweight and physically inactive. There is a real risk that we are beginning to perceive heart disease as something that can be sorted out by drugs or other interventions when and if it happens, whilst ignoring lifestyle changes that would really make a difference.

The improving trends in many of the *Coronary heart disease statistics* demonstrate just what can be achieved when everyone makes a concerted effort to change the pattern of disease. They demonstrate clearly that cardiovascular disease is a tractable problem that can be conquered.

Prof Peter Weissberg
Medical Director

Introduction

This is the fourteenth 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 of 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[1] and graphs to illustrate key points and a brief review of the data presented. Where appropriate it contains a table showing the public health targets for England, Wales, Scotland and Northern Ireland.

All the data in *Coronary heart disease statistics* are also available on the British Heart Foundation's *www.heartstats.org* website. Further copies of this publication can be downloaded from the website, as well as copies of recent supplements on congenital heart disease, smoking and European cardiovascular disease.

The *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. To keep informed of latest additions to the British Heart Foundation's statistics website, please sign up to the mailing list at www.heartstats.org/mailinglist.asp.

1. *Throughout Coronary heart disease statistics, table column and/or row percentages may add up to 99% or 101% 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 just over 216,000 deaths in 2004. More than one in three people (37%) die from CVD. The main forms of CVD are coronary heart disease (CHD) and stroke. About half (49%) 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 caused just over 105,000 deaths in the UK in 2004 (Table 1.3 and Figs 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 137,500 deaths from heart disease in the UK in 2004 (Table 1.3).

Premature mortality

CVD is one of the main causes of premature death in the UK (death before the age of 75). 32% of premature deaths in men and 24% of premature deaths in women are from CVD (Figs 1.3c and 1.3d). CVD caused just under 60,000 premature deaths in the UK in 2004 (Table 1.3).

CHD, by itself, is the most common cause of premature death in the UK (Figs 1.3c and 1.3d). 21% of premature deaths in men and 12% of premature deaths in women are from CHD (Figs 1.3c and 1.3d). CHD caused over 35,000 premature deaths in the UK in 2004 (Table 1.3).

Other forms of heart disease cause almost 8,000 premature deaths in the UK each year. In total there were just less than 43,000 premature deaths from heart disease in the UK in 2004 – 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 38% in the last ten years (Fig 1.1a).

Death rates from CHD have been falling in the UK since the late 1970s (Figs 1.1c and 1.1d). For people under 65 years, they have fallen by 44% in the last ten years (Fig 1.1c).

In recent years, CHD death rates have been falling slower in younger age groups, and fastest in those aged 55 years and above. For example, between 1994 and 2004 there was a 49% fall in the CHD death rate for men aged 55-64 in the UK, compared to a 30% fall in men aged 35-44 years. In women there was a 56% fall in those aged 55-64 years and a 20% fall in those aged 35-44 years (Table 1.4 and Figs 1.4a and 1.4b).

Death rates from stroke fell throughout the latter part of the twentieth century[1]. For people under

65 they have fallen by 25% between 1993 and 2003 (Fig 1.1e). Recently rates have declined at a slower rate than previously, particularly in the younger age groups (Figs 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[2].

International differences

Despite recent improvements, internationally the death rate from CHD in the UK is relatively high (Table 1.5 and Fig 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 (Fig 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 35-74 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 (Fig 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 (Fig 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 57% higher than in the South West of England, and 103% higher for women (Table 1.6). For over 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 and Figs 1.7).

Socio-economic differences

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 (Table 1.8).

During the 1980s the premature death rate fell across all social groups for both men and women. However for men the death rate fell faster in non-manual workers than in manual workers and the difference in death rates increased (Fig 1.8).

More recently in 1997 it was estimated that each year 5,000 lives and 47,000 working years are lost in men aged 20-64 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 (Table 1.8).

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 (Fig 1.1b).

Ethnic differences

South Asians living in the UK (Indians, Bangladeshis, Pakistanis and Sri Lankans) had a higher premature death rate from CHD than average. Data from the early 1990s show that the rate was 46% higher for men and 51% higher for women (Table 1.10 and Fig 1.10a). Premature death rates from CHD for Caribbeans and West Africans 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 Fig 1.10a).

The difference in the death rates between South Asians and the rest of the population increased in the 1970s and 1980s. This is because the death rate from CHD was not falling as fast in South Asians as it is in the rest of the population. From 1971 to 1991 the mortality rate for 20-69 year olds for the whole population fell by 29% for men and 17% for women whereas in South Asians it fell by 20% for men and 7% for women[3].

South Asians 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 West Africans and Caribbeans premature death rates for stroke were even higher. For West Africans the rate was nearly three times higher for men and 81% higher for women. For Caribbeans it was 68% higher for men and 57% higher for women (Table 1.10 and Fig 1.10b).

Excess winter mortality

In the UK more people die of CHD in the winter months. For example, in 2003/04, around 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 and Fig 1.11).

Excess winter mortality is the mortality that occurs in winter above that which occurs in the rest of the year[4,5]. In 2003/04, in England and Wales, during the winter months there were around 13% 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 nearly 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 Wales and lowest in the North East of England. Excess winter mortality also varies from year to year. In 1999/2000, there were more than twice as many excess winter deaths from CHD than in 2003/04 (8,960 compared to 3,960 deaths)[6].

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 (Fig 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 fifth of areas with the worst health and deprivation indicators and the population as a whole by 40% by 2010 will also be met (Fig 1.1b).

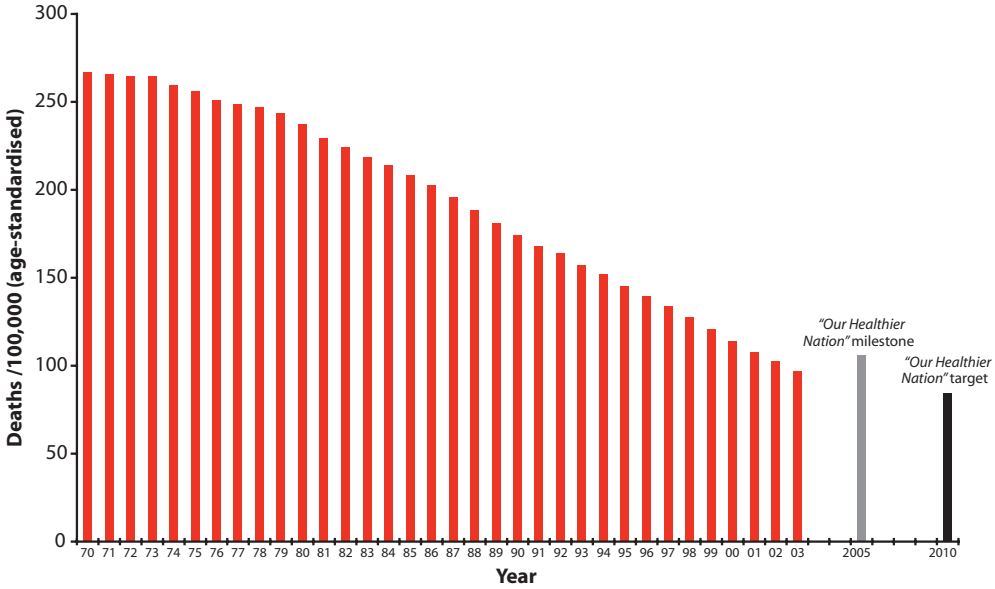
1. *Office for National Statistics (1997) The Health of Adult Britain. The Stationery Office: London.*
2. *Unal B, Critchley JA, Capewell S (2004) Explaining the decline in coronary heart disease mortality in England and Wales between 1981 and 2000. Circulation 109: 1101-1107.*
3. *Wild S, McKeigue P (1997) Cross sectional analysis of mortality by country of birth in England and Wales, 1970-92. BMJ 314: 705-10.*
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.*
5. *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.*
6. *Office for National Statistics (2005), personal communication.*

Table 1.1 CVD mortality targets for the United Kingdom

England[1,2]	
CVD - *Target*	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 - *Milestone*	To reduce the death rate from CHD, stroke and related diseases in people under 75 years by at least one quarter by 2005
CVD – *Inequalities target*	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
Wales[3,4]	
CHD – *Health outcome target*	To reduce CHD mortality in 65-74 year olds from 600 per 100,000 in 2002 to 400 per 100,000 in 2012
CHD – *Health inequality target*	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
Scotland[5]	
CHD – *Target*	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 – *Inequalities target*	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 – *Target*	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).
Northern Ireland[6]	
	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*
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*
5. *Building a Better Scotland. Spending Proposals 2005-2008: Enterprise, Opportunity, Fairness (2004). 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.*

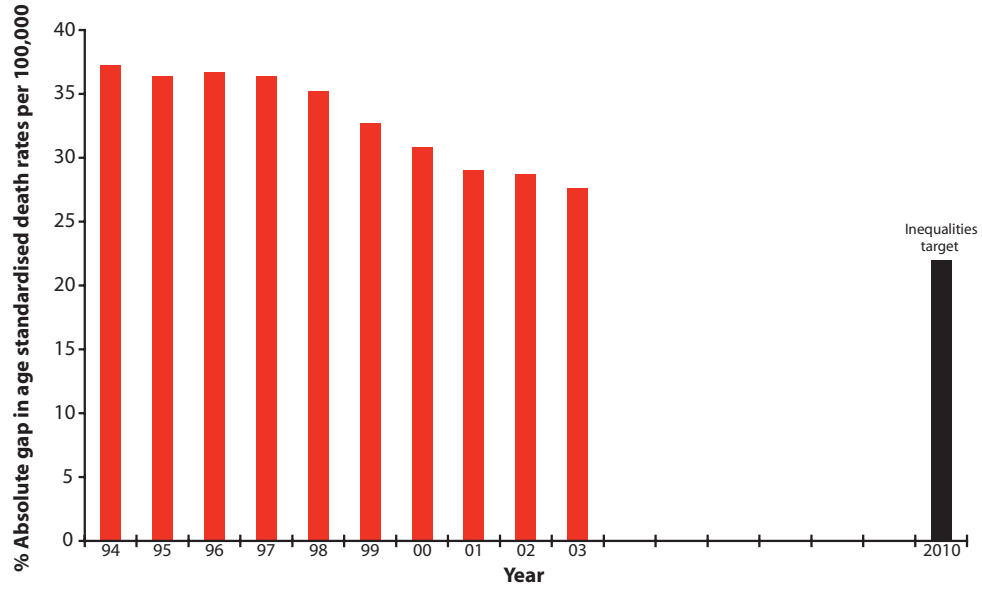
Fig 1.1a *Death rates from CHD, stroke and all other diseases of the circulatory system, people aged under 75, 1970-2003, England, with "Our Healthier Nation" milestone and target*



Data are three year moving averages plotted against middle year. ICD9 data have been adjusted to be comparable with ICD10 data. Data from 1984-1992 have been adjusted due to the effects of coding medical enquiries and WHO Rule 3.

Sources: Data from Office for National Statistics (2005); analysis by Central Health Monitoring Unit, Department of Health.

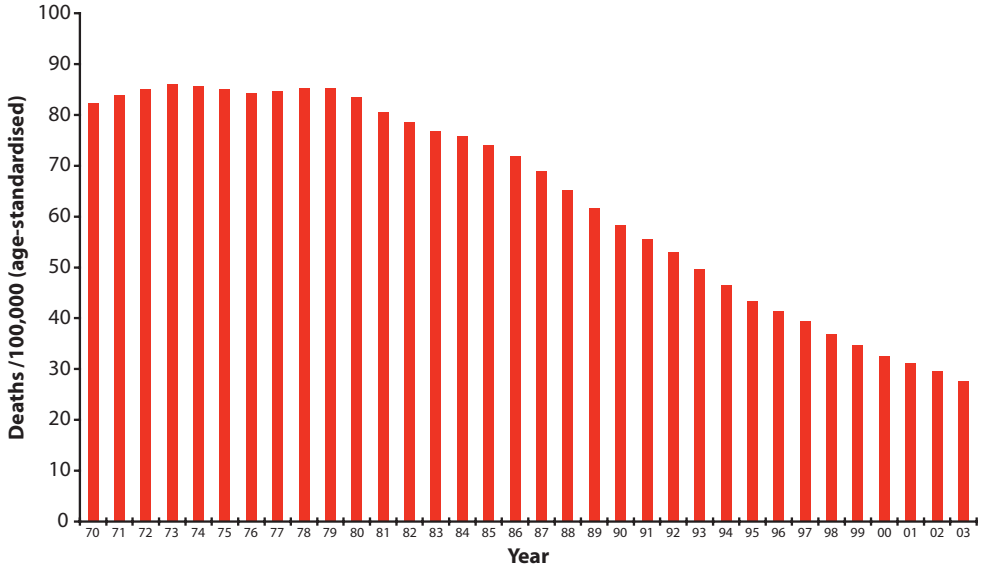
Fig 1.1b *Absolute gap in death rates from CHD, stroke and all other diseases of the circulatory system, between the fifth most deprived areas and the population as a whole, people aged under 75, 1994-2003, England, with inequalities target*



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 (2005); analysis by Central Health Monitoring Unit, Department of Health.

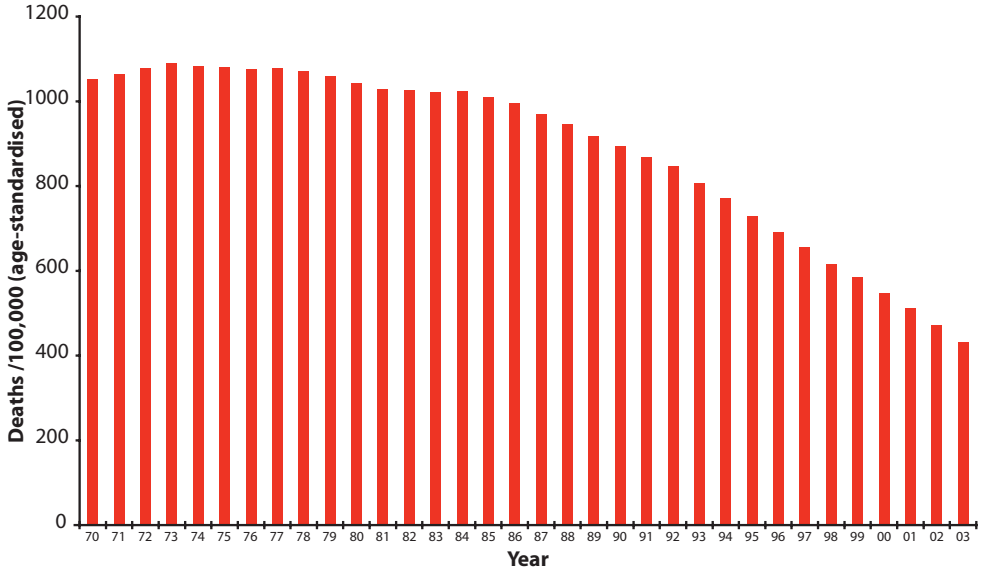
Fig 1.1c Death rates from CHD for people aged under 65, 1970-2003, England



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 the 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 (2005); analysis by Central Health Monitoring Unit, Department of Health.

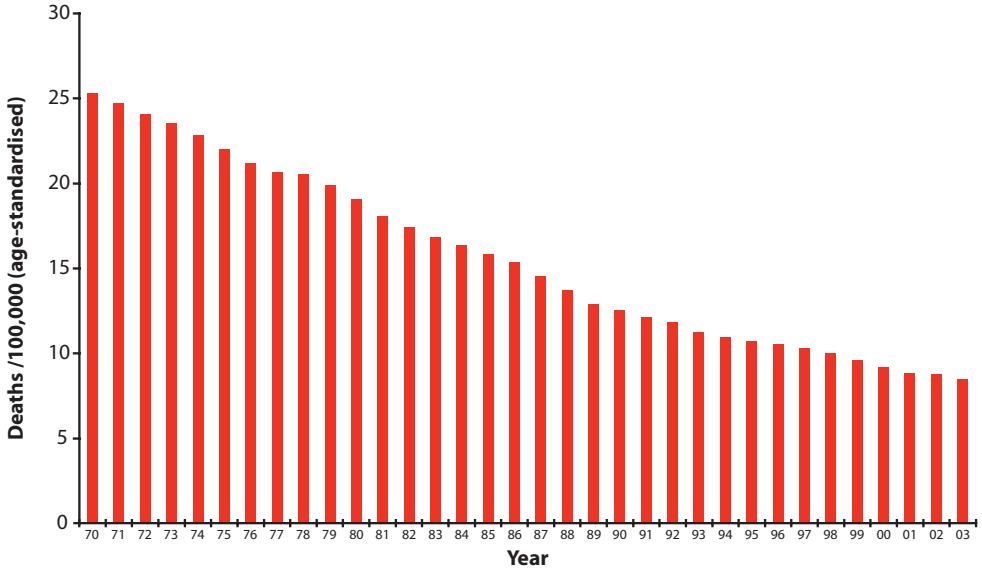
Fig 1.1d Death rates from CHD, for people aged 65-74, 1970-2003, England



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

Source: Data from Office for National Statistics; (2005) analysis by Central Health Monitoring Unit, Department of Health.

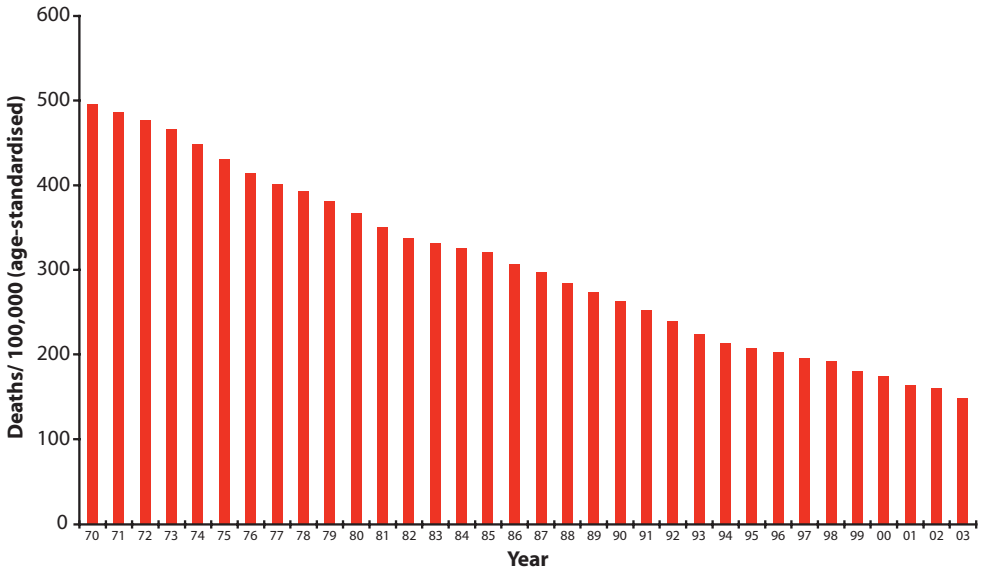
Fig 1.1e Death rates from stroke for people aged under 65, 1970-2003, England



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

Source: Data from Office for National Statistics (2005); analysis by Central Health Monitoring Unit, Department of Health.

Fig 1.1f Death rates from stroke for people aged 65-74, 1970-2003, England



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

Source: Data from Office for National Statistics (2005); analysis by Central Health Monitoring Unit, Department of Health.

Table 1.2 Deaths by cause, sex and age, 2004, United Kingdom

		All ages	Under 35	35-44	45-54	55-64	65-74	75 & over
All causes	Men	278,132	9,060	7,382	14,403	31,506	60,571	155,210
	Women	305,443	5,026	4,459	9,417	20,431	43,031	223,079
	Total	**583,575**	**14,086**	**11,841**	**23,820**	**51,937**	**103,602**	**378,289**
All diseases of the circulatory system (I00-I99)	Men	103,239	552	1,527	4,483	10,760	22,622	63,295
	Women	113,140	321	638	1,578	4,147	13,160	93,296
	Total	**216,379**	**873**	**2,165**	**6,061**	**14,907**	**35,782**	**156,591**
Coronary heart disease (I20-I25)	Men	58,555	136	850	3,041	7,369	14,149	33,010
	Women	47,287	36	196	610	2,006	6,634	37,805
	Total	**105,842**	**172**	**1,046**	**3,651**	**9,375**	**20,783**	**70,815**
Stroke (I60-I69)	Men	22,970	109	263	613	1,434	3,955	16,596
	Women	37,488	100	207	530	1,085	3,289	32,277
	Total	**60,458**	**209**	**470**	**1,143**	**2,519**	**7,244**	**48,873**
Diabetes (E10-E14)	Men	3,210	45	82	151	285	832	1,815
	Women	3,567	26	43	95	189	608	2,606
	Total	**6,777**	**71**	**125**	**246**	**474**	**1,440**	**4,421**
Cancer (C00-D48)	Men	81,781	777	1,232	4,268	12,553	23,474	39,477
	Women	75,179	759	1,774	4,721	10,853	17,830	39,242
	Total	**156,960**	**1,536**	**3,006**	**8,989**	**23,406**	**41,304**	**78,719**
Colo-rectal cancer (C18-C21)	Men	8,636	27	121	430	1,326	2,596	4,136
	Women	7,494	29	107	273	813	1,659	4,613
	Total	**16,130**	**56**	**228**	**703**	**2,139**	**4,255**	**8,749**
Lung cancer (C33, C34)	Men	19,486	15	150	908	3,440	6,379	8,594
	Women	13,524	19	142	762	2,230	3,951	6,420
	Total	**33,010**	**34**	**292**	**1,670**	**5,670**	**10,330**	**15,014**
Breast cancer (C50)	Women	12,338	103	662	1,378	2,274	2,554	5,367
	Total	**12,338**	**103**	**662**	**1,378**	**2,274**	**2,554**	**5,367**
Respiratory disease (J00-J99)	Men	35,640	243	274	733	2,354	6,345	25,691
	Women	42,453	202	174	501	1,677	4,996	34,903
	Total	**78,093**	**445**	**448**	**1,234**	**4,031**	**11,341**	**60,594**
Injuries and poisoning (V01-Y89)	Men	12,539	3,682	2,216	1,639	1,254	1,094	2,654
	Women	7,940	1,036	627	619	569	697	4,392
	Total	**20,479**	**4,718**	**2,843**	**2,258**	**1,823**	**1,791**	**7,046**
All other causes	Men	41,723	3,761	2,051	3,129	4,300	6,204	22,278
	Women	63,164	2,682	1,203	1,903	2,996	5,740	48,640
	Total	**104,887**	**6,443**	**3,254**	**5,032**	**7,296**	**11,944**	**70,918**

ICD codes in parentheses.

Sources: England and Wales, Office for National Statistics (2005) Deaths registered by cause and area of residence, personal communication;

Scotland, General Register Office (2005) Deaths registered by cause and area of residence, personal communication;

Northern Ireland, General Register Office (2005) Annual Report 2004. Statistics and Research Agency: Northern Ireland.

Table 1.3 All deaths and deaths under 75, by cause and sex, 2004, 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	229,099	15,323	26,775	6,935	278,132	99,168	6,726	13,669	3,359	122,922
	Women	251,618	16,994	29,412	7,419	305,443	66,311	4,553	9,227	2,273	82,364
	Total	**480,717**	**32,317**	**56,187**	**14,354**	**583,575**	**165,479**	**11,279**	**22,896**	**5,632**	**205,286**
All diseases of the circulatory system (I00-I99)	Men	85,272	5,690	9,761	2,516	103,239	32,436	2,202	4,245	1,061	39,944
	Women	92,781	6,527	11,076	2,756	113,140	15,762	1,196	2,330	556	19,844
	Total	**178,053**	**12,217**	**20,837**	**5,272**	**216,379**	**48,198**	**3,398**	**6,575**	**1,617**	**59,788**
All heart disease (I00-I52)	Men	58,563	4,010	6,809	1,804	71,186	24,279	1,666	3,267	839	30,051
	Women	54,381	3,941	6,483	1,709	66,514	10,004	789	1,544	366	12,703
	Total	**112,944**	**7,951**	**13,292**	**3,513**	**137,700**	**34,283**	**2,455**	**4,811**	**1,205**	**42,754**
Rheumatic heart disease (I00-I09)	Men	302	26	31	8	367	135	14	12	4	165
	Women	787	61	104	26	978	242	19	43	8	312
	Total	**1,089**	**87**	**135**	**34**	**1,345**	**377**	**33**	**55**	**12**	**477**
Hypertensive disease (I10-I15)	Men	1,398	93	123	35	1,649	589	33	70	21	713
	Women	1,838	141	193	46	2,218	348	29	40	7	424
	Total	**3,236**	**234**	**316**	**81**	**3,867**	**937**	**62**	**110**	**28**	**1,137**
Coronary heart disease (I20-I25)	Men	47,905	3,312	5,814	1,524	58,555	20,561	1,418	2,841	725	25,545
	Women	38,265	2,807	4,964	1,251	47,287	7,389	601	1,214	278	9,482
	Total	**86,170**	**6,119**	**10,778**	**2,775**	**105,842**	**27,950**	**2,019**	**4,055**	**1,003**	**35,027**
Other heart disease including heart failure (I26-I52)	Men	8,958	579	841	237	10,615	2,994	201	344	89	3,628
	Women	13,491	932	1,222	386	16,031	2,025	140	247	73	2,485
	Total	**22,449**	**1,511**	**2,063**	**623**	**26,646**	**5,019**	**341**	**591**	**162**	**6,113**
Stroke (I60-I69)	Men	18,940	1,195	2,294	541	22,970	5,182	340	694	158	6,374
	Women	30,621	2,112	3,861	894	37,488	4,150	300	614	147	5,211
	Total	**49,561**	**3,307**	**6,155**	**1,435**	**60,458**	**9,332**	**640**	**1,308**	**305**	**11,585**
Other diseases of the circulatory system (I70-I99)	Men	7,769	485	658	171	9,083	2,975	196	284	64	3,519
	Women	7,779	474	732	153	9,138	1,608	107	172	43	1,930
	Total	**15,548**	**959**	**1,390**	**324**	**18,221**	**4,583**	**303**	**456**	**107**	**5,449**
Diabetes (E10-E14)	Men	2,505	203	394	108	3,210	1,033	97	214	51	1,395
	Women	2,899	221	366	81	3,567	755	53	127	26	961
	Total	**5,404**	**424**	**760**	**189**	**6,777**	**1,788**	**150**	**341**	**77**	**2,356**
Cancer (C00-D48)	Men	67,410	4,595	7,800	1,976	81,781	34,412	2,356	4,429	1,107	42,304
	Women	61,652	4,132	7,536	1,859	75,179	29,284	1,929	3,760	964	35,937
	Total	**129,062**	**8,727**	**15,336**	**3,835**	**156,960**	**63,696**	**4,285**	**8,189**	**2,071**	**78,241**
Colo-rectal cancer (C18-C21)	Men	7,030	523	851	232	8,636	3,620	273	465	142	4,500
	Women	6,172	407	717	198	7,494	2,366	136	282	97	2,881
	Total	**13,202**	**930**	**1,568**	**430**	**16,130**	**5,986**	**409**	**747**	**239**	**7,381**
Lung cancer (C33,C34)	Men	15,740	1,088	2,151	507	19,486	8,668	614	1,325	285	10,892
	Women	10,678	744	1,772	330	13,524	5,553	404	962	185	7,104
	Total	**26,418**	**1,832**	**3,923**	**837**	**33,010**	**14,221**	**1,018**	**2,287**	**470**	**17,996**
Breast cancer (C50)	Women	10,288	648	1,082	320	12,338	5,769	352	647	203	6,971
	Total	**10,288**	**648**	**1,082**	**320**	**12,338**	**5,769**	**352**	**647**	**203**	**6,971**
Respiratory disease (J00-J99)	Men	29,771	1,979	2,997	893	35,640	8,085	546	1,031	287	9,949
	Women	35,321	2,329	3,746	1,057	42,453	6,011	445	878	216	7,550
	Total	**65,092**	**4,308**	**6,743**	**1,950**	**78,093**	**14,096**	**991**	**1,909**	**503**	**17,499**
Injuries and poisoning (V01-Y98)	Men	9,936	690	1,508	405	12,539	7,815	525	1,218	327	9,885
	Women	6,346	436	920	238	7,940	2,815	170	440	123	3,548
	Total	**16,282**	**1,126**	**2,428**	**643**	**20,479**	**10,630**	**695**	**1,658**	**450**	**13,433**
All other causes	Men	34,205	2,166	4,315	1,037	41,723	15,387	1,000	2,532	526	19,445
	Women	52,619	3,349	5,768	1,428	63,164	11,684	760	1,692	388	14,524
	Total	**86,824**	**5,515**	**10,083**	**2,465**	**104,887**	**27,071**	**1,760**	**4,224**	**914**	**33,969**

ICD codes (10th revision) in parentheses.

Sources: England and Wales, Office for National Statistics (2005) Deaths registered by cause and area of residence, personal communication; Scotland, General Register Office Edinburgh (2005) Deaths registered by cause and area of residence, personal communication; Northern Ireland, General Register Office (2005) Annual Report 2003. Statistics and Research Agency: Northern Ireland.

Fig 1.3a Deaths by cause, men, 2004, United Kingdom

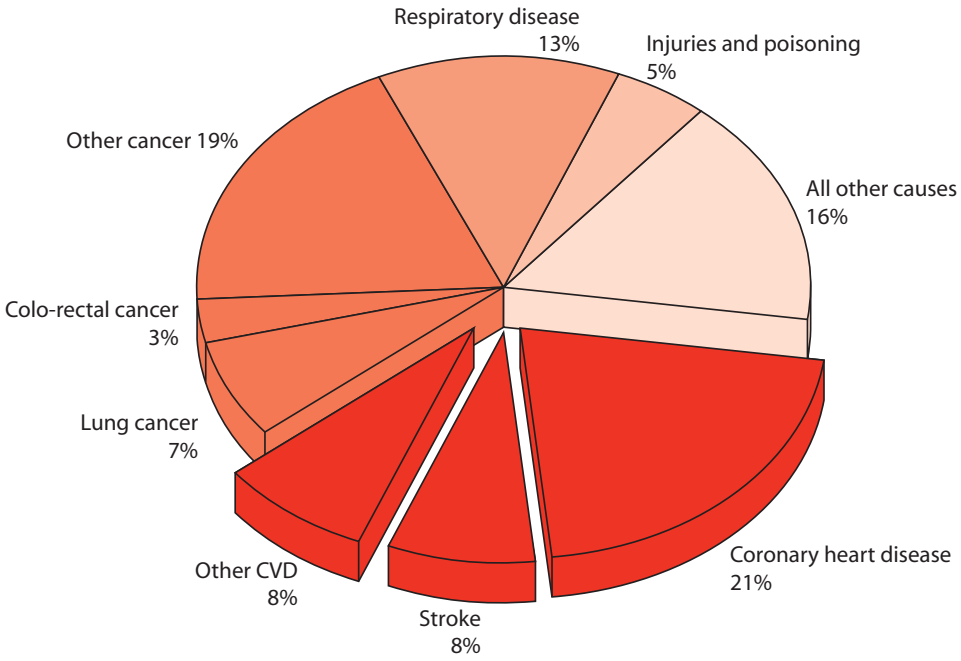


Fig 1.3b Deaths by cause, women, 2004, United Kingdom

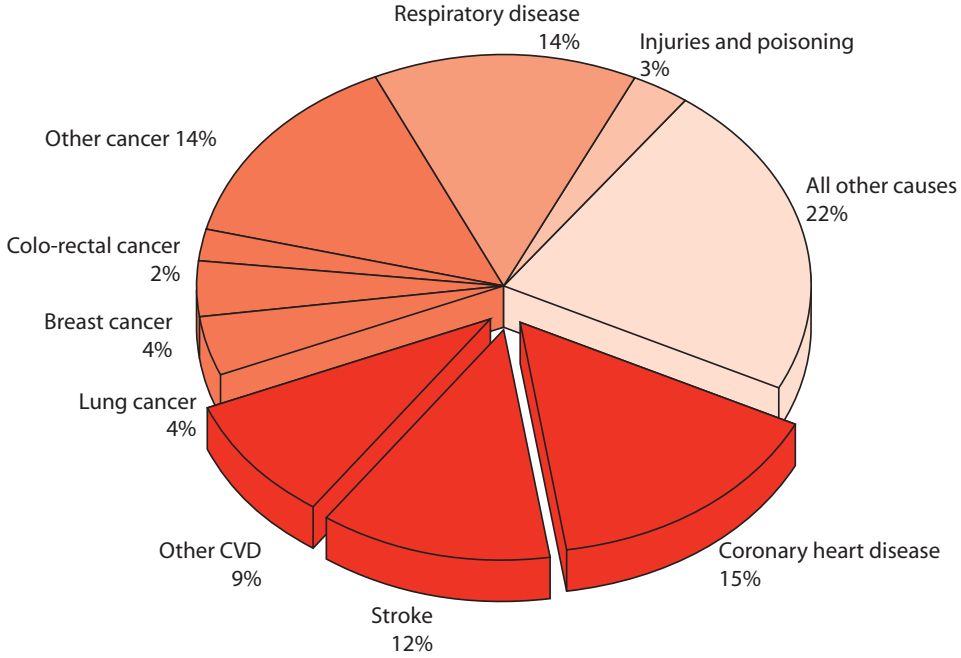


Fig 1.3c *Deaths by cause, men under 75, 2004, United Kingdom*

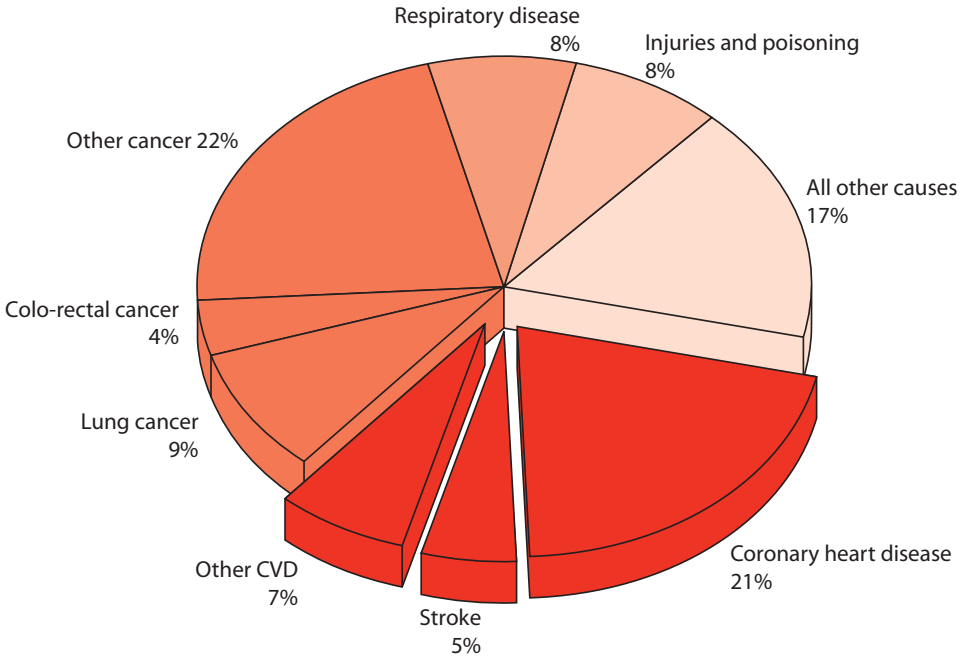


Fig 1.3d *Deaths by cause, women under 75, 2004, United Kingdom*

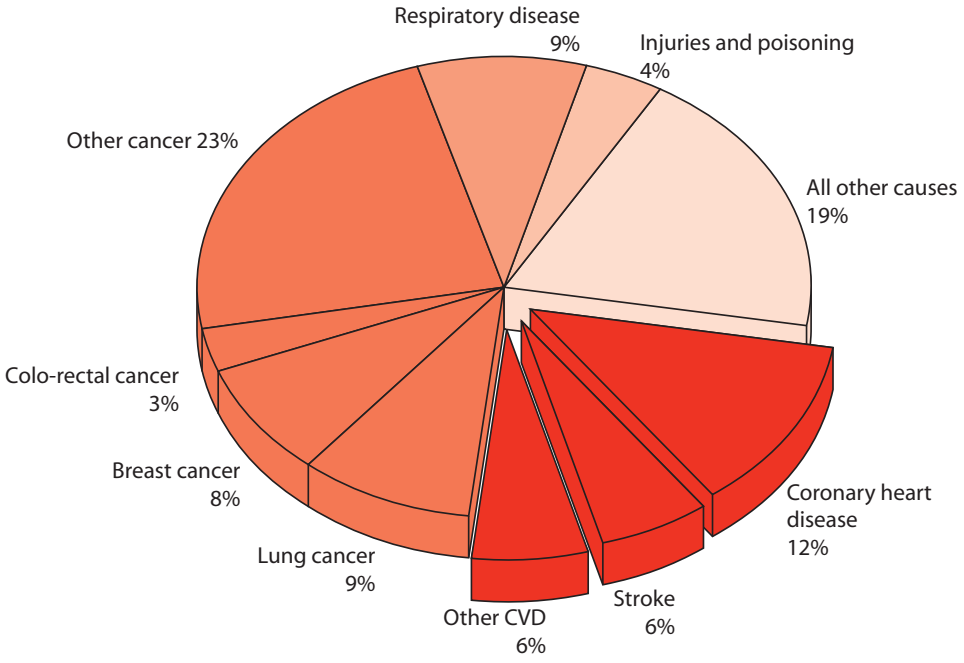


Table 1.4 Age specific death rates per 100,000 population from CHD by sex, 1968-2004, United Kingdom

	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

Sources: 1968-1999: World Health Organization (2002) www3.who.int/whosis
From 2000: Office for National Statistics (2004) www.statistics.gov.uk

Fig 1.4a *Age specific death rates from CHD, men, 1968-2004, United Kingdom, plotted as a percentage of the rate in 1968*

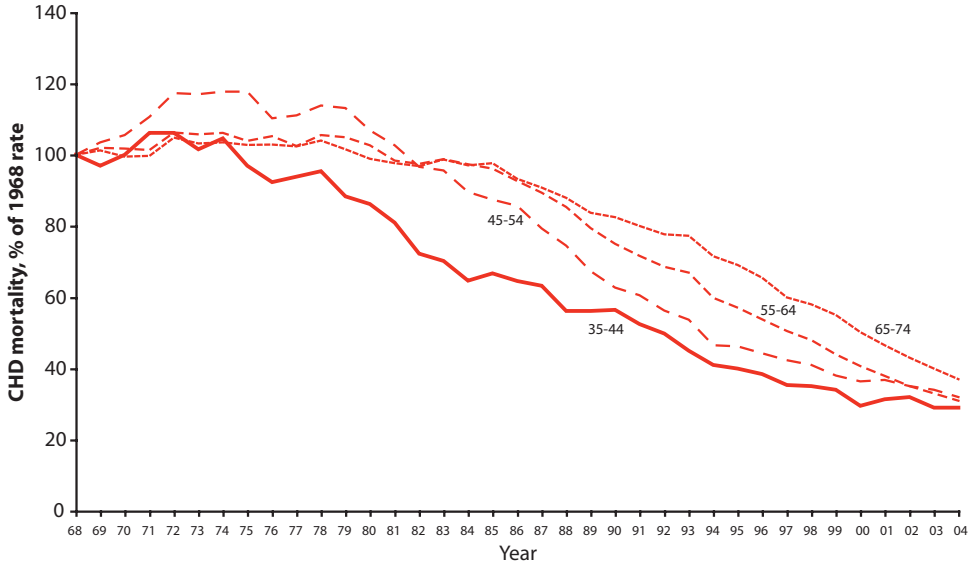


Fig 1.4b *Age specific death rates from CHD, women, 1968-2004, United Kingdom, plotted as a percentage of the rate in 1968*

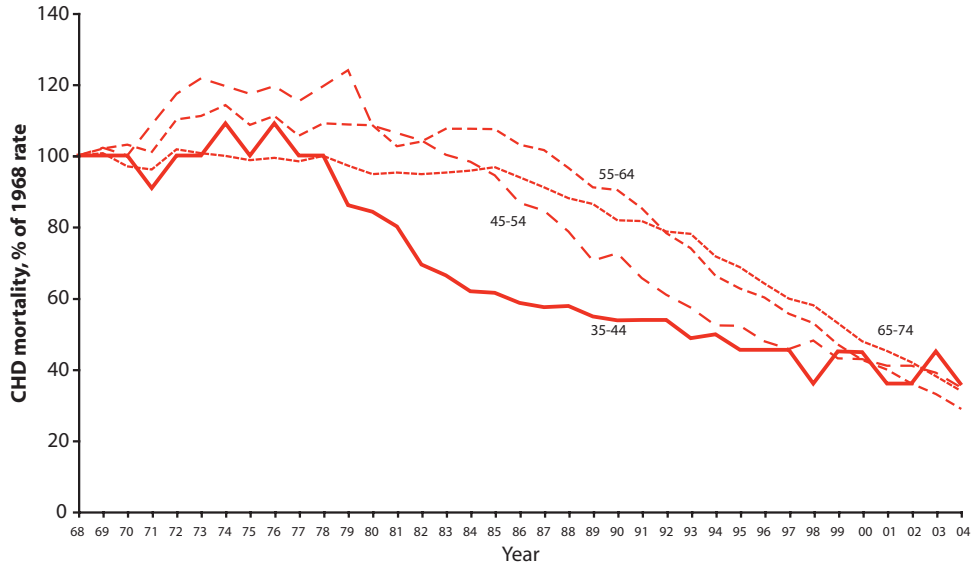


Table 1.5 Age-standardised death rates per 100,000 population from CHD, 1968-2002, selected countries, the World

	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002
MEN AGED 35-74																		
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
Kazakstan								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
WOMEN AGED 35-74																		
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	
Kazakstan								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					

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

Sources: World Health Organization (2004) www3.who.int/whosis.

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

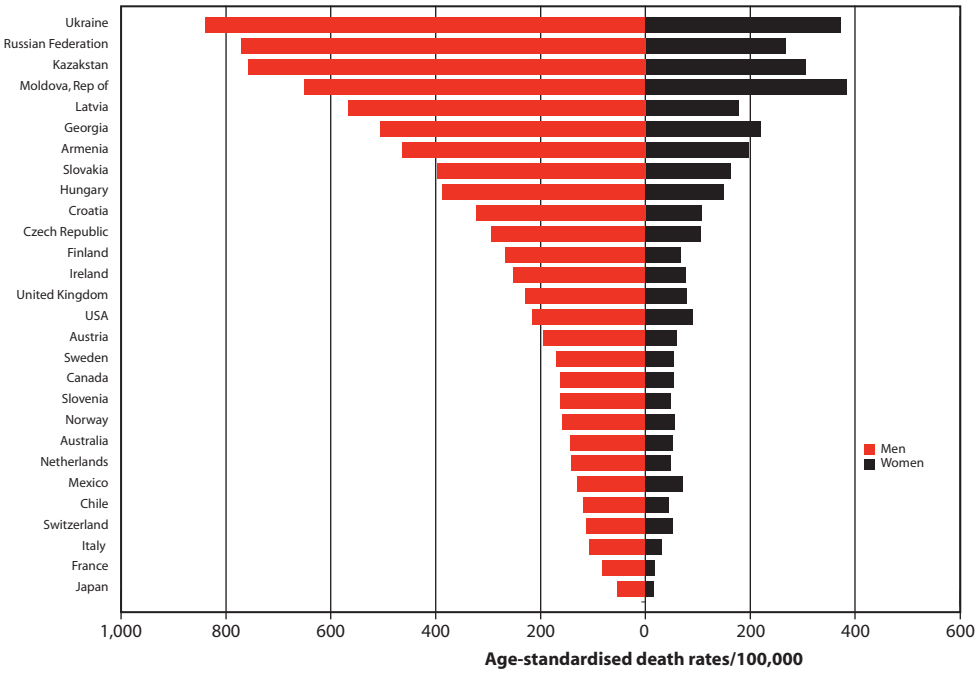


Fig 1.5b *Changes in death rates from CHD, men and women aged 35-74, between 1990 and 2000, selected countries*

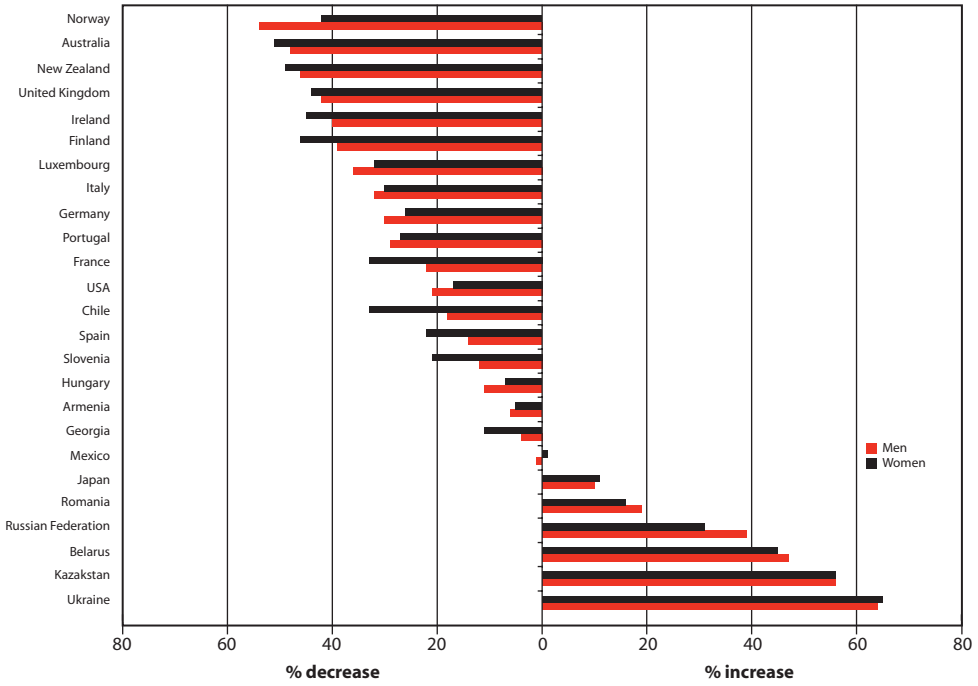


Table 1.6 Age-standardised death rates from CHD per 100,000 population by country and Standard Region, 1978-1996, and by country and Government Office Region, 1997-2004, United Kingdom

	1978	1980	1982	1984	1986	1988	1990	1992	1994	1996		1997	1998	1999	2000	2001	2002	2003	2004
MEN AGED 35-74																			
United Kingdom	578	521	497	490	470	434	393	364	325	292	United Kingdom	295	260	244	226	213	199	189	173
England	523	501	478	471	449	414	377	349	311	281	England	261	252	234	218	205	192	181	167
North	613	594	562	576	539	517	468	448	378	337	North East	336	323	283	266	247	231	224	204
Yorkshire and Humberside	603	559	545	532	528	490	438	395	345	310	Yorkshire and Humberside	291	288	253	240	236	212	201	176
North West	612	583	575	564	538	514	460	413	376	338	North West	314	307	279	262	250	231	220	210
East Midlands	535	502	490	475	445	427	384	351	303	281	East Midlands	260	258	240	219	200	199	189	169
West Midlands	519	500	498	493	480	436	416	371	323	308	West Midlands	285	262	259	234	225	211	195	179
East Anglia	462	432	385	420	382	335	305	290	275	240	East	218	206	202	189	177	159	151	142
South East	464	450	421	410	385	349	319	303	275	250	South East	216	202	197	174	168	152	151	138
											London	249	246	231	224	201	198	189	168
South West	489	474	434	428	418	368	332	306	279	243	South West	223	219	198	192	174	164	146	141
Wales	629	582	533	518	501	467	427	379	348	318	Wales	294	278	279	246	238	225	206	180
Scotland	656	616	606	595	581	538	481	458	408	371	Scotland	347	332	318	289	261	246	244	221
Northern Ireland	653	658	571	598	602	562	483	437	380	338	Northern Ireland	323	302	290	250	228	216	195	194
WOMEN AGED 35-74																			
United Kingdom	202	174	171	172	167	156	145	134	120	104	United Kingdom	98	93	85	78	68	69	65	58
England	171	163	160	162	158	146	137	127	142	99	England	91	89	81	73	70	65	60	54
North	235	217	220	222	210	209	196	176	164	134	North East	133	123	113	100	88	84	82	72
Yorkshire and Humberside	205	192	196	205	189	183	173	155	130	116	Yorkshire and Humberside	112	100	89	87	82	75	66	61
North West	220	210	205	210	205	194	178	167	148	129	North West	115	120	104	93	90	84	72	70
East Midlands	170	165	161	171	167	151	141	127	108	99	East Midlands	95	99	84	75	71	73	64	59
West Midlands	177	167	167	175	167	161	146	134	118	110	West Midlands	103	95	91	76	79	70	69	57
East Anglia	145	134	124	127	123	104	100	94	87	76	East	72	74	62	59	56	49	47	42
South East	139	134	131	130	127	114	107	104	94	81	South East	68	64	63	56	52	52	46	43
											London	83	81	79	73	70	63	61	54
South West	147	136	126	137	133	112	113	97	90	77	South West	69	68	65	56	54	50	49	40
Wales	195	204	184	187	182	166	154	142	131	112	Wales	108	97	90	88	85	79	72	69
Scotland	256	241	245	228	220	219	201	182	160	140	Scotland	136	129	118	109	98	96	90	81
Northern Ireland	233	228	226	204	207	209	177	168	153	127	Northern Ireland	115	107	101	89	83	78	65	66

ICD codes 410-414, age-standardised using the European Standard Population. Government Office Regions replaced Standard regions in England in 1997.

Sources: 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;
1997-2004 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 Northen Ireland.

Table 1.7 Numbers of deaths and age-standardised death rates from CHD for men and women under 65 by local authority, 2002/2004, United Kingdom

Map reference	Local authority	Men: Number of deaths 2002-04	Men: Age standardised death rate/ 100,000	Women: Number of deaths 2002-04	Women: Age standardised death rate/ 100,000
ENGLAND		**28,863**	**44.59**	**7,315**	**10.98**
A	***South East***	***3,821***	***35.62***	***924***	***8.39***
1	Medway Towns UA	144	44.31	35	10.84
2	Bracknell Forest UA	36	26.17	13	9.68
3	West Berkshire UA	71	35.65	16	7.82
4	Reading UA	81	51.64	11	7.34
5	Slough	80	59.26	23	19.24
6	Windsor & Maidenhead UA	66	36.93	11	5.62
7	Wokingham UA	50	24.53	7	3.41
8	Milton Keynes UA	110	41.53	26	10.72
9	Brighton & Hove UA	122	44.12	33	11.70
10	Portsmouth UA	126	58.49	27	12.20
11	Southampton UA	131	52.73	27	11.32
12	Isle of Wight UA	87	41.71	19	9.05
13	Aylesbury Vale	73	32.57	21	9.09
14	Chiltern	40	29.97	12	8.60
15	South Bucks	25	26.77	5	5.61
16	Wycombe	50	23.65	17	7.78
17	Eastbourne	47	40.86	14	11.17
18	Hastings	60	53.23	19	16.96
19	Lewes	47	35.64	10	7.34
20	Rother	43	35.00	7	5.39
21	Wealden	62	30.04	10	4.35
22	Basingstoke & Deane	93	44.72	16	7.83
23	East Hampshire	56	34.90	5	3.15
24	Eastleigh	51	32.33	17	10.96
25	Fareham	47	30.59	5	2.92
26	Gosport	36	37.64	6	5.83
27	Hart	29	24.40	7	5.85
28	Havant	59	36.26	19	11.20
29	New Forest	87	34.69	23	8.31
30	Rushmoor	41	37.56	13	13.24
31	Test Valley	53	33.87	15	9.25
32	Winchester	34	22.04	7	4.64
33	Ashford	46	31.32	12	8.04
34	Canterbury	67	38.08	17	8.43
35	Dartford	41	37.86	7	6.63
36	Dover	46	31.47	11	7.03
37	Gravesham	45	35.49	11	8.40
38	Maidstone	68	34.09	19	9.38
39	Sevenoaks	49	31.27	8	4.67
40	Shepway	58	42.30	15	10.57
41	Swale	75	44.14	23	12.91
42	Thanet	72	41.96	21	11.66
43	Tonbridge & Malling	42	27.09	12	7.76
44	Tunbridge Wells	41	28.27	10	6.88
45	Cherwell	54	32.02	12	7.01
46	Oxford	63	46.92	13	9.64
47	South Oxfordshire	46	25.48	12	6.28
48	Vale of White Horse	51	31.15	12	7.32
49	West Oxfordshire	51	38.54	9	6.50
50	Elmbridge	50	30.71	13	7.62
51	Epsom & Ewell	22	23.37	11	11.15
52	Guildford	47	28.59	16	9.53
53	Mole Valley	28	23.19	5	4.10
54	Reigate & Banstead	55	32.51	13	7.85
55	Runnymede	35	34.13	9	9.13
56	Spelthorne	51	42.22	11	8.70
57	Surrey Heath	42	36.98	6	5.06
58	Tandridge	45	38.84	7	6.00
59	Waverley	43	26.80	15	8.74
60	Woking	31	26.76	5	4.56
61	Adur	30	36.39	11	12.04
62	Arun	77	37.83	22	9.71
63	Chichester	39	26.05	11	6.44
64	Crawley	38	34.18	14	11.84
65	Horsham	42	24.08	5	2.66
66	Mid Sussex	44	24.26	14	7.69
67	Worthing	50	42.71	16	11.86
	London	***3,573***	***46.33***	***872***	***10.71***
68	City of London	5	42.13	0	0.00
69	Barking & Dagenham	98	57.41	27	15.43
70	Barnet	126	35.56	33	8.63
71	Bexley	92	34.23	27	8.96
72	Brent	160	58.68	31	10.51
73	Bromley	107	28.33	28	6.83
74	Camden	111	56.38	22	10.64
75	Croydon	164	41.94	45	11.25
76	Ealing	174	53.94	49	15.20
77	Enfield	133	41.85	29	8.68
78	Greenwich	118	50.45	27	10.72
79	Hackney	129	73.66	25	13.36
80	Hammersmith & Fulham	72	46.20	14	8.55
81	Haringey	124	60.79	23	9.96
82	Harrow	107	43.72	17	6.42
83	Havering	146	50.05	40	12.74
84	Hillingdon	135	47.68	26	8.88
85	Hounslow	108	46.84	36	15.44
86	Islington	123	72.79	28	15.68
87	Kensington & Chelsea	51	26.51	13	6.02
88	Kingston upon Thames	53	31.25	10	5.76
89	Lambeth	111	50.32	26	10.74
90	Lewisham	107	44.85	33	12.88
91	Merton	63	31.01	18	8.76
92	Newham	148	68.17	49	22.20
93	Redbridge	101	35.70	24	8.27
94	Richmond upon Thames	68	31.23	13	6.12
95	Southwark	108	46.31	28	11.29
96	Sutton	68	32.74	7	3.27
97	Tower Hamlets	140	87.71	31	19.61
98	Waltham Forest	148	66.02	48	20.06
99	Wandsworth	97	43.04	31	11.78
100	Westminster	78	34.25	14	6.00
B	***South West***	***2,607***	***37.47***	***610***	***8.41***
101	Bath & North East Somerset UA	70	31.68	22	9.47
102	Bristol UA	247	55.88	48	10.86
103	North Somerset UA	109	37.92	29	9.74
104	South Gloucestershire UA	129	38.28	32	9.49
105	Plymouth UA	154	49.82	47	14.42
106	Torbay UA	85	44.69	14	6.96
107	Bournemouth UA	59	29.16	16	7.96
108	Poole UA	55	29.53	15	7.44
109	Swindon UA	83	37.54	32	14.35
110	Caradon	49	38.94	10	6.95
111	Carrick	41	31.66	12	8.78
112	Kerrier	55	39.05	8	5.27
113	North Cornwall	49	38.85	12	8.38
114	Penwith	41	40.11	9	8.65
115	Restormel	66	44.84	15	9.50
116	Isles of Scilly	1	18.73	0	0.00
117	East Devon	57	29.62	13	6.11
118	Exeter	54	40.34	12	8.70
119	Mid Devon	30	26.84	12	10.52
120	North Devon	66	49.53	6	4.49
121	South Hams	29	23.43	4	2.58
122	Teignbridge	70	39.37	13	6.36
123	Torridge	54	53.69	14	15.48
124	West Devon	26	32.13	5	5.72
125	Christchurch	14	21.97	6	7.26
126	East Dorset	24	19.33	4	2.95
127	North Dorset	35	39.17	3	3.52
128	Purbeck	20	28.60	3	3.76
129	West Dorset	52	35.06	12	7.87
130	Weymouth & Portland	46	49.32	7	7.30
131	Cheltenham	54	39.64	8	5.68
132	Cotswold	32	26.43	10	7.80
133	Forest of Dean	60	47.63	8	6.67
134	Gloucester	68	50.06	29	20.87
135	Stroud	57	35.12	19	11.77
136	Tewkesbury	36	31.58	5	4.31
137	Mendip	55	36.65	12	7.76
138	Sedgemoor	58	34.68	11	6.65
139	South Somerset	62	28.15	12	5.10
140	Taunton Deane	54	38.46	13	8.77
141	West Somerset	18	33.33	4	7.08
142	Kennet	29	27.65	9	8.34
143	North Wiltshire	65	37.86	13	7.50
144	Salisbury	39	25.03	10	6.06
145	West Wiltshire	50	29.87	12	6.81
C	***East of England***	***2,674***	***36.27***	***589***	***7.81***
146	Peterborough UA	104	54.30	27	13.52
147	Luton UA	117	54.70	18	8.80
148	Southend-on-Sea UA	70	34.56	28	12.88
149	Thurrock UA	81	45.38	22	11.97
150	Mid Bedfordshire	57	33.28	11	6.32
151	Bedford	77	40.57	16	8.21
152	South Bedfordshire	62	39.75	9	5.87
153	Cambridge	43	39.47	7	6.17
154	East Cambridgeshire	35	31.91	8	7.48
155	Fenland	62	50.13	12	9.36
156	Huntingdonshire	76	33.67	11	5.25
157	South Cambridgeshire	50	26.77	11	5.92
158	Basildon	82	39.07	21	9.33
159	Braintree	68	35.62	13	6.90
160	Brentwood	24	24.98	3	2.87
161	Castle Point	51	37.13	6	4.67
162	Chelmsford	71	32.19	14	6.33
163	Colchester	60	28.42	20	9.17
164	Epping Forest	65	38.66	9	5.24
165	Harlow	39	44.46	11	11.34
166	Maldon	43	46.80	5	5.36
167	Rochford	35	31.14	2	1.63
168	Tendring	89	42.00	31	14.12
169	Uttlesford	29	27.30	16	14.91
170	Broxbourne	50	44.02	6	5.03
171	Dacorum	53	29.64	9	4.73
172	East Hertfordshire	57	32.52	6	3.42
173	Hertsmere	35	29.15	8	6.68
174	North Hertfordshire	47	30.57	12	7.33
175	St Albans	49	28.46	8	4.86
176	Stevenage	30	33.51	7	7.56
177	Three Rivers	42	38.11	9	8.06
178	Watford	45	47.32	4	4.41
179	Welwyn Hatfield	27	22.40	8	6.77

Map reference	Local authority	Men: Number of deaths 2002-04	Men: Age standardised death rate/ 100,000	Women: Number of deaths 2002-04	Women: Age standardised death rate/ 100,000
180	Breckland	70	38.23	18	9.45
181	Broadland	65	34.86	12	6.44
182	Great Yarmouth	61	44.75	23	16.20
183	Kings Lynn & West Norfolk	84	41.15	21	9.74
184	North Norfolk	52	33.27	7	4.75
185	Norwich	66	47.48	11	7.55
186	South Norfolk	36	19.93	10	5.90
187	Babergh	37	28.17	12	9.08
188	Forest Heath	31	43.63	5	7.19
189	Ipswich	60	42.01	18	12.75
190	Mid Suffolk	46	34.80	11	8.17
191	St Edmundsbury	41	28.91	11	7.22
192	Suffolk Coastal	41	23.72	4	2.17
193	Waveney	59	36.14	18	11.53
D	***East Midlands***	***2,628***	***45.28***	***704***	12.02
194	Corby	39	57.00	11	15.13
195	Daventry	43	38.74	9	8.20
196	East Northamptonshire	35	31.61	8	7.83
197	Kettering	49	42.53	9	7.70
198	Northampton	104	44.18	25	10.49
199	South Northamptonshire	38	30.34	10	8.09
200	Wellingborough	47	46.16	18	17.33
201	Derby UA	143	50.25	40	14.17
202	Leicester UA	215	72.43	63	20.76
103	Rutland UA	14	26.12	6	10.84
204	Nottingham UA	189	68.91	59	21.55
205	Amber Valley	78	43.86	16	9.05
206	Bolsover	73	69.01	24	23.60
207	Chesterfield	65	46.33	20	14.34
208	Derbyshire Dales	41	36.80	12	10.48
209	Erewash	62	40.10	19	12.63
210	High Peak	49	37.68	10	7.65
211	North East Derbyshire	71	45.57	15	9.29
212	South Derbyshire	45	37.49	12	10.37
213	Blaby	47	37.05	12	8.99
214	Charnwood	93	45.76	23	11.09
215	Harborough	33	27.81	7	6.28
216	Hinckley & Bosworth	58	37.81	13	8.82
217	Melton	24	32.70	5	6.80
218	North West Leicestershire	59	45.96	17	13.68
219	Oadby & Wigston	33	45.36	5	6.24
220	Boston	37	43.85	8	8.78
221	East Lindsey	109	51.40	24	11.24
222	Lincoln	45	43.53	18	17.79
223	North Kesteven	55	39.35	14	8.97
224	South Holland	59	51.73	17	14.18
225	South Kesteven	71	39.07	20	10.71
226	West Lindsey	57	43.79	15	11.45
227	Ashfield	83	51.92	24	14.96
228	Bassetlaw	74	45.82	21	13.07
229	Broxtowe	59	38.33	8	5.22
230	Gedling	52	32.91	16	9.82
231	Mansfield	80	60.88	26	19.07
232	Newark & Sherwood	65	40.21	16	10.01
233	Rushcliffe	35	23.16	9	6.19
E	***West Midlands***	***3,400***	***47.92***	***942***	***13.05***
234	Birmingham	685	64.03	216	19.60
235	Coventry	162	46.36	45	12.45
236	Dudley	206	47.83	57	13.15
237	Sandwell	208	58.61	62	17.30
238	Solihull	121	42.69	27	9.12
239	Walsall	179	53.15	55	15.70
240	Wolverhampton	166	56.61	44	14.84
241	County of Herefordshire UA	94	35.54	18	6.65
242	Telford & Wrekin UA	117	54.49	32	15.04
243	Stoke-on-Trent UA	228	72.68	62	20.10
244	Bridgnorth	27	31.86	10	11.81
245	North Shropshire	47	55.32	7	8.18
246	Oswestry	21	38.96	4	6.93
247	Shrewsbury & Atcham	49	35.98	7	4.67
248	South Shropshire	25	35.76	4	5.91
249	Cannock Chase	64	49.62	16	12.73
250	East Staffordshire	70	48.64	22	15.54
251	Lichfield	52	33.61	14	8.75
252	Newcastle-under-Lyme	82	48.86	20	11.31
253	South Staffordshire	53	30.98	23	13.59
254	Stafford	64	34.79	18	9.23
255	Staffordshire Moorlands	66	43.01	17	10.86
256	Tamworth	44	43.34	15	15.21
257	North Warwickshire	32	34.13	18	18.96
258	Nuneaton & Bedworth	88	53.08	26	15.18
259	Rugby	45	34.84	14	11.21
260	Stratford-on-Avon	47	25.92	15	8.08
261	Warwick	70	40.15	12	6.94
262	Bromsgrove	39	28.90	10	7.31
263	Malvern Hills	47	40.86	7	5.63
264	Redditch	50	46.46	8	7.76
265	Worcester	37	31.70	11	9.24
266	Wychavon	53	29.02	13	7.43
267	Wyre Forest	62	39.60	13	8.20
F	***North West***	***5,005***	***55.48***	***1,329***	***14.29***
268	Bolton	220	62.85	69	19.46
269	Bury	145	59.93	27	10.72
270	Manchester	341	80.02	99	23.13
271	Oldham	168	59.98	66	22.60
272	Rochdale	211	79.88	60	22.49
273	Salford	176	66.01	36	13.05
274	Stockport	182	47.36	53	13.33
275	Tameside	169	59.86	50	17.08
276	Trafford	128	47.68	29	10.26
277	Wigan	258	58.49	66	15.06
278	Knowsley	118	66.86	51	27.18
279	Liverpool	364	71.63	99	18.26
280	St Helens	136	54.82	29	11.48
281	Sefton	199	53.60	54	12.63
282	Wirral	242	57.13	58	12.80
283	Halton UA	98	61.91	37	22.79
284	Warrington UA	120	45.49	26	9.63
285	Blackburn with Darwen UA	108	66.06	29	18.46
286	Blackpool UA	116	56.51	35	17.12
287	Chester	58	35.77	14	8.35
288	Congleton	37	26.38	7	4.85
289	Crewe & Nantwich	84	52.72	10	6.23
290	Ellesmere Port & Neston	50	45.12	9	7.73
291	Macclesfield	94	42.79	12	5.24
292	Vale Royal	81	44.85	23	13.07
293	Allerdale	67	47.25	18	11.81
294	Barrow-in-Furness	67	64.77	13	12.95
295	Carlisle	77	54.60	15	9.92
296	Copeland	50	48.25	16	15.56
297	Eden	25	30.59	7	8.60
298	South Lakeland	48	28.63	12	7.08
299	Burnley	69	58.33	15	13.03
300	Chorley	63	41.34	11	7.10
301	Fylde	40	36.25	11	9.11
302	Hyndburn	60	55.77	16	15.02
303	Lancaster	85	50.28	23	12.84
304	Pendle	76	63.94	23	19.77
305	Preston	80	50.77	29	18.59
306	Ribble Valley	35	42.17	4	4.25
307	Rossendale	53	57.95	14	15.61
308	South Ribble	61	40.58	12	7.58
309	West Lancashire	75	46.05	19	11.27
310	Wyre	71	46.29	23	13.28
G	***Yorkshire and the Humber***	***3,248***	***49.32***	***835***	***12.35***
311	Barnsley	175	57.97	48	15.88
312	Doncaster	204	52.44	47	11.70
313	Rotherham	185	53.49	53	14.97
314	Sheffield	318	49.59	94	14.19
315	Bradford	327	58.95	94	16.68
316	Calderdale	128	48.76	29	11.02
317	Kirklees	228	45.12	76	14.68
318	Leeds	428	50.24	105	11.80
319	Wakefield	219	50.20	56	12.75
320	Kingston upon Hull UA	200	67.58	50	17.33
321	East Riding of Yorkshire UA	194	39.86	53	10.38
322	North East Lincolnshire UA	95	45.20	22	10.21
323	North Lincolnshire UA	102	45.15	26	11.33
324	York UA	104	45.03	17	6.91
325	Craven	29	36.14	4	4.62
326	Hambleton	45	34.19	7	5.48
327	Harrogate	75	35.02	11	4.86
328	Richmondshire	24	37.11	8	12.20
329	Ryedale	26	32.99	3	3.75
330	Scarborough	83	51.65	21	12.39
331	Selby	59	52.98	11	10.15
H	***North East***	***1,907***	***56.05***	***510***	14.52
332	Gateshead	156	60.59	41	15.25
334	Newcastle upon Tyne	199	65.58	48	15.20
335	North Tyneside	143	55.49	31	11.57
336	South Tyneside	114	57.08	34	16.70
337	Sunderland	188	51.20	46	12.10
338	Hartlepool UA	87	74.56	28	23.34
339	Middlesbrough UA	93	56.90	33	19.47
340	Redcar and Cleveland UA	114	56.96	32	15.58
341	Stockton-on-Tees UA	121	50.36	34	13.90
342	Darlington UA	74	54.24	19	13.86
343	Chester-le-Street	45	57.24	9	11.38
344	Derwentside	73	60.33	21	17.22
345	Durham	66	55.45	12	9.86
346	Easington	79	64.57	25	18.91
347	Sedgefield	61	49.73	24	18.93
348	Teesdale	23	57.60	2	4.96
349	Wear Valley	44	49.04	17	18.65
350	Alnwick	17	33.19	4	7.80
351	Berwick-upon-Tweed	14	34.11	4	7.70
352	Blyth Valley	81	68.65	20	17.31
353	Castle Morpeth	27	34.56	6	7.51
354	Tynedale	30	31.96	11	11.78
355	Wansbeck	58	66.42	9	9.96
SCOTLAND		**4,036**	**59.58**	**1,248**	**17.34**
356	Aberdeen City	121	55.15	42	15.89
357	Aberdeenshire	127	45.19	40	12.11
358	Angus	76	54.96	29	17.30
359	Argyll & Bute	80	67.74	22	15.22
360	Clackmannanshire	47	75.08	9	13.14
361	Dumfries & Galloway	106	53.65	30	12.74
362	Dundee City	125	77.35	46	23.40
363	East Ayrshire	108	71.41	41	23.80
364	East Dunbartonshire	42	38.17	26	16.11
365	East Lothian	55	53.18	15	11.36
366	East Renfrewshire	46	43.20	13	10.08
367	Edinburgh, City of	309	68.34	64	11.46
368	Eilean Siar	17	54.06	6	15.26
369	Falkirk	112	66.04	26	12.11
370	Fife	281	66.31	93	18.35
371	Glasgow City	605	106.25	226	32.27
372	Highland	164	62.90	41	12.57
373	Inverclyde	111	110.24	33	27.09
374	Midlothian	46	50.36	13	11.09
375	Moray	35	31.45	12	9.46

Map reference	Local authority	Men: Number of deaths 2002-04	Men: Age standardised death rate/ 100,000	Women: Number of deaths 2002-04	Women: Age standardised death rate/ 100,000
376	North Ayrshire	147	85.91	32	15.29
377	North Lanarkshire	301	84.70	113	24.99
378	Orkney Islands	12	55.30	4	12.12
379	Perth & Kinross	88	54.69	20	9.35
380	Renfrewshire	147	76.72	50	19.50
381	Scottish Borders	87	61.14	13	7.38
382	Shetland Islands	22	81.51	4	13.79
383	South Ayrshire	88	62.75	27	15.16
384	South Lanarkshire	271	75.68	75	16.67
385	Stirling	58	57.61	13	10.45
386	West Dunbartonshire	90	81.36	32	24.41
387	West Lothian	112	62.22	38	16.98
WALES		**2,056**	**50.81**	**588**	**13.89**
388	Blaenau Gwent UA	59	60.08	27	26.77
389	Bridgend UA	87	48.01	20	10.83
390	Caerphilly UA	163	70.32	38	15.94
391	Cardiff UA	179	52.28	43	11.91
392	Carmarthenshire UA	121	45.87	33	11.95
393	Ceredigion UA	45	39.52	14	11.86
394	Conwy UA	76	47.42	16	8.63
395	Denbighshire UA	60	44.44	16	11.12
396	Flintshire UA	108	51.58	38	16.85
397	Gwynedd UA	63	36.82	21	11.61
398	Isle of Anglesey UA	33	31.63	9	8.39
399	Merthyr Tydfil UA	58	77.18	17	21.63
400	Monmouthshire UA	56	42.09	13	9.61
401	Neath Port Talbot UA	99	52.61	25	12.62
402	Newport UA	113	62.68	28	15.09
403	Pembrokeshire UA	65	37.89	27	14.56
404	Powys UA	80	40.09	25	13.14
405	Rhondda, Cynon, Taff UA	211	66.92	62	19.25
406	Swansea UA	141	47.91	45	14.22
407	The Vale of Glamorgan UA	91	55.23	11	6.11
408	Torfaen UA	56	43.70	25	19.36
409	Wrexham UA	92	50.80	35	18.94
NORTHERN IRELAND		**1,033**	**50.84**	**288**	**13.60**
410	Ards	43	42.02	14	12.92
411	Belfast	189	64.05	47	14.55
412	Castlereagh	25	32.19	12	13.40
413	Down	38	48.11	9	11.07
414	Lisburn	69	53.13	19	14.00
415	North Down	53	50.23	13	11.29
416	Antrim	32	53.24	15	23.69
417	Ballymena	36	46.13	11	13.32
418	Ballymoney	9	26.22	4	10.91
419	Carrickfergus	24	48.90	4	8.12
420	Coleraine	39	54.67	12	15.85
421	Cookstown	23	58.99	5	12.87
422	Larne	14	32.66	6	14.14
423	Magherafelt	27	62.99	8	17.80
424	Moyle	12	55.70	2	8.90
425	Newtownabbey	54	53.99	11	10.15
426	Armagh	32	47.30	9	13.35
427	Banbridge	25	48.15	4	7.55
428	Craigavon	50	50.75	19	18.86
429	Dungannon	30	53.60	4	7.36
430	Newry and Mourn	50	49.69	19	18.88
431	Fermanagh	43	57.76	9	12.50
432	Limavady	13	35.43	4	10.74
433	Derry	54	48.23	13	11.23
434	Omagh	32	56.50	5	9.23
435	Strabane	17	37.24	10	22.45

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.

Sources: England and Wales: rates calculated in partnership with the Office for National Statistics
Northern Ireland: rates calculated in partnership with Northern Ireland Statistics and Research Agency
Scotland rates calculated in partnership with the General Register Office for Scotland

Key to local authorities

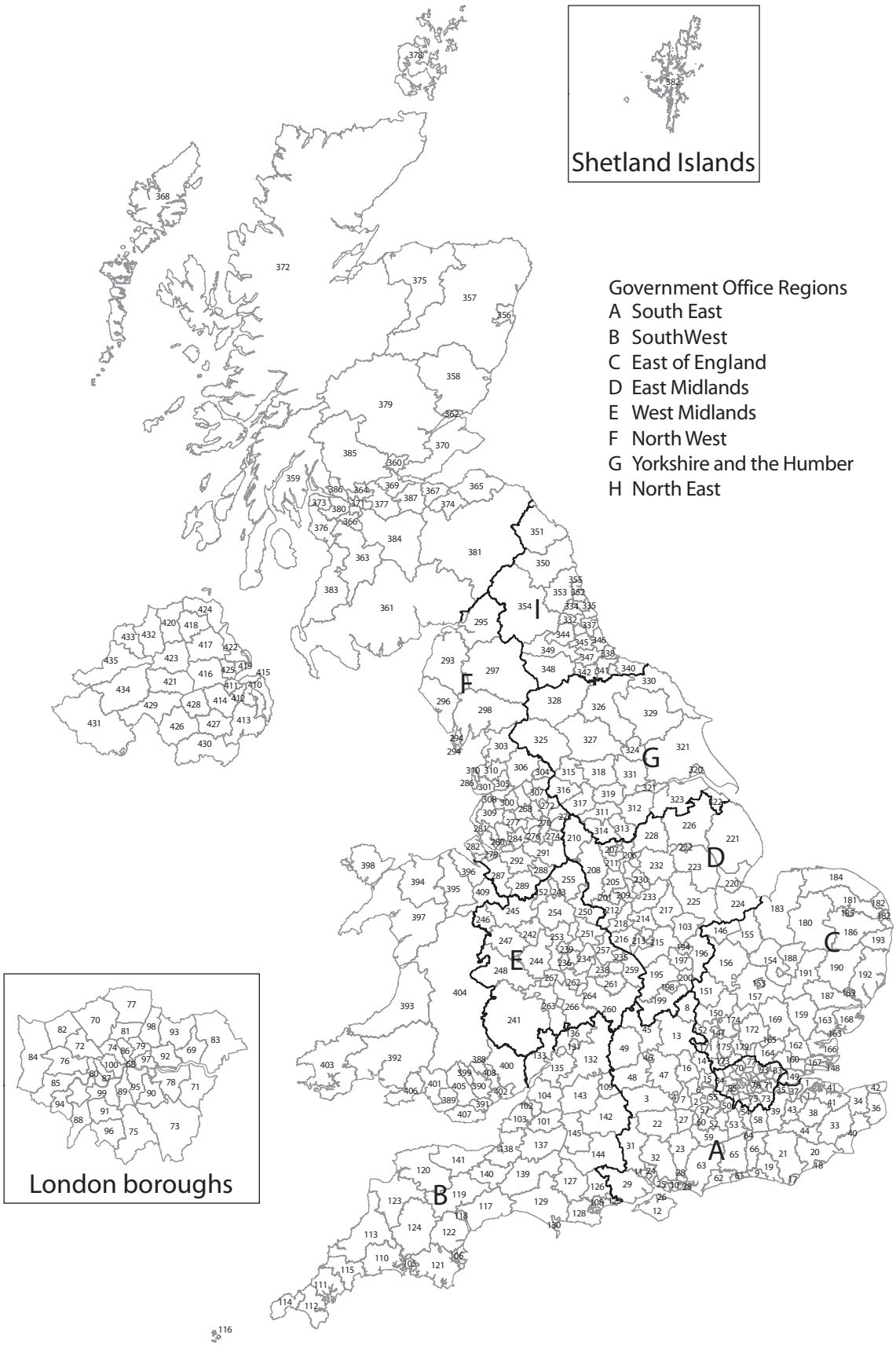


Fig 1.7a *Age–standardised death rates per 100,000 population from CHD for men under 65 by local authority, 2002/2004, United Kingdom*

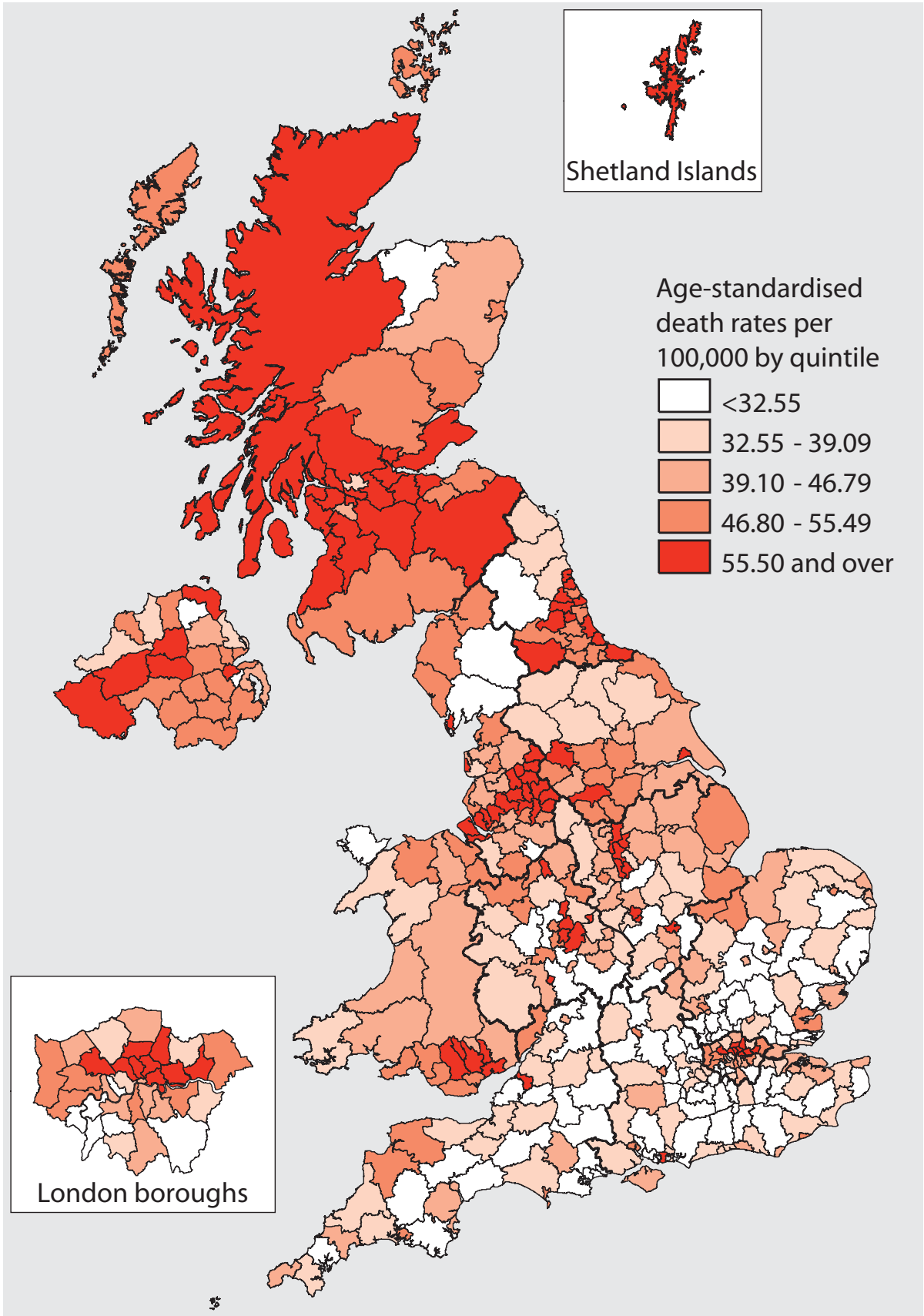


Fig 1.7b *Age–standardised death rates per 100,000 from CHD for women under 65 by local authority, 2002/2004, United Kingdom*

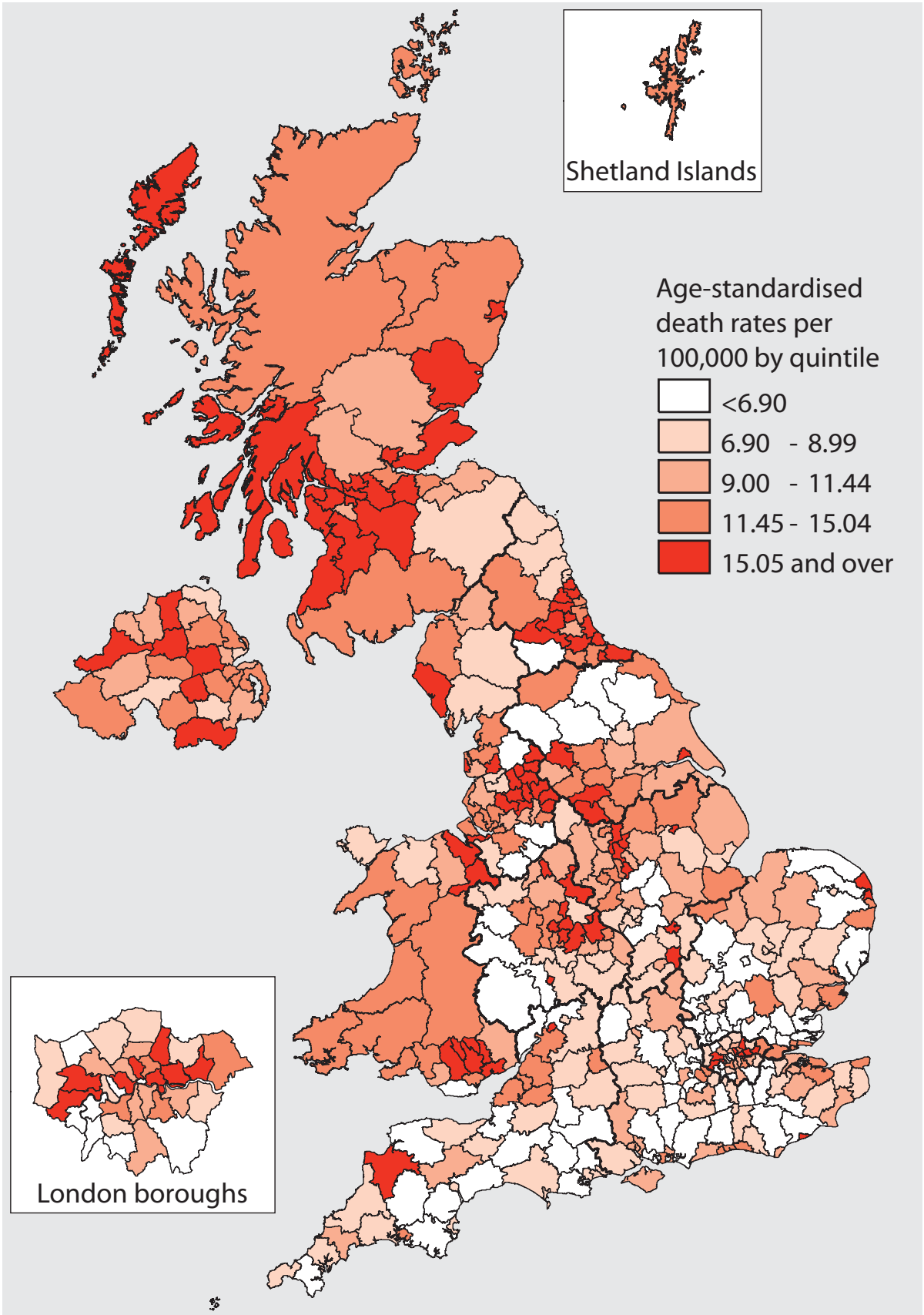


Table 1.8 Age-standardised death rates per 100,000 population from CHD and stroke, by sex and social class, 1976/81-1986/92, England and Wales

		Men			Women		
		1976/81	1981/85	1986/92	1976/81	1981/85	1986/92
Coronary heart disease							
I/II	Professional/intermediate	246	185	160	39	45	29
IIIN	Skilled non-manual	382	267	162	56	57	39
IIIM	Skilled manual	309	269	231	85	67	59
IV/V	Partly skilled/unskilled	363	293	266	105	76	78
Total non-manual		291	212	161	44	49	33
Total manual		345	285	255	98	73	72
Ratio manual:non-manual		***1.19***	***1.34***	***1.58***	***2.23***	***1.49***	***2.18***
Stroke							
I/II	Professional/intermediate	45	28	29	26	19	14
IIIN	Skilled non-manual	38	46	27	36	29	22
IIIM	Skilled manual	41	45	33	36	32	18
IV/V	Partly skilled/unskilled	54	59	40	42	41	34
Total non-manual		42	34	28	29	23	17
Total manual		50	54	38	40	38	29
Ratio manual:non-manual		***1.19***	***1.59***	***1.36***	***1.38***	***1.65***	***1.71***

Men and women aged 35-64.

Source: Office for National Statistics (1997) Health Inequalities. The Stationery Office: London.

Fig 1.8 Death rates from CHD by social class, men and women aged 35-64, 1976/81-1986/92, England and Wales

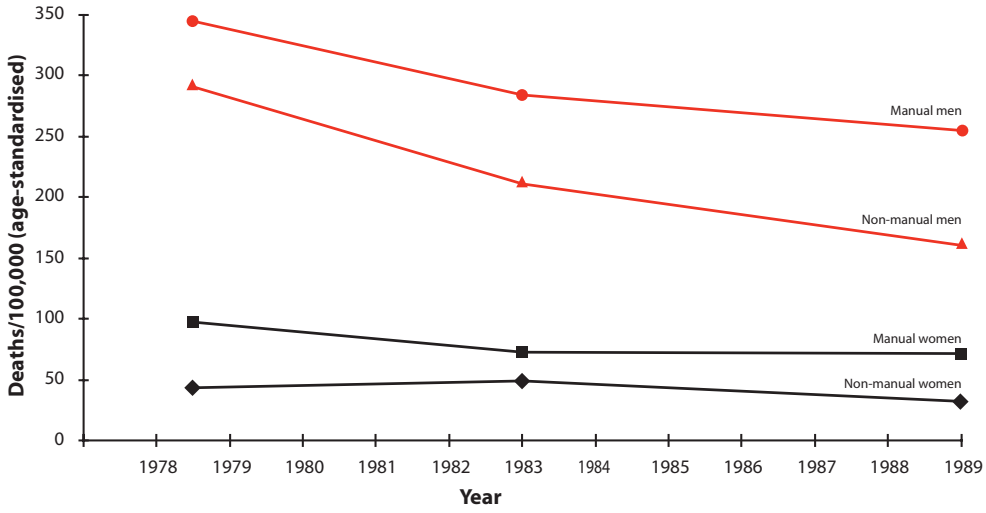


Table 1.9 Estimates of the numbers of deaths and working years lost per year due to social class inequalities in mortality, selected causes, men aged 20-64, 1991/93, England and Wales

	Numbers of deaths	Working years lost	Proportion of deaths from these diseases
Coronary heart disease	**5,000**	**47,000**	**28%**
Accidents etc	1,500	41,000	43%
Suicide etc	1,300	39,000	40%
Lung cancer	2,300	16,500	42%
Other neoplasms	1,700	21,000	13%
Respiratory disease	1,500	12,500	47%
Stroke	900	9,000	32%
All diseases	17,200	240,000	29%

Estimates assume all men have mortality rates as for Registrar General social classes I and II.

Source: Acheson D (1998) Independent Inquiry into Inequalities in Health Report. The Stationery Office: London.

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
MEN AGED 20-69				
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
WOMEN AGED 20-69				
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.

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

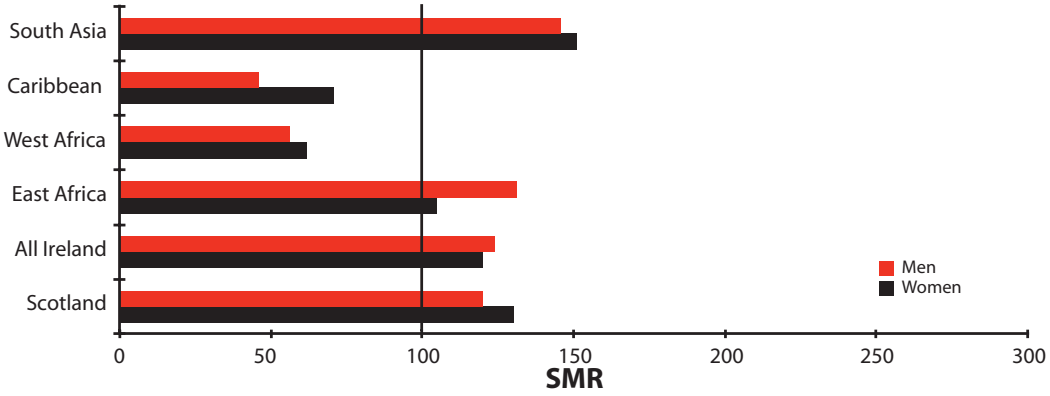


Fig 1.10b Standardised mortality ratios for stroke by sex and country of birth, 1989/92, England and Wales

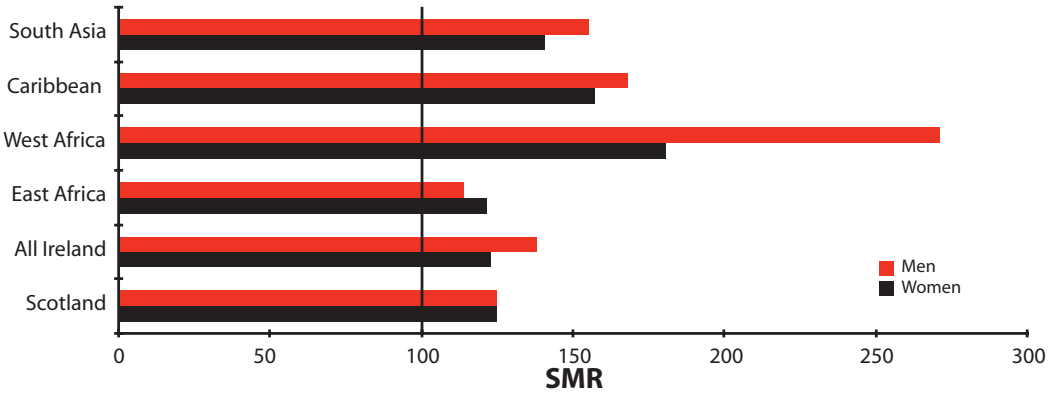


Table 1.11 Deaths from CHD by sex, age and month, August 2003 - July 2004, England and Wales

	Males					Females					All				
	0-64	65-74	75-84	85+	Total	0-64	65-74	75-84	85+	Total	0-64	65-74	75-84	85+	Total
August 2003	801	1,064	1,509	726	4,100	185	490	1,305	1,427	3,407	986	1,554	2,814	2,153	7,507
September 2003	733	1,003	1,524	759	4,019	193	478	1,247	1,416	3,334	926	1,481	2,771	2,175	7,353
October 2003	843	1,090	1,721	888	4,542	202	524	1,351	1,568	3,645	1,045	1,614	3,072	2,456	8,187
November 2003	860	1,154	1,781	864	4,659	221	581	1,477	1,582	3,861	1,081	1,735	3,258	2,446	8,520
December 2003	991	1,237	1,946	1,015	5,189	286	574	1,602	1,774	4,236	1,277	1,811	3,548	2,789	9,425
January 2004	892	1,201	1,960	1,044	5,097	200	550	1,619	1,739	4,108	1,092	1,751	3,579	2,783	9,205
February 2004	779	1,037	1,655	857	4,328	170	463	1,352	1,486	3,471	949	1,500	3,007	2,343	7,799
March 2004	848	1,086	1,787	872	4,593	211	528	1,360	1,599	3,698	1,059	1,614	3,147	2,471	8,291
April 2004	799	1,079	1,603	816	4,297	197	476	1,277	1,503	3,453	996	1,555	2,880	2,319	7,750
May 2004	914	1,012	1,631	753	4,310	208	482	1,310	1,344	3,344	1,122	1,494	2,941	2,097	7,654
June 2004	755	955	1,526	721	3,957	187	408	1,199	1,368	3,162	942	1,363	2,725	2,089	7,119
July 2004	774	958	1,480	763	3,975	197	419	1,235	1,389	3,240	971	1,377	2,715	2,152	7,215
Total	9,989	12,876	20,123	10,078	53,066	2,457	5,973	16,334	18,195	42,959	12,446	18,849	36,457	28,273	96,025

Source: Office for National Statistics (2005) personal communication.

Fig 1.11 Deaths from CHD by sex and month, 2003/04, England and Wales

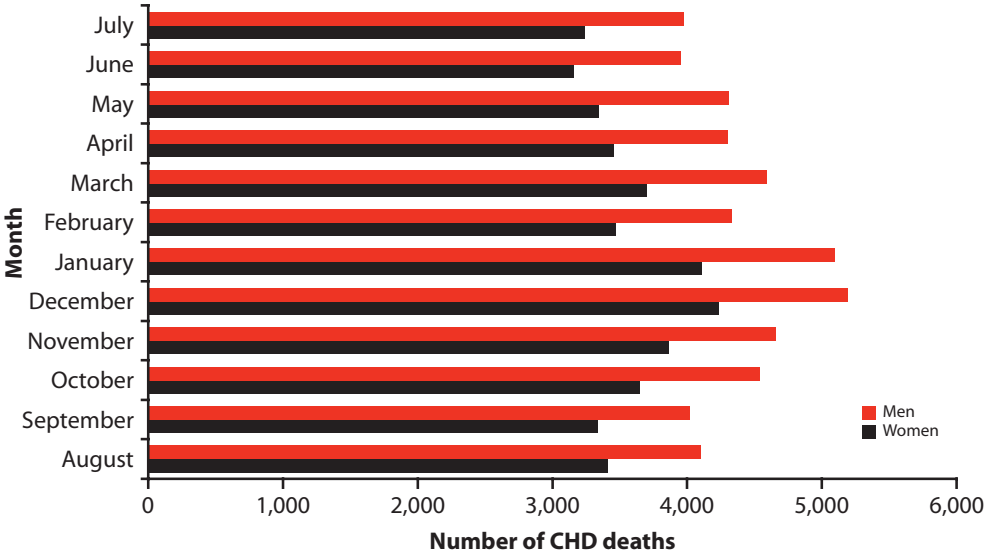


Table 1.12 Excess winter deaths from CHD by sex, age and Government Office Region of usual residence, 2003/04, England and Wales

		Total	Males	Females	Excess winter deaths index Persons
England and Wales	0-64	340	270	60	8.1
	65-74	680	430	250	10.7
	75-84	1,650	960	700	14.6
	85+	1,560	710	850	15.2
	All ages	**3,960**	**2,240**	**1,720**	**13.4**
North East	0-64	10	10	0	5.4
	65-74	10	10	-10	1.7
	75-84	100	40	60	14.3
	85+	60	30	20	13.6
	All ages	**180**	**100**	**80**	**10.0**
North West	0-64	70	60	10	10.2
	65-74	130	90	40	13.1
	75-84	290	170	120	17.6
	85+	190	70	120	15.8
	All ages	**680**	**390**	**290**	**15.1**
Yorkshire and the Humber	0-64	70	50	20	16.8
	65-74	80	40	40	12.4
	75-84	180	90	90	14.7
	85+	160	70	90	18.2
	All ages	**480**	**250**	**240**	**15.4**
East Midlands	0-64	40	30	10	12.1
	65-74	20	20	0	3.1
	75-84	140	90	60	15.3
	85+	90	40	50	13.0
	All ages	**290**	**170**	**120**	**11.6**
West Midlands	0-64	70	70	0	15.7
	65-74	40	30	10	6.1
	75-84	200	80	120	17.4
	85+	140	70	70	17.9
	All ages	**460**	**260**	**200**	**14.8**
East	0-64	0	0	-10	-1.3
	65-74	90	50	40	16.9
	75-84	120	70	50	10.0
	85+	150	100	50	15.9
	All ages	**350**	**220**	**130**	**11.7**
London	0-64	60	30	30	13.1
	65-74	50	50	0	8.2
	75-84	150	80	70	13.6
	85+	150	80	80	18.2
	All ages	**410**	**240**	**180**	**13.7**
South East	0-64	20	20	0	4.5
	65-74	50	30	20	6.3
	75-84	210	120	90	12.5
	85+	240	70	170	16.3
	All ages	**520**	**240**	**280**	**11.8**
South West	0-64	20	20	0	5.4
	65-74	50	60	-10	9.2
	75-84	200	150	50	16.4
	85+	120	40	80	10.4
	All ages	**380**	**270**	**110**	**11.9**
Wales	0-64	0	-10	10	1.3
	65-74	100	30	60	25.7
	75-84	100	80	20	12.9
	85+	140	60	80	25.5
	All ages	**340**	**170**	**170**	**17.4**
England	0-64	310	250	70	10.3
	65-74	410	270	140	8.9
	75-84	1,200	580	610	14.2
	85+	1,070	500	570	17.4
	All ages	**2,990**	**1,600**	**1,390**	**13.5**

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 (2005) 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[1], available on the *www.heartstats.org* website.

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 55,000 heart attacks per year in men aged under 75 living in the UK and 20,000 in women giving a total of 75,000[2].

Table 2.1 shows that the incidence rate of heart attack is between two and two and a half times the mortality rate. Using 2004 CHD mortality data, we therefore estimate there are about 128,000 heart attacks in men of all ages and about 103,000 in women, giving a total of about 231,000.

Further data from the Oxford Myocardial Infraction Incidence (OXMIS) Study show that the incidence rate of heart attack is higher in men than in women and increases with age[3]. 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 Figs 2.2a and 2.2b).

b) Angina

Different studies give different estimates of the incidence of angina (Table 2.3). Using data from Morbidity Statistics from General Practice we estimate there are about 183,000 new cases of angina in all men living in the UK and about 161,000 in women giving a total of

about 345,000[2]. 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 36,000 new cases of heart failure in men in the UK each year and about 30,000 in women giving a total of about 66,000[2].

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

Prevalence

a) Myocardial infarction

Different studies give different estimates for the prevalence of a previous heart attack (Table 2.5 and Table 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 600,000 men aged under 75 living in the UK who have had a heart attack and about 189,000 women giving a total of about 789,000[2].

We further estimate that overall (at all ages) there are about 870,000 men living in the UK who have had a heart attack and about 419,000 women giving a total of almost 1.3 million[2].

Prevalence of heart attack increases with age and is higher in men than in women (Table 2.5 and Table 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 England (Table 2.7).

Figures from the 2003 Health Survey for England suggest that about 8% of men and 5% of women aged 55-64 and about 17% of men and 8% of women aged 65-74 have or have had angina (Table 2.7). From these prevalence rates we estimate that there are about 760,000 men aged under 75 living in the UK who have or have had angina and about 428,000 women giving a total of just under 1.2 million[2].

Combined data from these prevalence studies suggest that overall about 5% of men and 3% of women have or have had angina. From these prevalence rates we estimate that there are over 1 million men living in the UK who have or have had angina and over 840,000 women giving a total of just under 2 million[2].

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 376,000 men aged 45 and over living in the UK with definite heart failure, and 301,000 women, giving a total of around 676,500[2]. If probable cases of heart failure are included, there are an estimated 506,000 men and 406,000 women, a total of 912,000 people aged 45 and over who have heart failure in the UK today[2].

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 75-84 years and 15% of those aged 85 and above (Table 2.9).

d) All coronary heart disease

Data from the 2003 Health Survey for England suggest the prevalence of CHD in England is 7.4% in men and 4.5% in women. Prevalence rates increase with age, with around 1 in 4 men and 1 in 5 women aged 75 years and above living with CHD.

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

Data from the General Household Survey allow comparisons to be made between the prevalence of cardiovascular diseases and conditions with that of other diseases and conditions. In 2004, CVD was the second most commonly reported longstanding illness in Great Britain (after musculoskeletal conditions) (Table and Fig 2.10).

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 is higher in the North of England and in Wales than it is in the South of England[1], and is also higher in lower socio-economic groups[1].

The 2004 Health Survey for England, which focused specifically on the health of minority ethnic groups, suggests that the prevalence of all CHD is higher in Indian and Pakistani men. The prevalence of all CHD in Black Caribbean and Chinese men is much lower than in the general population. In women there is less ethnic variation in the prevalence of all CHD, with only Chinese women having levels of all CHD which are lower than those found in women in the general population (Table 2.11).

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 2.12 and Fig 2.12). These increases were found in the majority of age groups in both men and women, with the most consistent increases 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 35% in those aged 65-74 and 27% in those aged 75 and over (Table 2.13 and Fig 2.13).

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.

Public health targets

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

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*
2. *These estimates are derived from applying age-specific rates to the UK population estimates for 2004, 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).*
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 1.1 million.*

Table 2.1 Incidence of myocardial infarction, adults aged between 30 and 69, latest available year, UK studies compared

Source	Study	Year	Place	Sex	Age group	Incidence/ 100,000	Mortality/ 100,000	Incidence/ mortality
Volmink et al, 1998	OXMIS	1994/95	Oxfordshire	Men	35-64	273		
				Women	35-64	66		
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	1983/95	Great Britain	Men	45-59*	950	426	2.23

* at start of follow up (1983/85)

Some rates were age-standardised. See sources for methods of age-standardisation and definitions of MI.

Sources: *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, Whincup PH, Wannamathee SG, Shaper AG, Walker M, Ebrahim S (2000) The natural history of prevalent ischaemic heart disease in middle-aged men. European Heart Journal 21; 1052-1062.

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

			MEN				WOMEN			
MONICA population	MONICA population code	Survey years	Coronary event rate Events per 100,000	Coronary case fatality rate % of fatalities within 28 days	Annual change in coronary event rate %	Annual change in coronary case fatality rate %	Coronary event rate Events per 100,000	Coronary case fatality rate % of fatalities within 28 days	Annual change in coronary event rate %	Annual change in coronary case fatality rate %
Australia-Newcastle	AUS-NEW	1985/93	479	40.6	-5.1	-2.2	153	40.9	-5.6	-3.0
Australia-Perth	AUS-PER	1984/93	389	36.8	-3.1	-1.5	92	41.7	-2.2	-2.3
Belgium-Charleroi	BEL-CHA	1983/92	487	50.1	0.3	-1.8	118	59.3	1.1	-1.8
Belgium-Ghent	BEL-GHE	1983/92	346	47.4	-3.2	-1.6	77	58.0	-3.0	-1.8
Canada-Halifax County	CAN-HAL	1984/93	523	37.5	-4.7	-1.5	139	33.6	0.5	-4.6
China-Beijing	CHN-BEI	1984/93	81	58.8	2.3	1.1	35	73.6	-0.5	1.3
Czech Republic	CZE-CZE	1984/93	515	52.8	-0.4	0.7	101	53.9	2.1	-1.2
Denmark-Glostrup	DEN-GLO	1982/91	517	52.5	-4.2	1.5	140	58.0	-2.5	2.5
Finland-Kuopio Province	FIN-KUO	1983/92	718	45.7	-6.0	1.0	124	38.7	-4.5	1.0
Finland-North Karelia	FIN-NKA	1983/92	835	48.1	-6.5	-0.5	145	41.3	-5.1	-0.2
Finland-Turku/Loimaa	FIN-TUL	1983/92	549	48.5	-4.2	-0.2	94	48.9	-4.5	-1.9
France-Lille	FRA-LIL	1985/94	298	58.7	-1.1	-0.3	64	69.5	-1.6	0.8
France-Strasbourg	FRA-STR	1985/93	292	49.0	-3.9	-1.7	64	57.1	-6.6	-2.3
France-Toulouse	FRA-TOU	1985/93	233	40.0	-2.1	-3.8	36	59.8	-1.7	-3.6
Germany-Augsburg	GER-AUG	1985/94	286	55.1	-3.2	1.3	63	64.6	0.9	-0.4
Germany-Bremen	GER-BRE	1985/92	361	49.6	-3.4	-0.9	81	52.0	0.7	-2.9
Germany-East Germany	GER-EGE	1985/93	370	50.0	-0.5	1.7	78	62.8	2.5	-2.2
Iceland	ICE-ICE	1981/94	486	36.9	-4.7	-2.1	99	34.1	-3.7	-1.0
Italy-Area Brianza	ITA-BRI	1985/94	279	40.7	-2.3	-0.8	42	52.5	-3.5	-4.8
Italy-Friuli	ITA-FRI	1984/93	253	45.1	-0.9	-2.0	47	49.9	-0.8	-2.0
Lithuania-Kaunas	LTU-KAU	1983/92	498	54.8	1.2	1.0	80	53.7	2.7	-1.2
New Zealand-Auckland	NEZ-AUC	1983/91	434	49.5	-5.1	-0.6	115	51.4	-3.5	0.6
Poland-Tarnobrzeg Vovoidship	POL-TAR	1984/93	461	82.7	1.1	1.2	110	88.4	-0.1	-0.7
Poland-Warsaw	POL-WAR	1984/94	586	59.9	-0.8	-0.4	153	59.2	1.0	-2.1
Russia-Moscow (control)	RUS-MOC	1985/93	477	60.7	-1.0	3.0	92	60.2	-6.7	1.5
Russia-Novosibirsk (control)	RUS-NOC	1984/92	464	59.9	0.9	-0.1	111	66.5	2.3	0.3
Spain-Catalonia	SPA-CAT	1985/94	210	36.7	1.8	-1.7	35	45.5	2.0	1.5
Sweden-Gothenburg	SWE-GOT	1984/94	363	43.6	-4.2	0.3	84	45.4	-3.7	1.2
Sweden-Northern Sweden	SWE-NSW	1985/95	509	36.1	-5.1	-2.9	119	34.4	-2.4	0.4
Switzerland-Ticino	SWI-TIC	1985/93	290	33.5	-2.6	-4.2				
Switzerland-Vaud/Fribourg	SWI-VAF	1985/93	231	38.4	-3.6	-3.0				
United Kingdom-Belfast	UNK-BEL	1983/93	695	41.0	-4.6	-1.5	188	41.5	-2.4	-1.7
United Kingdom-Glasgow	UNK-GLA	1985/94	777	48.2	-1.4	-1.3	265	46.4	0.2	-2.1
United States-Stanford	USA-STA	1980/92	431	47.9	-4.2	-1.6	134	53.7	-2.4	-0.4
Yugoslavia-Novi Sad	YUG-NOS	1984/95	422	51.9	0.4	-0.4	101	49.9	2.8	0.5

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, 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.

Fig 2.2a *Age-standardised coronary event rates, men aged 35-64, latest available data, MONICA Project populations*

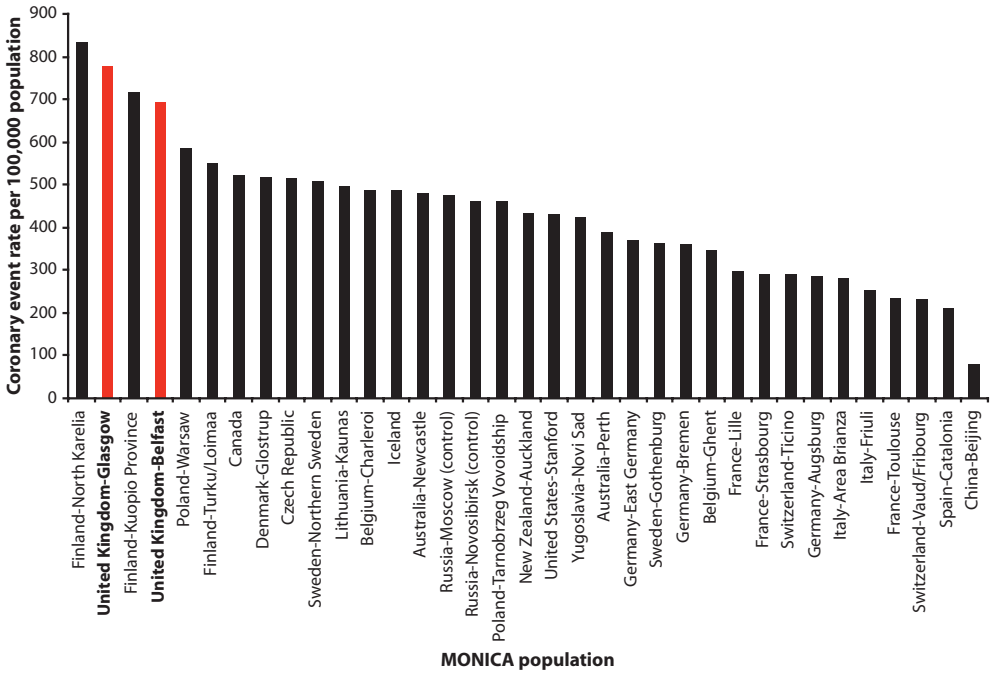


Fig 2.2b *Age-standardised coronary event rates, women aged 34-65, latest available data, MONICA Project populations*

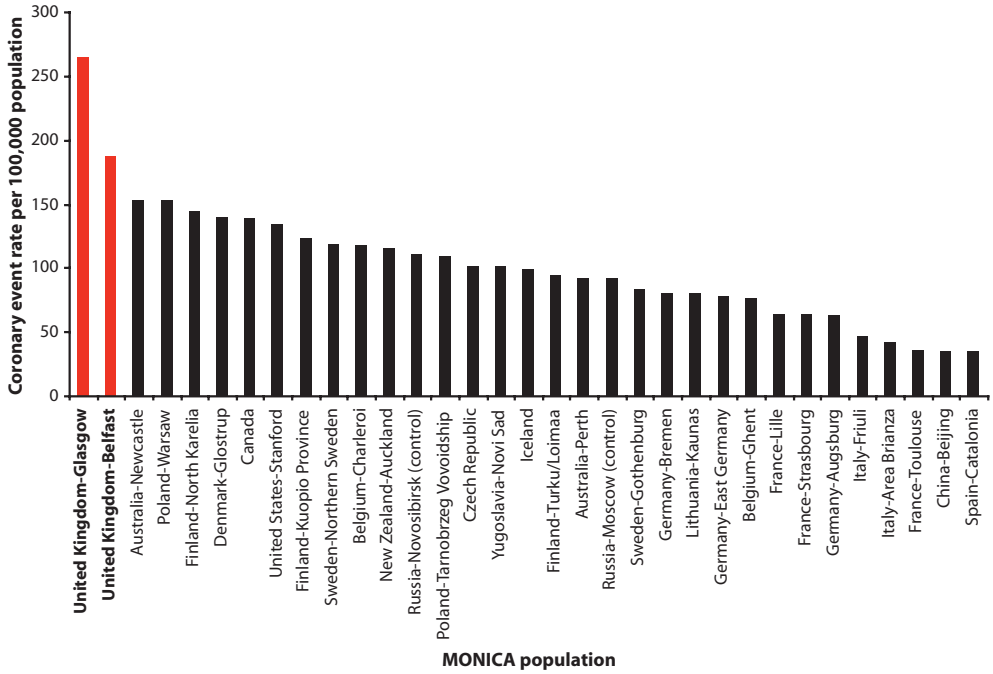


Table 2.3 Incidence of angina in adults, latest available year, UK studies compared

Source	Study	Year	Place	Sex	Age group	Incidence/ 100,000
Ghandi et al, 1995	Southampton Chest Pain Clinic Study	1990/92	Southampton	Men	31-40	40
					41-50	63
					51-60	147
					61-70	262
					Total	**113**
				Women	31-40	6
					41-50	47
					51-60	85
					61-70	91
					Total	**53**
Gill et al, 1999	One general practice in Oxford	1989/91	Oxford	Men	45-54	830
					55-64	1,353
					65-74	930
					Total	**1,043**
				Women	45-54	643
					55-64	1,257
					65-74	827
					Total	**903**
Royal College of General Practitioners et al, 1995	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
					Total	**550**
				Women	<25	0
					25-44	40
					45-64	660
					65-74	1,760
					75-84	2,240
					>85	2,150
					Total	**490**

Total population for Southampton Chest Pain Clinic Study 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).

Sources: *Ghandhi 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

Age group	Population	Number of cases	Incidence/1000 population
MEN			
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 & over	537	15	16.8
Total	**50,293**	**118**	**1.4**
WOMEN			
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 & over	1,435	23	9.6
Total	**51,592**	**102**	**1.2**
TOTAL			
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 & over	1,972	38	11.6
Total	101,885	220	1.3

Source: Cowie MR, Wood DA, Coats AJS, Thompson SG, Poole-Wilson PA, Suresh V, Sutton GC (1999) Incidence and aetiology of heart failure. A population-based study. European Heart Journal 20: 421-28.

Fig 2.4 Incidence of heart failure by sex and age, 1995/96, Hillingdon

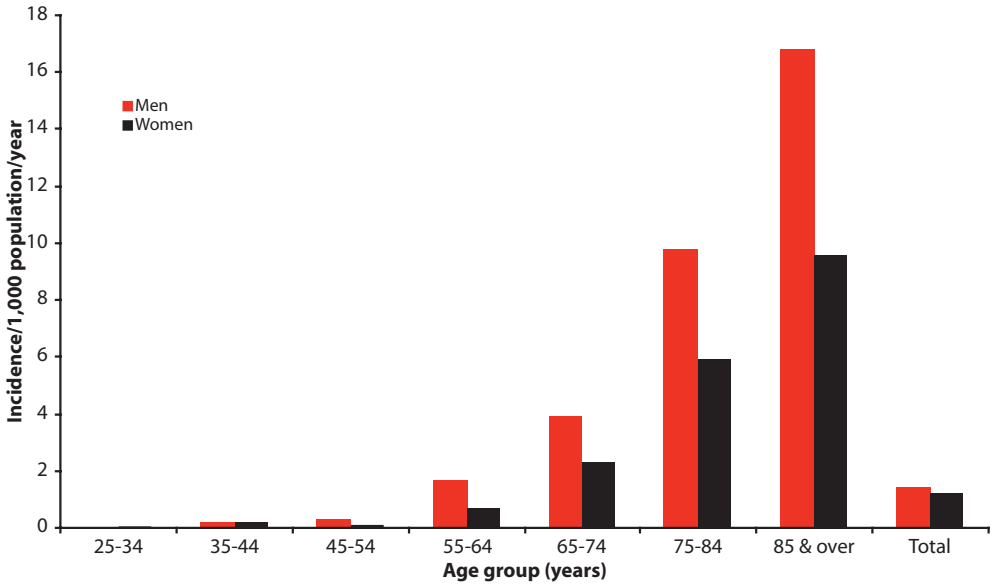


Table 2.5 Prevalence of myocardial infarction, adults aged between 55 and 74, latest available year, UK studies compared*

				MEN		WOMEN	
Source	**Study**	**Year**	**Place**	**55-64**	**65-74**	**55-64**	**65-74**
				%	**%**	**%**	**%**
Joint Health Surveys Unit, 1999	HSE	1998	England	8.4	11.6	2.4	5.5
Joint Health Surveys Unit, 2004	HSE	2003	England	6.7	12.1	2.1	4.2
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		

** 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.

Sources:

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 & over
	%	%	%	%	%	%	%	%
MEN								
Ever experienced								
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
Recently experienced (in last 12 months)								
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 mumur	1.1	0.8	0.4	1.0	0.6	1.4	1.9	3.7
Abnormal heart rythmn	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
Unweighted sample	*6,602*	*746*	*1,025*	*1,263*	*1,101*	*1,103*	*807*	*557*
Weighted base	*7,202*	*1,047*	*1,274*	*1,416*	*1,185*	*1,043*	*731*	*507*
WOMEN								
Ever experienced								
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
Recently experienced (in last 12 months)								
Angina	2.0	-	-	0.1	1.1	2.8	4.7	9.4
Myocardial infarction	0.2	-	-	-	-	0.5	0.2	1.1
Heart mumur	1.3	0.8	0.7	0.7	1.4	1.1	2.0	2.9
Abnormal heart rythmn	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
Unweighted sample	*8,234*	*890*	*1,285*	*1,618*	*1,279*	*1,307*	*952*	*903*
Weighted base	*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 55-64 %	MEN 65-74 %	WOMEN 55-64 %	WOMEN 65-74 %
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

** 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.

Sources:
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, Dawes M and 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

				MEN				WOMEN			
Source	**Study**	**Year**	**Place**	**45-54 %**	**55-64 %**	**65-74 %**	**75-84 %**	**45-54 %**	**55-64 %**	**65-74 %**	**75-84 %**
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

** for those aged 45-64 years*
*** for those aged 75 & over*

Sources:

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: 77-9;

McDonagh TA, Morrison CE, Lawrence A, Ford I, Tunstall-Pedoe H, McMurray JJV (1997) Syptomatic and asymptomatic left ventricular systolic dysfunction in an urban population. The Lancet 350: 829-33;

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

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: 439-44.

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

Age group	Number with definite heart failure	Number without definite heart failure	% with definite heart failure
MEN			
45-54	2	633	0.3
55-64	17	623	2.7
65-74	20	480	4.2
75-84	15	205	7.3
85 & over	5	23	21.7
Total	**59**	**1,964**	**3.0**
WOMEN			
45-54	0	681	0.0
55-64	5	571	0.9
65-74	8	472	1.7
75-84	15	229	6.6
85+	5	43	11.6
Total	**33**	**1,996**	**1.7**
ALL			
45-54	2	1,314	0.2
55-64	22	1,194	1.8
65-74	28	952	2.9
75-84	30	434	6.9
85 & over	10	66	15.2
Total	**92**	**3,960**	**2.3**

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: 439-44.

Table 2.10 Percentage reporting longstanding illness by sex, age and condition group, 2004, Great Britain

		All ages	16-44	45-64	65-74	75 & over
Heart and circulatory system (VII)	Men	11.1	1.4	14.6	29.5	37.3
	Women	11.0	1.7	13.2	26.6	31.9
	Total	**11.0**	**1.5**	**13.9**	**28.0**	**34.0**
Heart attack	Men	2.3	0.0	2.6	8.4	8.3
	Women	1.8	0.0	1.8	5.1	6.7
Other heart complaints	Men	3.2	0.5	4.4	7.5	10.6
	Women	2.9	0.6	3.1	6.6	9.4
Hypertension	Men	3.8	0.6	5.9	9.2	8.7
	Women	4.8	0.8	6.8	11.9	10.7
Other blood vessel/ embolic disorders	Men	0.8	0.1	0.8	2.4	3.3
	Women	0.7	0.2	0.9	1.5	1.9
Stroke	Men	0.8	0.1	0.8	1.7	5.4
	Women	0.6	0.0	0.5	1.2	2.8
Musculoskeletal system (XIII)	Men	13.3	6.6	19.4	21.3	22.2
	Women	16.0	6.1	20.9	29.1	34.3
	Total	**14.7**	**6.3**	**20.1**	**25.4**	**29.6**
Arthritis and rheumatism	Men	5.2	1.1	7.9	11.0	13.6
	Women	8.5	1.5	11.2	19.4	22.3
Back problems	Men	4.4	2.8	7.1	5.9	2.1
	Women	3.6	2.6	5.6	3.7	2.6
Other bone and joint problems	Men	3.7	2.6	4.4	4.3	6.5
	Women	3.8	2.0	4.1	6.0	9.4
Respiratory system (VIII)	Men	6.3	5.6	5.5	10.3	9.8
	Women	6.4	5.3	6.6	9.1	8.3
	Total	**6.4**	**5.4**	**6.0**	**9.7**	**8.9**
Asthma	Men	4.0	4.6	3.1	4.3	3.4
	Women	4.8	4.3	5.2	5.7	4.9
Bronchitis and emphysema	Men	0.8	4.6	3.1	4.3	3.4
	Women	0.5	0.2	0.4	1.5	1.4
Hay fever	Men	0.4	0.6	0.2	0.2	0.0
	Women	0.3	0.4	0.3	0.2	0.0
Other respiratory complaints	Men	1.2	0.4	1.5	2.4	3.5
	Women	0.8	0.4	0.6	1.7	2.0
Endocrine and metabolic (III)	Men	4.7	1.4	6.4	11.0	11.6
	Women	5.6	2.1	8.4	10.9	8.9
	Total	**5.2**	**1.7**	**7.4**	**11.0**	**10.0**
Digestive system (IX)	Men	2.6	1.2	3.7	2.8	4.2
	Women	3.2	2.0	3.6	4.7	5.8
	Total	**2.9**	**1.7**	**3.6**	**4.4**	**5.5**
Nervous system (VI)	Men	2.8	2.0	3.7	2.8	4.2
	Women	2.8	2.2	3.6	3.4	2.9
	Total	**2.8**	**2.1**	**3.7**	**3.1**	**3.4**
Any longstanding illness	Men	34.0	2.0	4.3	5.7	6.3
	Women	36.0	2.2	4.2	5.5	6.3
	Total	**35.0**	**2.1**	**4.3**	**5.6**	**6.3**
Weighted bases (000's)	*Men*	*21,997*	*11,172*	*6,948*	*2,293*	*1,584*
	Women	*23,691*	*11,523*	*7,154*	*2,556*	*2,459*
Unweighted sample	*Men*	*7,695*	*3,708*	*2,510*	*870*	*607*
	Women	*8,480*	*4,071*	*2,688*	*924*	*797*

ICD chapters in parentheses.

Data are weighted for non-response.

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

Fig 2.10 Percentage reporting longstanding illness by sex and condition group, 2004, Great Britain

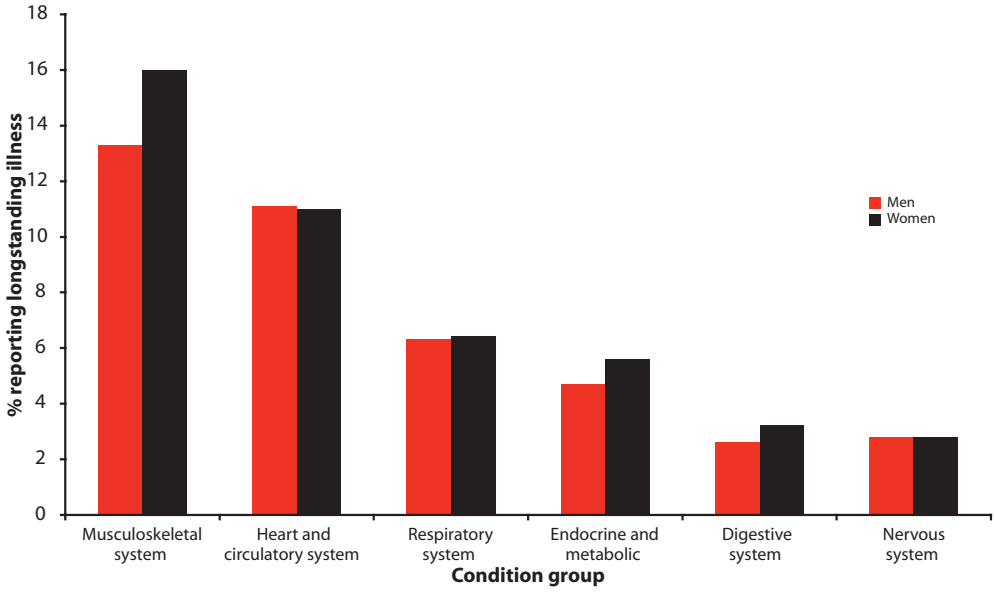


Table 2.11 Prevalence of cardiovascular conditions by sex and ethnic group, 2004, England

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

** data for the general population are from 2003.*

Adults aged 16 and above.

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 2.12 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+
MEN									
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
WOMEN									
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
Bases									
Men	*1998*	*7,177*	*968*	*1,434*	*1,329*	*1,127*	*1,001*	*877*	*441*
	1994	*7,193*	*875*	*1,338*	*1,305*	*1,289*	*987*	*837*	*562*
	2003	*6,602*	*746*	*1,025*	*1,263*	*1,101*	*1,103*	*807*	*557*
Women	*1998*	*8,627*	*1,080*	*1,723*	*1,520*	*1,300*	*1,059*	*1,120*	*825*
	1994	*8,715*	*1,006*	*1,630*	*1,573*	*1,484*	*1,148*	*967*	*907*
	2003	*8234*	*890*	*1,285*	*1,618*	*1,279*	*1,307*	*952*	*903*

Adults aged 16 and over.
Unweighted data for all years.

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

Fig 2.12 Changes in prevalence rates in CHD, stroke and CHD or stroke, between 1994 and 2003, England

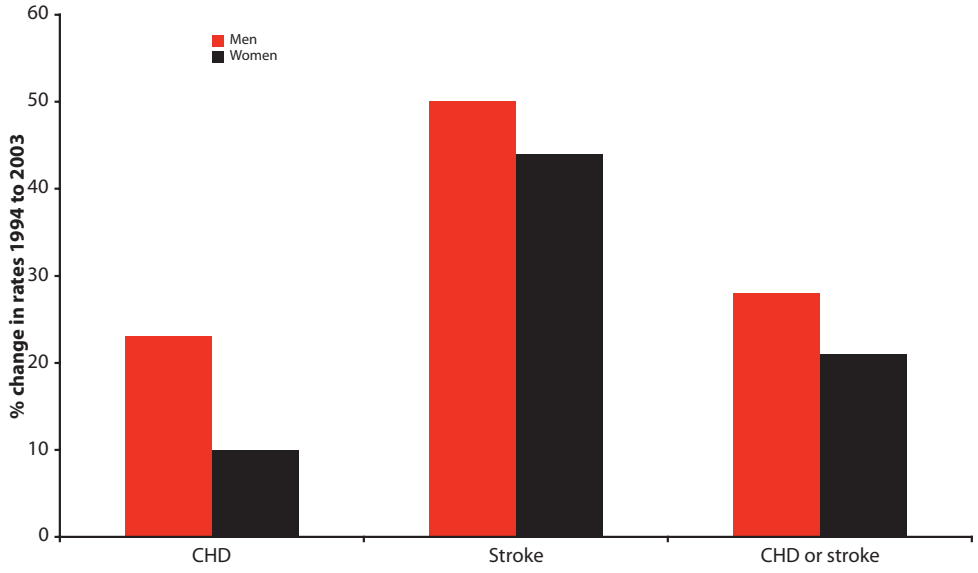


Table 2.13 Rates per 1,000 population reporting longstanding diseases of the circulatory system by sex and age, 1988 - 2004, Great Britain

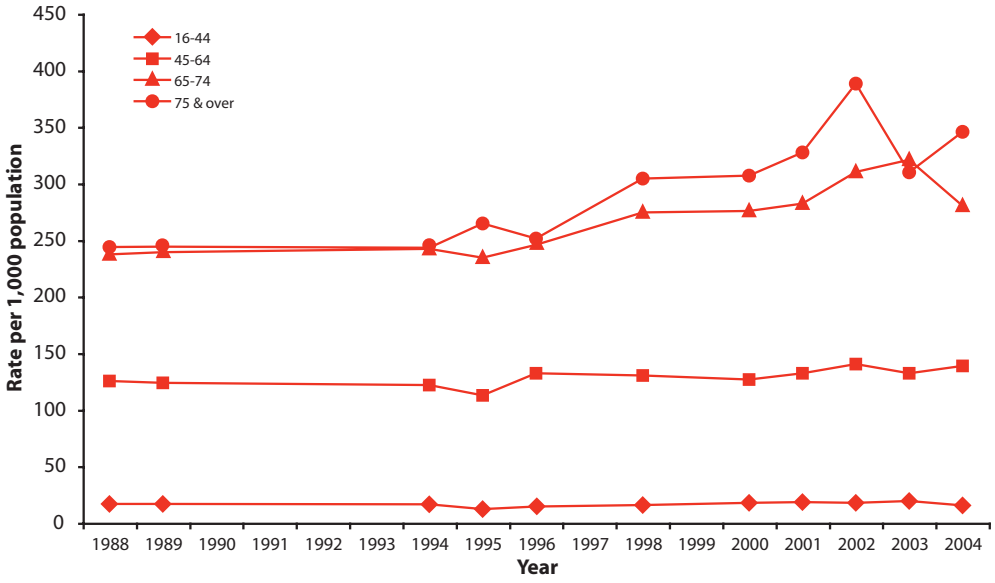
			All ages	16-44	45-64	65-74	75 & over
Heart attack	Men	1988	22	2	47	75	82
		1989	23	2	46	100	79
		1994	23	1	31	66	81
		1995	25	1	34	92	54
		1996	23	1	30	66	75
		1998	32	3	40	89	111
		2000	25	1	31	86	94
		2001	25	1	32	75	113
		2002	24	1	26	70	118
		2003	23	2	22	87	80
		2004	23	0	26	84	83
	Women	1988	17	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
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
	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
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
	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

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

Source: Office for National Statistics (2005) 2004 General Household Survey www.ons.gov.uk/ghs;

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

Fig 2.13 *Rate of reporting longstanding cardiovascular disease by age, 1988-2004, Great Britain*



3. Treatment

Prescriptions

There has been a significant increase in the number of prescriptions for the treatment and prevention of CVD in the last twenty years. Overall, in 2004, around 200 million prescriptions were issued for diseases of the circulatory system in England, four times as many as issued in 1983 (Table 3.1).

In the last ten years, the number of prescriptions for antiplatelet drugs has increased around four fold (over thirty fold in the last twenty years), and the number of prescriptions of lipid lowering drugs has increased around seventeen fold (over one hundred fold in the last 20 years) (Table 3.1 and Fig 3.1).

In 2004, the cost of prescriptions for lipid lowering drugs, including statins, was £769 million, an increase of £154 million since 2003. Lipid lowering drugs now cost the NHS more than any other class of drug (overtaking ulcer healing drugs in 2001)[1].

The cost of prescriptions for antihypertensive therapy increased by £34 million to £610 million between 2003 and 2004, making these the second most costly class of drug in the NHS[1]. 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 also 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 30,000 operations were carried out in the UK (Table 3.2). The number of percutaneous coronary interventions (PCI) is increasing at an even faster rate and just less than 63,000 are now carried out annually in the UK. This represents a four fold increase over the last decade and an 21% increase between 2003 and 2004 (Table 3.3 and Fig 3.3).

However, 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[2]. These maps and associated tables are available at *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[3].

Inpatient hospital cases

Overall, there were around 421,000 inpatient cases treated for CHD in National Health Service

hospitals in 2004/05 (Table 3.4). These represent 5% of all inpatient cases in men and 2% in women (Figs 3.4a and 3.4b).

The number of inpatient cases treated for CHD has increased by almost 11% in the last four years[4].

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[5]. 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[6]. It is estimated that between 1200 and 1500 consultant cardiologists will be needed by 2010[5].

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 3.5). 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 (Figs 3.5a and 3.5b).

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 3.6 and Fig 3.6).

National Service Framework for Coronary Heart Disease in England

The National Service Framework (NSF) for Coronary Heart Disease[7] was announced in March 2000, and sets national standards for the prevention, diagnosis and treatment of CHD in England (Table 3.7). The 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.

There were 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 529,000 in 2004/05, with around 298,000 (56%) reporting success at four weeks (Table 3.8)[8,9]. A further £138 million is being 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[8].

By June 2001, 150 rapid-access chest pain clinics were open across England[10].

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. By 2004/05, 25 out of 31 ambulance services (81%) had achieved this goal (Table 3.9)[11].

The NSF further outlined a number of immediate 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 80-90% 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)[12] 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[6].

MINAP data further show that in 2004, at least 90% of people discharged from hospital following a heart attack in England and Wales were prescribed aspirin, 71% beta blockers and 87% statins (Table 3.10)[13,14].

Between 2000 and 2002, the total number of revascularisation procedures in the UK increased by over 12,000, from 61,488 to 73,897 (Table 3.2 and Table 3.3).

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[15]. 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 CHD NSF[16]. 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 Statistical Division (2005) www.dh.gov.uk*
2. *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*
3. *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.*
4. *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.*
5. *Fifth report on the provision of services for patients with heart disease. Heart 2002; 88(Suppl III):iii1-iii59.*
6. *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*
7. *Department of Health (2000) National Service Framework for Coronary Heart Disease. The Stationery Office: London.*
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*
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*
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.*
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, which 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. See www.healthcarecommission.org.uk/assetRoot/04/01/51/84/04015184.pdf*

Table 3.1 Prescriptions used in the prevention and treatment of all diseases of the circulatory system, 1981-2004, England

Prescriptions (thousands)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Digoxin and other positive inotropic drugs (2.1)	4,243	4,134	4,023	4,003	3,878	3,722	3,718	3,624	3,558	3,548	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
Diuretics (2.2)	20,678	21,108	22,011	22,052	21,919	21,996	22,134	21,636	21,274	21,029	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
Anti-arrhythmic drugs (2.3)	232	256	284	330	319	334	388	397	423	459	532	568	614	673	750	840	941	1,047	1,138	1,214	1,292	1,338	1,343	1,325
Beta-adrenoreceptor blocking drugs (2.4)	9,827	10,627	11,458	11,815	12,288	12,525	12,723	12,937	13,241	13,183	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
Antihypertensive therapy (2.5)	4,912	4,699	4,603	4,581	4,403	4,424	4,442	4,419	4,824	5,371	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
Nitrates, calcium blockers and potassium activators (2.6)	5,156	5,673	6,611	7,719	8,998	10,314	11,790	12,867	13,908	14,726	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
Sympathomimetics (2.7)	15	13	17	12	7	6	4	10	37	27	19	15	12	10	8	7	6	5	4	3	2	2	3	4
Anticoagulants and protamine (2.8)	629	686	748	823	798	900	1,014	1,103	1,148	1,158	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
Antiplatelet drugs (2.9)	281	407	589	765	893	1,058	1,224	1,574	2,147	2,715	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
Anti-fibrinolytic drugs and haemostatics (2.11)																		215	242	267	282	289	300	310
Lipid regulating drugs (2.12)	295	267	243	242	244	247	294	413	522	735	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
Local sclerosants (2.13)																		1	1	1	1	0	0	0
All prescriptions for disease of the circulatory system	**46,267**	**47,870**	**50,586**	**52,342**	**53,747**	**55,526**	**57,731**	**58,980**	**61,082**	**62,952**	**70,041**	**72,951**	**76,495**	**81,016**	**85,220**	**91,044**	**97,029**	**105,131**	**116,152**	**129,030**	**145,134**	**162,046**	**179,872**	**200,598**

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: Department of Health Statistics Division (2005) www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT_ID=4115886&chk=%2Bmewp3

Fig 3.1 Prescriptions used in the prevention and treatment of diseases of the circulatory system, selected BNF paragraphs, 1981-2004, England

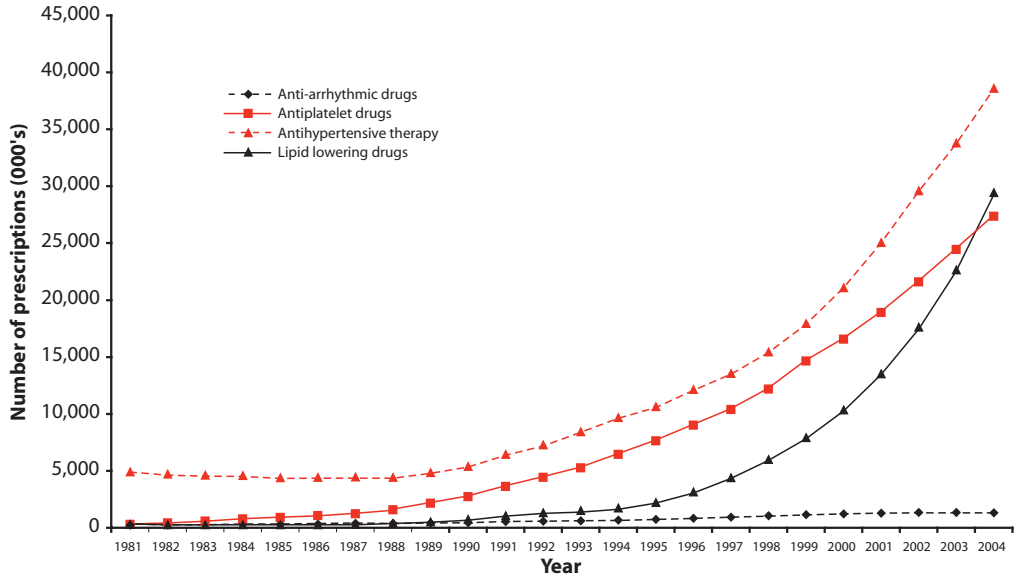


Table 3.2 Operations for CHD, 1977-2003, United Kingdom

	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
1994/5	22,056	2,282	175	24,513	5.3	3.5
1995/6	22,475	2,362	123	24,960	1.8	4.3
1996/7**	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	0.0

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 (2002) http://www.scts.org;

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.

Table 3.3 Percutaneous coronary intervention procedures, 1991-2004, United Kingdom

	Number of intervention centres	Total PCI procedures	Rate per million	Annual % increase	Success (%)	Mortality (%)
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	20.8	94	0.56

Source: British Cardiovascular Intervention Society (2005) www.bcis.org.uk

Fig 3.3 Number of coronary artery bypass operations and percutaneous coronary interventions per year, 1980-2004, United Kingdom

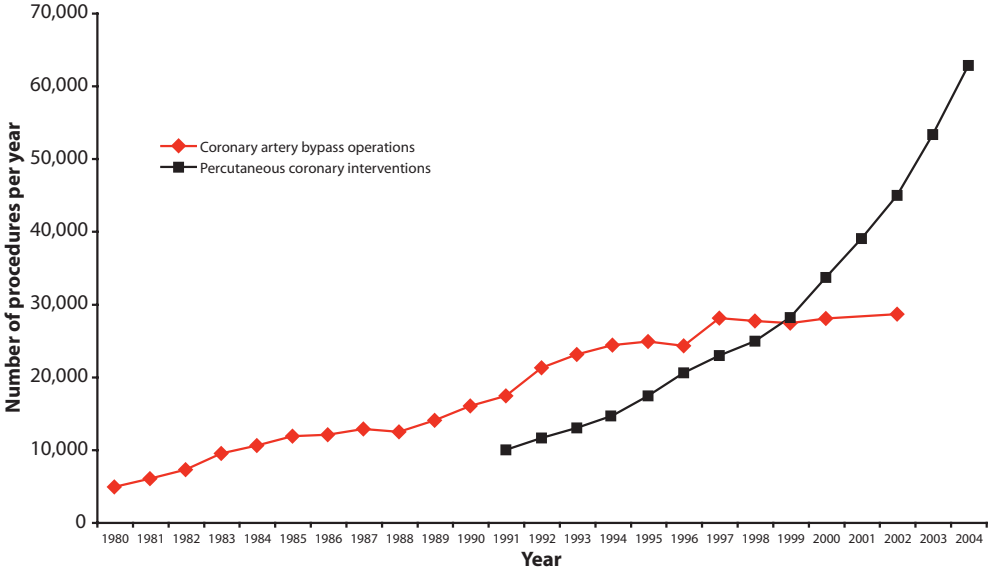


Table 3.4 Inpatient cases by main diagnosis, and sex, National Health Service hospitals, 2004/05, England

	Episodes of care			Days in hospital
	Men	Women	Total	Total days
All diagnoses	5,983,455	7,723,310	13,706,765	54,554,697
All diseases of the circulatory system (I00-I99)	665,671	529,229	1,194,900	7,470,397
Coronary heart disease (I20-I25)	271,326	150,071	421,397	1,830,984
Angina pectoris (I20)	77,346	56,133	133,479	452,282
Acute myocardial infarction (I21)	68,651	42,672	111,323	687,331
Chronic coronary heart disease (I25)	108,847	42,292	151,139	533,147
Heart failure (I50)	53,820	52,747	106,567	895,178
Stroke (I60-I69)	81,434	90,756	172,190	2,590,292
Diabetes (E10-E14)	39,478	31,717	71,195	355,737
All cancer (C00-D48)	699,809	723,601	1,423,410	4,325,696
Colo-rectal cancer (C18-C21)	94,287	65,676	159,963	575,115
Lung cancer (C33-C34)	53,619	36,284	89,903	399,042
Breast cancer (C50)	708	130,858	131,566	260,840
Bladder cancer (C67)	58,837	19,725	78,562	203,886
All diseases of the nervous system (G00-G99)	126,357	148,893	275,250	1,730,040
All diseases of the respiratory system (J00-J99)	449,517	427,934	877,451	4,217,437
All diseases of the digestive system (K00-K93)	697,825	718,120	1,415,945	3,653,359
All diseases of the genitourinary system (N00-N99)	330,874	516,181	847,055	2,370,653
Complications of pregnancy and childbirth (O00-O99)	0	1,277,954	1,277,954	2,002,435
Injury and poisoning (S00-T98)	456,516	421,203	877,719	5,245,502
All other diagnoses	2,517,408	2,928,478	5,445,886	23,183,441

Finished consultant episodes; ordinary admissions and day cases combined.

ICD codes (10th revision) in parentheses.

Source: Department of Health (2006) Hospital Episode Statistics 2004/05.
www.hesonline.nhs.uk/Ease/servlet/DynamicPageBuild;jsessionid=abcjqtyvt2?siteID=1802&categoryID=62

Fig 3.4a *Inpatient cases by main diagnosis, men, National Health Service hospitals, 2004/05, England*

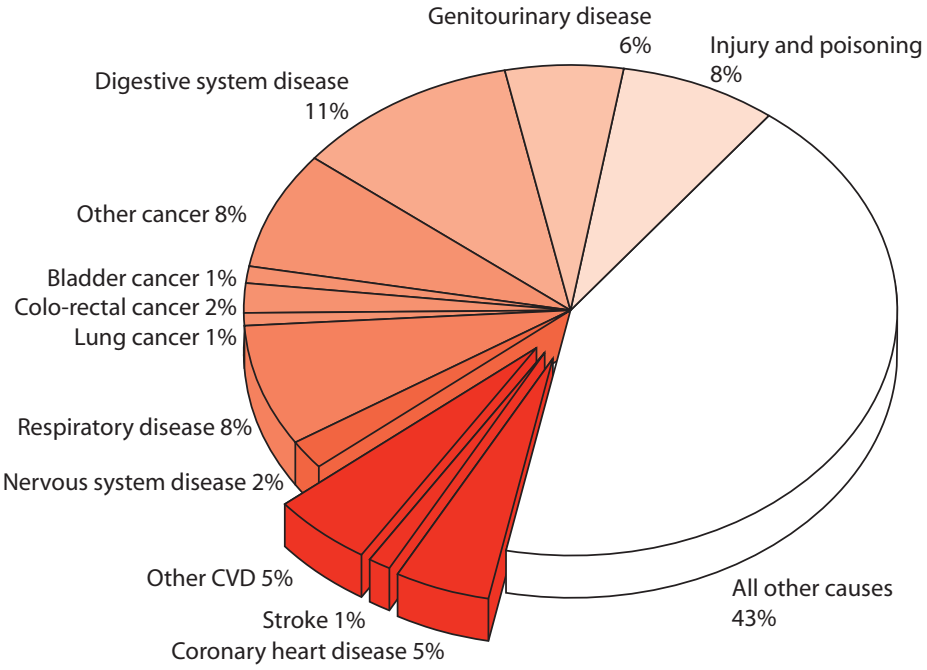


Fig 3.4b *Inpatient cases by main diagnosis, women, National Health Service hospitals, 2004/05, England*

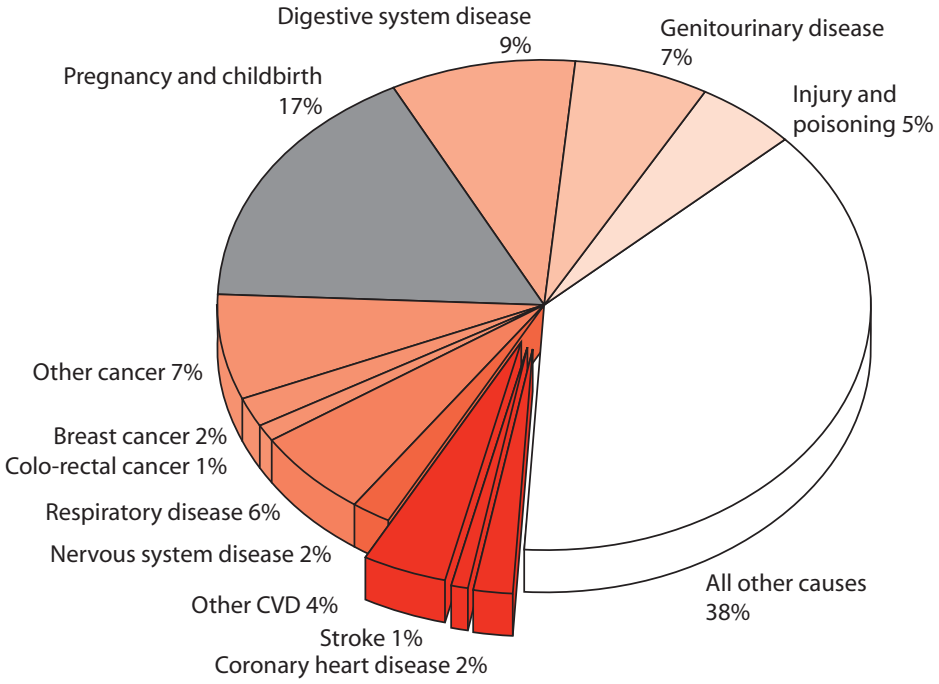


Table 3.5 Rates of various procedures for treating CVD, per million population, around 2000, Europe

	Coronary Angiograms	Percutaneous coronary interventions	Coronary stents	Open heart surgery	Valve surgery	Coronary artery bypass surgery	Pacemakers	Implantable cardioverter defibrillators
				Procedures per million population				
Austria	4,061	1,146	848	815		468		
Belgium	4,798	1,536	931	1,230			857	48
Bugaria	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
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

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.

Fig 3.5a *Rates of coronary artery bypass surgery, crude and adjusted for standardised mortality rates from CHD in adults aged 35-74, around 2000, Europe*

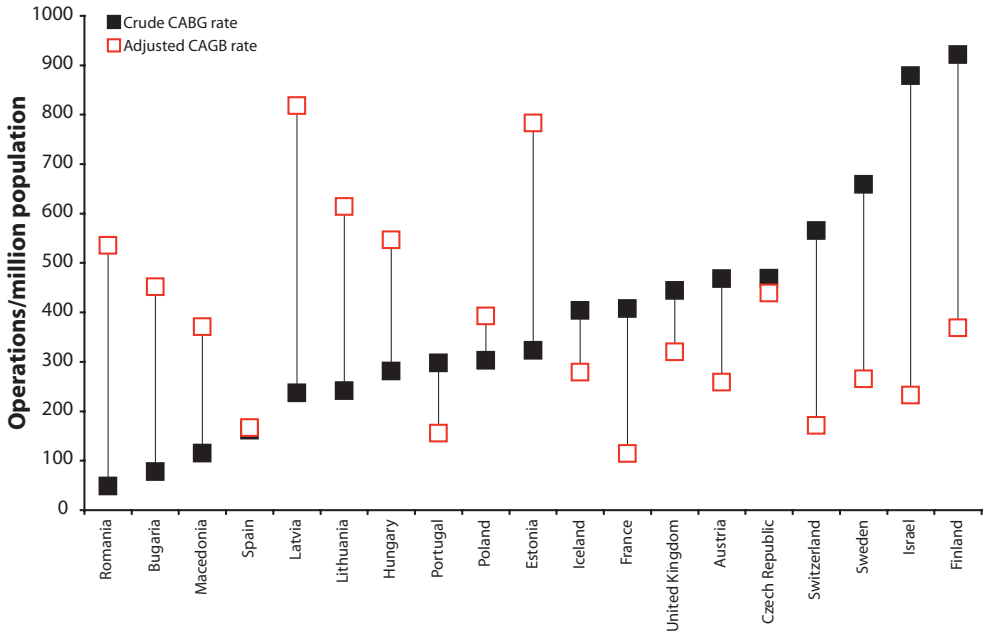


Fig 3.5b *Rates of percutaneous coronary interventions, crude and adjusted for standardised mortality rates from CHD in adults aged 35-74, around 2000, Europe*

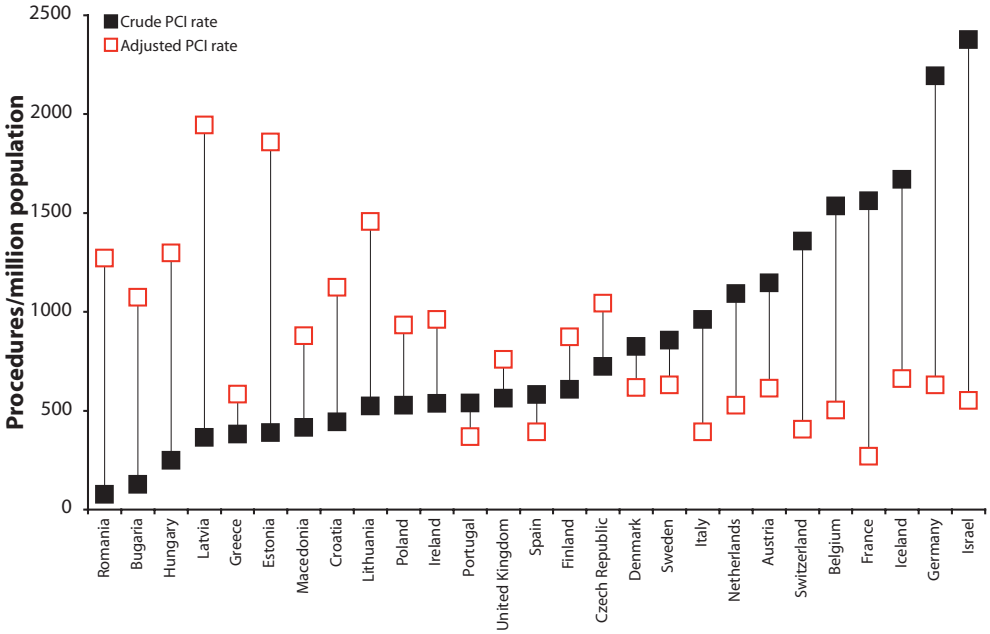


Table 3.6 Rates of percutaneous coronary interventions, per million population, 1990-2003, Europe

	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	
Latvia					21	31	45	135	193	315	365	448	520	681
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			
Romania						8	21	18	43	68	77		148	
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	

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.

Fig 3.6 Rates of percutaneous coronary interventions, per million population, 1990-2003, Europe

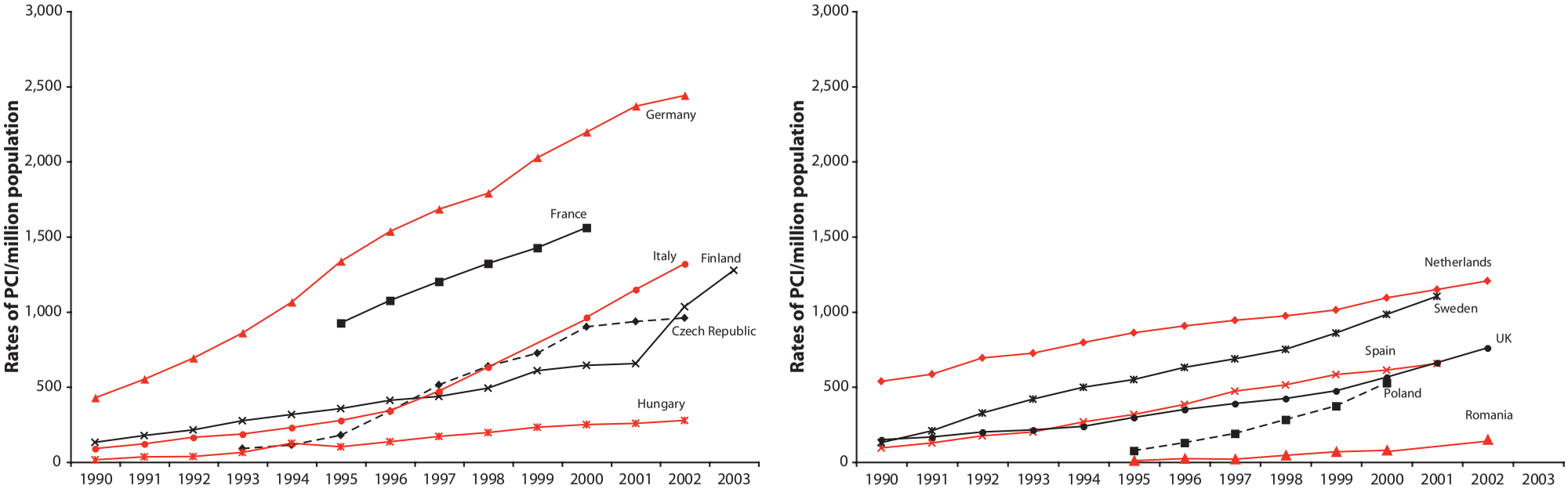


Table 3.7 National Service Framework (NSF) for Coronary Heart Disease: Standards and Quality Requirements table, England

NSF Area	NSF Standard/Quality Requirement[1]
Reducing heart disease in the population	**1.** *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. 2. *The NHS and partner agencies should* contribute to a reduction in the prevalence of smoking in the local population.
Preventing CHD in high risk patients	**3.** *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. **4.** *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.
Heart attack and other acute coronary symptoms	**5.** *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. **6.** *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. 7. *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.
Stable angina	**8.** *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.
Revascularisation	**9.** *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. 10. *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.

Heart failure	**11.** *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.
Cardiac rehabilitation	**12.** *NHS Trusts should* 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.** *People with arrhythmias should* 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.

Sources: 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 3.8 Outcome at 4 weeks and use of free Nicotine Replacement Therapy in people using National Health Service smoking cessation services, 1999/00 - 2004/05, England

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Total number setting a quit date	14,600	132,500	227,300	234,434	361,224	529,520
Number who had sucessfully quit at 4 week follow-up (self report)	5,800	64,600	119,800	123,881	204,876	297,828
% who had successfully quit at 4 week follow-up (self report)	***39%***	***49%***	***53%***	***53%***	***57%***	***56%***
% receiving Nicotine Replacement Therapy	***64%***	***36%***	***65%***	***76%***	***78%***	***81%***

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. In 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 (2005) Statistics on NHS stop smoking services in England, April 2004 to March 2005.See http://www.dh.gov.uk/assetRoot/04/11/52/94/04115294.pdf

Previous editions: Department of Health statistical press release (2003) Statistics on smoking cessation services in England, April 2002 to March 2003. See http://www.dh.gov.uk/assetRoot/04/07/62/33/04076233.PDF

Table 3.9 Emergency calls: responses within 8 minutes by Ambulance Service, 1999/00 - 2004/05, England

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

**From 2003/04 Shropshire Ambulance Services are part of West Midlands Ambulance Service.*

Source: Department of Health Statistical Bulletin (2005) Ambulance Services, England 2004-2005 and previous editions. See www.dh.gov.uk www.dh.gov.uk/assetroot/04/11/36/80/04113680.xls

Table 3.10 Use of aspirin, beta blockers, statins and ACE inhibitors on hospital discharge after a heart attack, 2004, England and Wales

	Aspirin		Beta blockers		Statins		ACE inhibitors	
	Number	%	Number	%	Number	%	Number	%
Used	46,797	89.7	36,781	70.5	45,269	86.8	39,864	76.4
Not used	3,207	6.1	6,170	11.8	4,869	9.3	7,291	14.0
Contraindicated/not indicated	2,150	4.1	8,576	16.4	1,556	3.0	4,130	7.9
Unknown/missing	0	0.0	627	1.2	460	0.9	869	1.7
Total	**52,154**	**100.0**	**52,154**	**100.0**	**52,154**	**100.0**	**52,154**	**100.0**

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
Data extracted end of February 2005 and are provisional.

Source: National Audit of Myocardial Infarction Project (2005), personal communication.

Table 3.11 Percentage of patients receiving cardiac rehabilitation after hospitalisation for heart attack, coronary artery bypass surgery or percutaneous coronary intervention 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 angioplasty
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**

** 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"[1].

Second-hand smoke (smoke that has been exhaled by a smoker) is also harmful to cardiovascular health. Regular exposure to secondhand smoke increases the risk of CHD by around 25%[2,3,4].

It is estimated that smoking caused around 30,600 deaths from CVD in 2000 in the UK. Overall, around one in eight deaths from CVD (14% in men and 12% in women) were attributable to smoking. A higher proportion of premature deaths from CVD, around one in five, were attributable to smoking[5].

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 estimates that in developed countries around 12% of all disease burden and over 20% of CVD is due to smoking[6].

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

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%[8].

Overall prevalence of smoking

In 2004, 26% of men and 23% of women smoked cigarettes in Great Britain (Table 4.2).

From the age-specific smoking rates in Table 4.2, we estimate that there are over 12.5 million adult cigarette smokers in the UK today.

Age and sex differences

Overall, smoking prevalence in 2004 is higher among men than among women. This is true in all age groups, with the greatest difference found in those aged 25-34 years where smoking rates are 35% for men and 28% for women (Table 4.2 and Fig 4.2a).

In both men and women, the proportion of adults who smoke is highest in those aged 20-34 years. Rates decline steadily with age and are lowest in those aged 60 and above (15% in men and 14% in women) (Table 4.2). 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 2004, just under one in ten young people aged 11-15 in England were regular smokers (defined as usually smoking at least one cigarette per week) (Table 4.3). 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 increases sharply with age in young people: 1% of 11 year olds in England smoke regularly compared with 21% of 15 year olds[9].

In 2004, Scottish girls (16%) and Welsh girls (13%) were more likely to be regular smokers than English girls (10%).

From the age-specific rates in England, we estimate there are over 300,000 regular smokers aged 11-15 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[10].

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% (Fig 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 4.2 and Fig 4.1b and Fig 4.2a). 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 4.2).

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. 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 4.4).

In teenagers, particularly girls, rates of smoking increased in England during the 1990s, peaking in 1996 (Fig 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 4.3). 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 4.3).

National and regional differences

In 2004, 29% of men and 22% of women in Scotland smoked, compared to 24% of men and 22% of women in Wales, 27% of men and 26% of women in Northern Ireland and 26% of men and 23% of women in England. Smoking rates have been consistently higher in Scotland for over 25 years (Table 4.5). Previously the prevalence of smoking has always been higher in Scotland than in England. In 2004, 25% of adults in Scotland were smokers, the same proportion as in England.

Within England, smoking prevalence rates are generally higher in the North of the country, although this pattern is more marked in women than men (Figs 4.5a and 4.5b). Among men in the early 2000s, the highest proportion of smokers was found in the North East, the North West and in London and the lowest in the West Midlands and the South East: 29% compared with 26% respectively. Among women, smoking prevalence was highest in the North West (29%) and lowest in the London and the West Midlands (22%) (Table 4.5 and Fig 4.5).

Regional patterns of smoking among young people in the UK are unclear (Table 4.3). Surveys in each country used different methodologies, and the data from Wales are relatively out of date.

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 4.6), and is lowest among higher managerial and professional classes (Table 4.7 and Fig 4.7). In 2004, 31% of men and 28% of women in manual households smoked compared to 22% of men and 19% of women in non-manual households (Table 4.6). 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[11].

Ethnic differences

Smoking rates in 2004 vary considerably between ethnic groups in the UK. In men, rates are particularly high in the Bangladeshi communities (40% current smokers). With the exception of Black Caribbean (24%) and Irish women (26%) who have similar rates to women in the general population (23%), smoking rates in ethnic minority women are very low (10% and below) (Table 4.8 and Fig 4.8).

Chewing tobacco is consumed more often among the Bangladeshi community where 16% of Bangladeshi women use this form of tobacco[12].

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, however, 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 4.9). 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) (Figs 4.9a and 4.9b).

Data from the World Health Organization's Europe Region "Health for All Database" show that the overall UK adult smoking rate of 26% is below the averages for the European Union (EU-25 30%) and for Europe as a whole (29%) (Table and Fig 4.10). The decline in smoking prevalence in the UK since the mid 1990s has been slight (1%). Denmark, Georgia, Iceland, Kazakhstan, Kyrgyzstan, Norway and Sweden all showed a decline of 5% or more (Table 4.10).

Public health targets

In England new targets for smoking were announced in 1998[13] which were less ambitious than the Health of the Nation targets they replaced[14] (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 targets should be met in both men and women. The official smoking rate, as reported by the General Household Survey (GHS) shows that the 2005 milestone has already been met, with overall smoking levels falling to 26% in 2003[15].

The targets for smoking in children (Fig 4.1b) and pregnant women are likely to be achieved[16].

In 2000, an inequalities target was added to the general smoking targets in England[17]. 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 30% of manual groups currently smoke (Table 4.6).

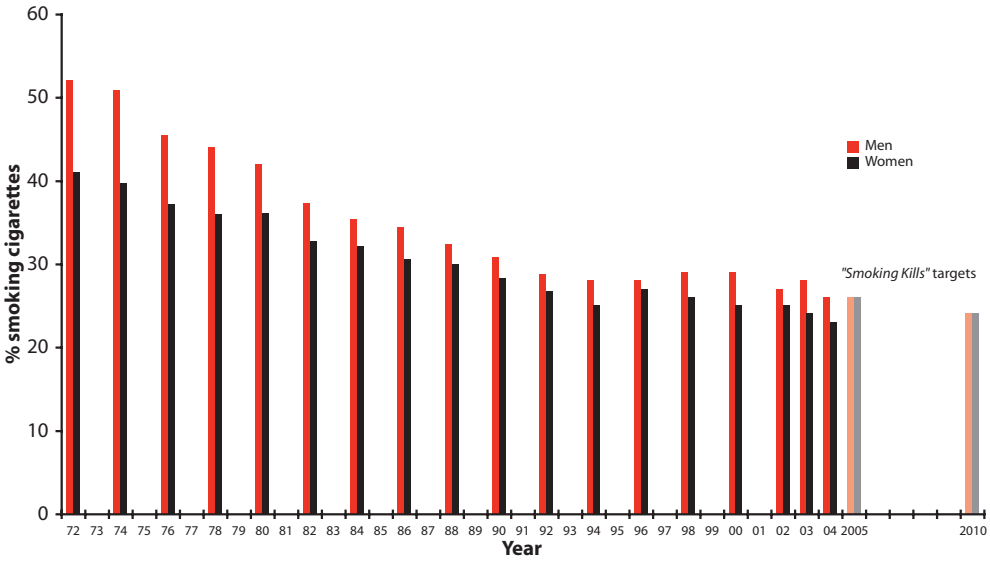
1. *Doll R, Peto R, Boreham J and Sutherland I (2004) Mortality in relation to smoking: 50 years' observations on male British doctors. BMJ; 328: 1519-27.*
2. *Law MR, Morris JK and Wald NJ (1997) Environmental tobacco smoke exposure and ischaemic heart disease: an evaluation of the evidence. BMJ; 315:973-80.*
3. *He J, Vupputuri S, Allen K, Prerost M, Hughes J, Whelton P (1999) Passive smoking and the risk of Coronary Heart Disease – a Meta-Analysis of Epidemiological Studies. New England J Med; 340: 920-26.*
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).*
5. *Peto R, Lopez A, Boreham J, Thun M, Mortality from Smoking in Developed Countries 1950-2000 (2nd edition) Oxford University Press: Oxford. Data available at 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).*
6. *World Health Organization (2002) The World Health Report 2002. Reducing Risks, Promoting Healthy Life. World Health Organization: Geneva.*
7. *Yusaf 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.*
8. *Critchley J, Capewell S (2003) Mortality Risk Reduction Associated With Smoking Cessation in Patients With Coronary Heart Disease: A Systematic Review. JAMA; 290: 86-97.*
9. *Department of Health (2005) Smoking, drinking and drug use among young people in England in 2004: Headline Figures. See www.dh.gov.uk*
10. *Wald N, Nicolaides-Bouman A (1991) UK Smoking Statistics. 2nd Edition. Oxford University Press: Oxford.*
11. *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.*
12. *Department of Health (2005) Health Survey for England 2004. The Health of Minority Ethnic Groups - headline tables. NHS Health and Social Care Information Centre.*
13. *Department of Health (1998) Smoking Kills: A White paper on Tobacco. The Stationery Office: London.*
14. *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.*
15. *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.*
16. *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*
17. *Department of Health (2000) The NHS Cancer Plan. Department of Health: London.*

Table 4.1 Smoking targets for the United Kingdom

England[1,2,3]	
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; with a fall to 26% by the year 2005
Pregnant women	To reduce the percentage of women who smoke during pregnancy from 23% in 1995 to 15% by the year 2010; with a fall to 18% by the year 2005
Children	To reduce smoking among children from 13% in 1996 to 9% or less by the year 2010; with a fall to 11% by the year 2005
Inequalities target	To reduce smoking rates among manual groups from 32% in 1998 to 26% by 2010, in order to narrow the health gap
Wales[4]	No target set
Scotland[5,6]	
Adults	
- *Target*	To reduce the rate of smoking among adults aged 16+, by 17.0% 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 by 10.9% 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, by 10% between 2003 and 2008, from the 2003 baseline of 35.8% to 32.2%
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
Northern Ireland[7]	
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

1. *HM Treasury (2004) Spending Review : Chapter Three. http://www.hm-treasury.gov.uk/spending_review/spend_sr04/psa/spend_sr04_psaindex.cfm*
2. *Department of Health (1998) Smoking Kills: A White Paper on Tobacco. HMSO: London.*
3. *Department of Health (2000) The NHS Cancer Plan. Department of Health: London.*
4. *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*
5. *Building a Better Scotland. Spending Proposals 2005-2008: Enterprise, Opportunity and, Fairness (2004). The Scottish Executive: Edinburgh*
6. *A Breath of Fresh Air for Scotland. Improving Scotland's Health: the challenge tobacco control action plan (2004). The Scottish Executive: Edinburgh*
7. *Investing for Health. A five year tobacco action plan: consultation document. http://www.dhsspsni.gov.uk/publications/2002/tobacco_plan.pdf*

Fig 4.1a *Cigarette smoking among adults aged 16 and over, 1972-2004, England with "Smoking Kills" national targets*



Sources: Office for National Statistics (2006) Results from the 2004 General Household Survey. The Stationery Office: London and previous editions.

Fig 4.1b *Cigarette smoking among children aged 11 to 15, 1982-2004, England, with "Smoking Kills" national targets*

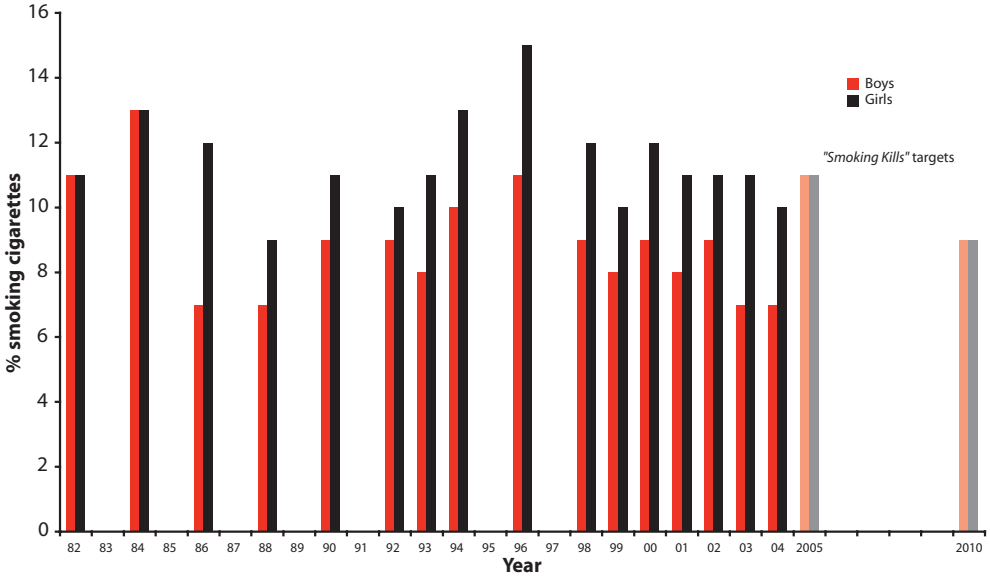


Table 4.2 Cigarette smoking by sex and age, 1972-2004, Great Britain

	1972 %	1974 %	1976 %	1978 %	1980 %	1982 %	1984 %	1986 %	1988 %	1990 %	1992 %	1994 %	1996 %	1998 %	2000 %	2001 %	2002 %	2003 %	2004 %
MEN																			
16-19	43	42	39	35	32	31	29	30	28	28	29	28	26	30	30	25	22	27	23
20-24	55	52	47	45	44	41	40	41	37	38	39	40	43	42	35	40	37	38	36
25-34	56	56	48	48	47	40	40	37	37	36	34	34	38	37	39	38	36	38	35
35-49	55	55	50	48	45	40	39	37	37	34	32	31	30	32	31	31	29	32	31
50-59	54	53	49	48	47	42	39	35	33	28	28	27	28	27	27	26	27	26	26
60 & over	47	44	40	38	36	33	30	29	26	24	21	18	18	16	16	16	17	16	15
All men	**52**	**51**	**46**	**45**	**42**	**38**	**36**	**35**	**33**	**31**	**29**	**28**	**29**	**28**	**29**	**28**	**27**	**28**	**26**
Unweighted sample	*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*
Weighted base (000's)															*20,350*	*19,913*	*19,561*	*19,187*	*19,561*
WOMEN																			
16-19	39	38	34	33	32	30	32	30	28	32	25	27	32	31	28	31	29	25	25
20-24	48	44	45	43	40	40	36	38	37	39	37	38	36	39	35	35	38	34	29
25-34	49	46	43	42	44	37	36	35	35	34	34	30	34	33	32	31	33	31	28
35-49	48	49	45	43	43	38	36	34	35	33	30	28	30	28	27	28	27	28	28
50-59	47	48	46	42	44	40	39	35	34	29	29	26	26	27	28	25	24	23	22
60 & over	25	26	24	24	24	23	23	22	21	20	19	17	19	16	15	17	14	14	14
All women	**41**	**41**	**38**	**37**	**37**	**33**	**32**	**31**	**30**	**29**	**28**	**26**	**28**	**26**	**25**	**26**	**25**	**24**	**23**
Unweighted sample	*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*
Weighted base (000's)															*22,044*	*21,987*	*22,236*	*21,842*	*22,396*
TOTAL																			
16-19	41	40	37	34	32	30	31	30	28	30	27	27	29	31	29	28	25	26	24
20-24	51	48	46	44	42	40	38	39	37	38	38	39	39	40	35	37	38	36	32
25-34	52	51	46	45	45	38	38	36	36	35	34	32	36	35	35	34	34	34	31
35-49	51	52	47	45	44	39	37	36	36	34	31	30	30	30	29	29	28	30	29
50-59	50	51	47	45	45	41	39	35	33	29	29	27	27	27	27	26	26	25	24
60 & over	34	34	31	30	29	27	26	25	23	21	20	17	18	16	16	17	15	15	14
All adults	**46**	**45**	**42**	**40**	**39**	**35**	**34**	**33**	**32**	**30**	**28**	**27**	**28**	**27**	**27**	**27**	**26**	**26**	**25**
Unweighted sample	*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*
Weighted base (000's)															*42,394*	*41,899*	*41,798*	*41,029*	*41,957*

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 (2005) Results from the 2004 General Household Survey (www.ons.gov.uk/ghs) and previous years.

Fig 4.2a Prevalence of cigarette smoking by sex and age, 2004, Great Britain

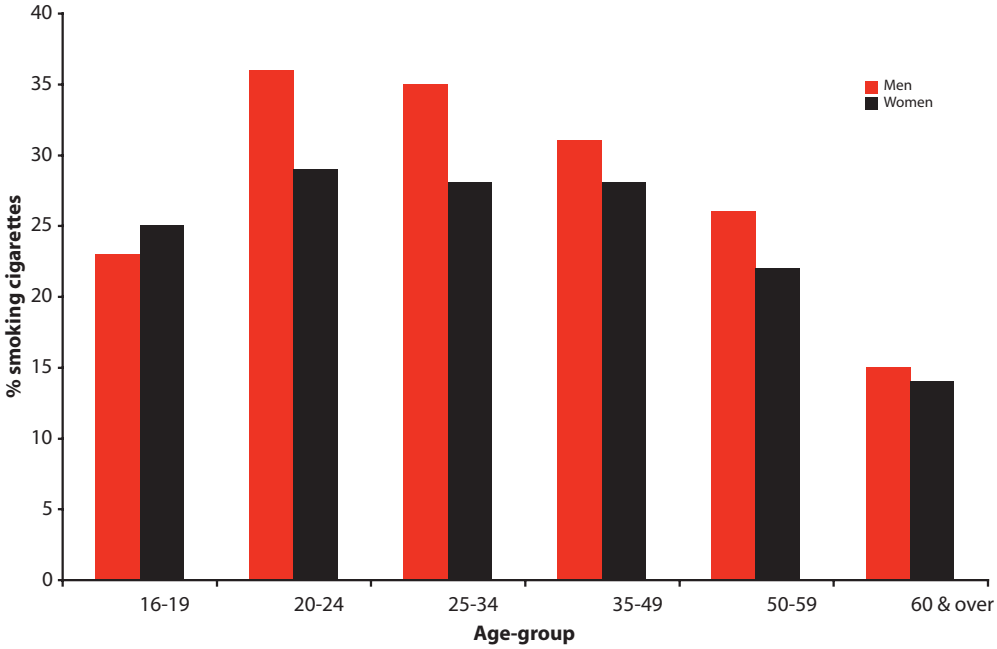


Fig 4.2b Prevalence of cigarette smoking by sex, 1972-2004, Great Britain

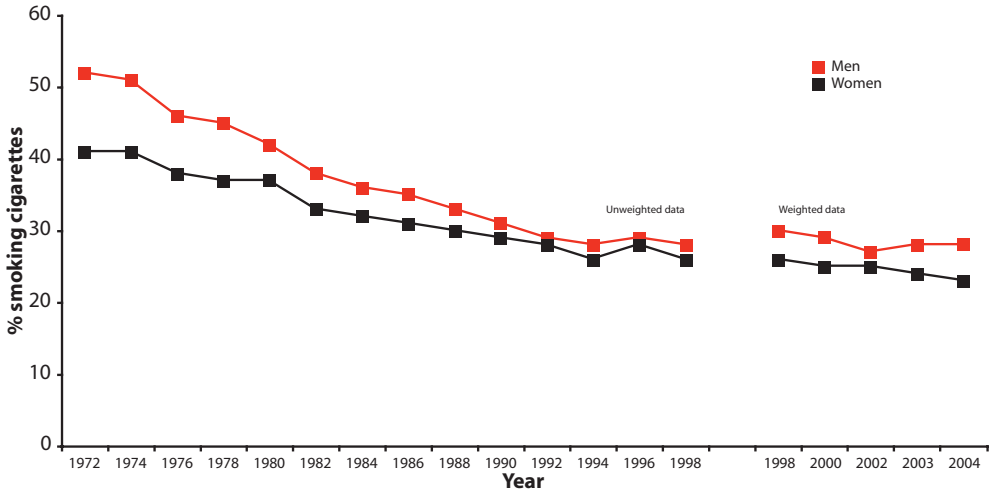


Table 4.3 Regular cigarette smoking in young people aged 11 to 15 years, by sex, 1982-2004, England, Wales, Scotland and Northern Ireland*

	1982 %	1983 %	1984 %	1986 %	1988 %	1990 %	1992 %	1994 %	1996 %	1998 %	1999 %	2000 %	2001 %	2002 %	2003 %	2004 %
BOYS																
England	11		13	7	7	9	9	10	11	9	8	9	8	9	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				
GIRLS																
England	11		13	12	9	11	10	13	15	12	10	12	11	11	11	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				

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

Sources: *Department of Health (2005) Smoking, drinking and drug use among young people in England in 2004: Headline Figures. See www.dh.gov.uk/assetRoot/04/10/56/76/04105676.pdf*

Welsh Assembly Government "Healtheschool" website (2003) www.healtheschool.org.uk/smoking/smoking_data.htm

National Assembly for Wales, Statistics for Wales: personal communication.

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.

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Northern Ireland Statistics and Research Agency (2002) Young Person's Behaviour and Attitiudes Survey. See www.csu.nisra.gov.uk/archive/surveys/ypbas/results/ypbas%20bulletin.pdf

Table 4.4 Average daily cigarette consumption per smoker by sex and age, 1974-2004, Great Britain

	1974	1978	1982	1986	1988	1990	1992	1994	1996	1998	2000	2001	2002	2003	2004	*Weighted base 2004 (000's)*	*Unweighted sample 2004*
MEN																	
16-19	16	14	12	12	12	13	12	10	12	10	12	11	11	13	11	*278*	*86*
20-24	19	17	16	15	16	16	13	13	14	14	12	12	12	12	11	*485*	*146*
25-34	19	19	17	16	17	16	14	15	15	13	13	13	13	13	12	*1,093*	*364*
35-49	20	20	20	19	19	19	19	18	18	17	17	17	17	16	16	*1,658*	*562*
50-59	18	20	18	17	19	17	18	20	17	18	17	18	18	18	18	*883*	*307*
60 & over	14	15	16	15	15	15	15	14	15	16	15	15	16	15	14	*751*	*279*
All men	**18**	**18**	**17**	**16**	**17**	**17**	**16**	**16**	**16**	**16**	**15**	**15**	**15**	**15**	**15**	*5,147*	*1,744*
WOMEN																	
16-19	12	13	11	11	11	11	10	10	10	10	10	12	12	10	11	*272*	*90*
20-24	14	14	14	12	14	13	13	13	11	12	10	11	10	11	11	*488*	*161*
25-34	15	16	16	14	15	15	14	14	13	12	12	12	12	12	12	*1,001*	*364*
35-49	15	16	15	16	16	15	16	15	16	15	14	15	15	14	14	*1,727*	*606*
50-59	13	14	14	14	15	15	15	15	16	15	15	15	15	15	15	*809*	*295*
60 & over	10	11	11	12	12	12	12	13	13	12	12	12	13	13	13	*847*	*307*
All women	**13**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**13**	**13**	**13**	**13**	**13**	**13**	*5,144*	*1,823*

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 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.

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

Table 4.5 Cigarette smoking by sex and country of United Kingdom, 1976-2004, and by Government Office Region 1998-2004, United Kingdom

	1976	1978	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2001	2002	2003	2004	*Weighted base 2004*	*Unweighted sample*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	(000's)	2004
MEN																			
England	45	44	42	37	35	34	32	31	29	28	28	29	29	28	27	27	26	*16,855*	*5,884*
North East												28	27	33	24	30	28	*894*	*312*
North West												29	29	28	28	30	27	*2,195*	*789*
Yorkshire and the Humber												30	29	30	27	25	30	*1,728*	*621*
East Midlands												27	27	28	24	31	27	*1,624*	*585*
West Midlands												32	27	27	25	26	26	*1,647*	*589*
East of England												26	27	27	25	28	26	*1,839*	*664*
London												34	31	29	29	28	26	*2,391*	*693*
South East												28	28	26	27	25	25	*2,807*	*1,002*
South West												26	30	27	27	26	25	*1,729*	*629*
Wales	46	44	45	36	42	33	35	30	32	28	28	29	25	27	27	29	24	*981*	*336*
Scotland	50	48	46	45	43	37	36	33	34	31	33	35	30	32	29	35	29	*1,725*	*648*
Great Britain	46	45	42	38	36	35	33	31	29	28	29	30	29	28	27	28	26	*19,561*	*6,868*
WOMEN																			
England	37	36	36	32	32	31	30	28	27	25	27	26	25	25	25	24	23	*19,148*	*6,832*
North East												30	28	26	29	27	30	*1,018*	*365*
North West												32	30	29	28	30	28	*2,531*	*930*
Yorkshire and the Humber												28	26	28	27	24	26	*2,017*	*731*
East Midlands												26	24	27	24	24	28	*1,759*	*648*
West Midlands												26	24	22	21	24	21	*1,973*	*714*
East of England												24	23	25	25	22	23	*2,110*	*778*
London												27	24	26	21	20	19	*2,758*	*835*
South East												21	23	23	25	22	20	*3,102*	*1,130*
South West												25	24	22	24	22	21	*1,881*	*701*
Wales	37	37	39	34	32	30	28	31	33	27	27	26	24	26	27	26	22	*1,151*	*392*
Scotland	43	42	42	39	35	35	37	35	34	29	31	29	30	30	28	28	22	*2,096*	*805*
Great Britain	38	37	37	33	32	31	30	29	28	26	28	26	25	26	25	24	23	*22,396*	*8,029*

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 (2005) Living in Britain: Results from the 2004 General Household Survey. The Stationery Office: London and previous editions.

	1983	1990/1	1992/3	1994/5	1996/7	1998/99	2000/01	2002/03	*Unweighted 2002/03*
	%	%	%	%	%	%	%	%	
Northern Ireland									
MEN	39	33	31	29	31	28	26	27	2,455
WOMEN	29	31	29	27	27	29	28	26	2,722

Men and women aged 16 and over.

Source: Northern Ireland Statistics and Research Agency Central Survey Unit (2004) Continuous Household Survey 2002/03. See www.csu.nisra.gov.uk/

Fig 4.5a *Percentage of men smoking by region, 2002/04 United Kingdom*

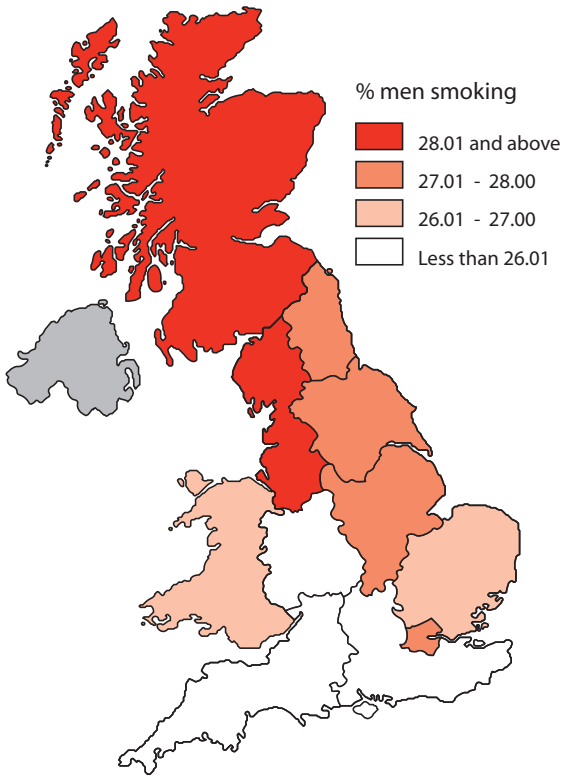

Fig 4.5b *Percentage of women smoking by region, 2002/04 United Kingdom*

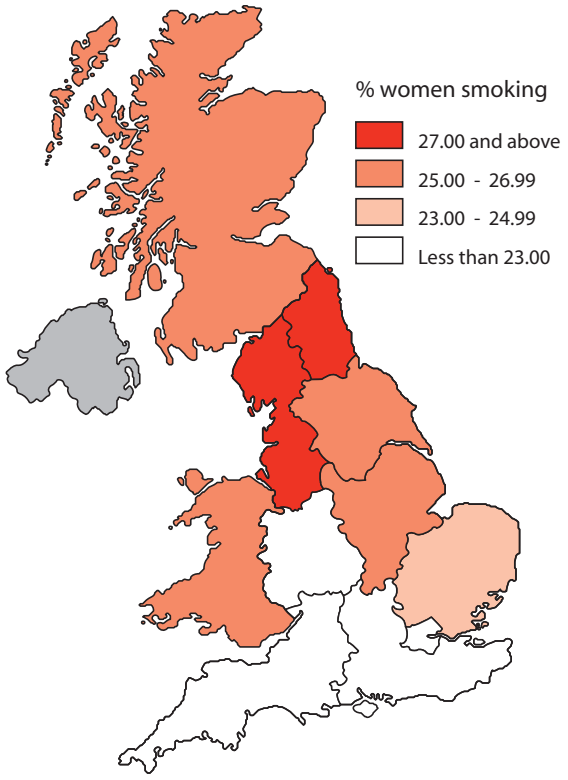

Table 4.6 Cigarette smoking by sex and social class, 1992-2004, England

	Unweighted				*Weighted*						*Base 2004*	*Sample*
	1992	1994	1996	1998	1998	2000	2001	2002	2003	2004	*(000's)*	*2004*
	%	%	%	%	%	%	%	%	%	%		
MEN												
Total non-manual	22	21	21	21	22	24	22	21	22	22	*8,678*	*3,122*
Total manual	35	34	35	34	35	34	34	32	33	31	*7,335*	*2,513*
Ratio manual:non-manual	1.59	1.62	1.67	1.62	1.59	1.42	1.55	1.52	1.50	1.41		
WOMEN												
Total non-manual	23	21	22	21	22	22	20	20	20	19	*10,279*	*3,759*
Total manual	30	30	33	31	31	29	31	30	29	28	*7,733*	*2,710*
Ratio manual:non-manual	1.30	1.43	1.50	1.48	1.41	1.32	1.55	1.50	1.45	1.47		

Adults aged 16 and over

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 2003 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

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

Fig 4.6 Cigarette smoking by sex and social class, 1992-2004, England

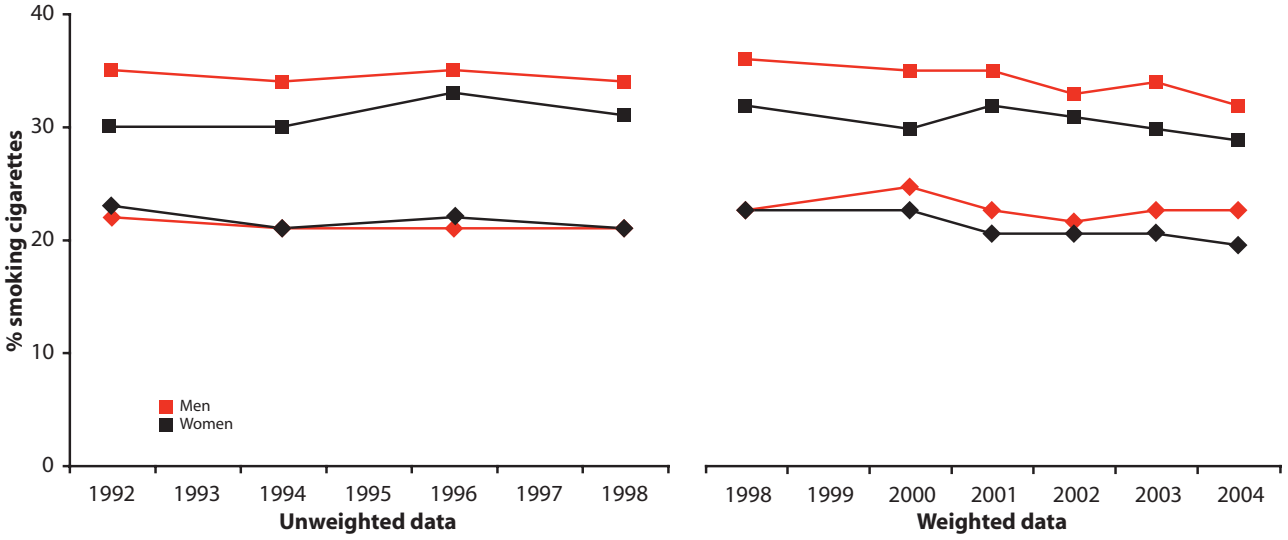

Table 4.7 Cigarette smoking by sex and socio-economic classification, 2004, Great Britain

*Socio-economic classification of the household reference person**	Men %	Women %	All %
Managerial and professional	**20**	**17**	**18**
Large employers and higher managerial	19	13	16
Higher professional	16	11	14
Lower managerial and professional	22	20	21
Intermediate	**26**	**22**	**23**
Intermediate	26	22	24
Small employers and own account	25	20	23
Routine and manual	**32**	**30**	**31**
Lower supervisory and technical	30	26	28
Semi routine	34	30	32
Routine	33	33	33
Total*	**26**	**23**	**25**
*Weighted base (000s)**	*19,009*	*21,746*	*41,957*
*Unweighted sample**	*6,711*	*7,822*	*14,897*

Adults aged 16 and over.

** 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 (2005) Results from the 2004 General Household Survey (www.ons.gov.uk/ghs) and previous years.

Fig 4.7 Cigarette smoking by sex and socio-economic classification, 2004, Great Britain

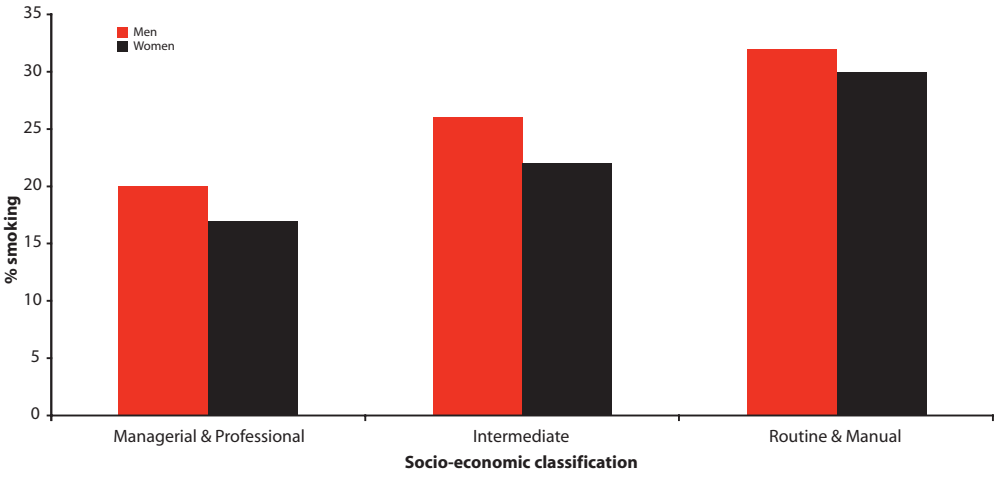

Table 4.8 Cigarette smoking by sex and ethnic group, 2004, England

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

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 www.ic.nhs.uk/pubs/hlthsvyeng2004ethnic

Fig 4.8 Cigarette smoking by sex and ethnic group, 2004, England

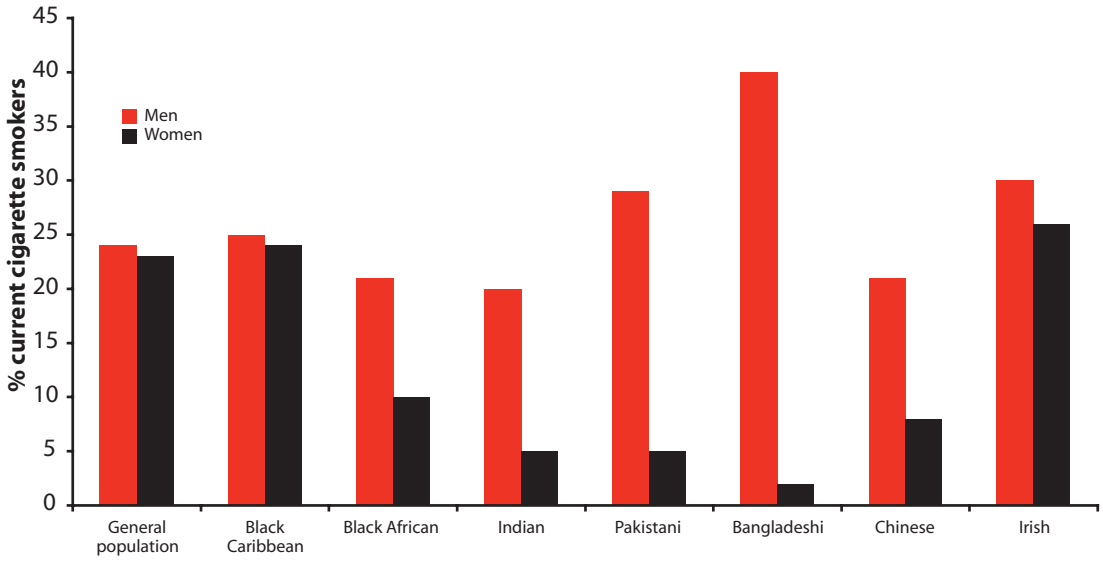

Table 4.9 Prevalence of smoking, latest available data, 1995-2004, all available countries, the World

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	
	Guatamala	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	
	Venezuala	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
	Finland	2003	26	19	22
	France	2000	33	21	27

Region	Country	Study year	Men %	Women %	Both %
	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
	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
	FYR of Macedonia	1999			36
	Turkey	2003	47	15	
	Ukraine	2001	53	11	
	UK	2003	27	24	
	Uzbekistan	2002	24	1	
South-East Asia Region	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
Western Pacific Region	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	

Adults: ages vary between countries, see source for details

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

Sources: *World Health Organization (2005) European Health for All statistical database. Http://www.who.dk.hfadb;*
World Health Organization (2005) The SuRF Report 2. Surveillance of chronic disease Risk Factors - Country-level data and comparable estimates.

Fig 4.9a Prevalence of smoking, men, latest available data, 1995-2004, the World

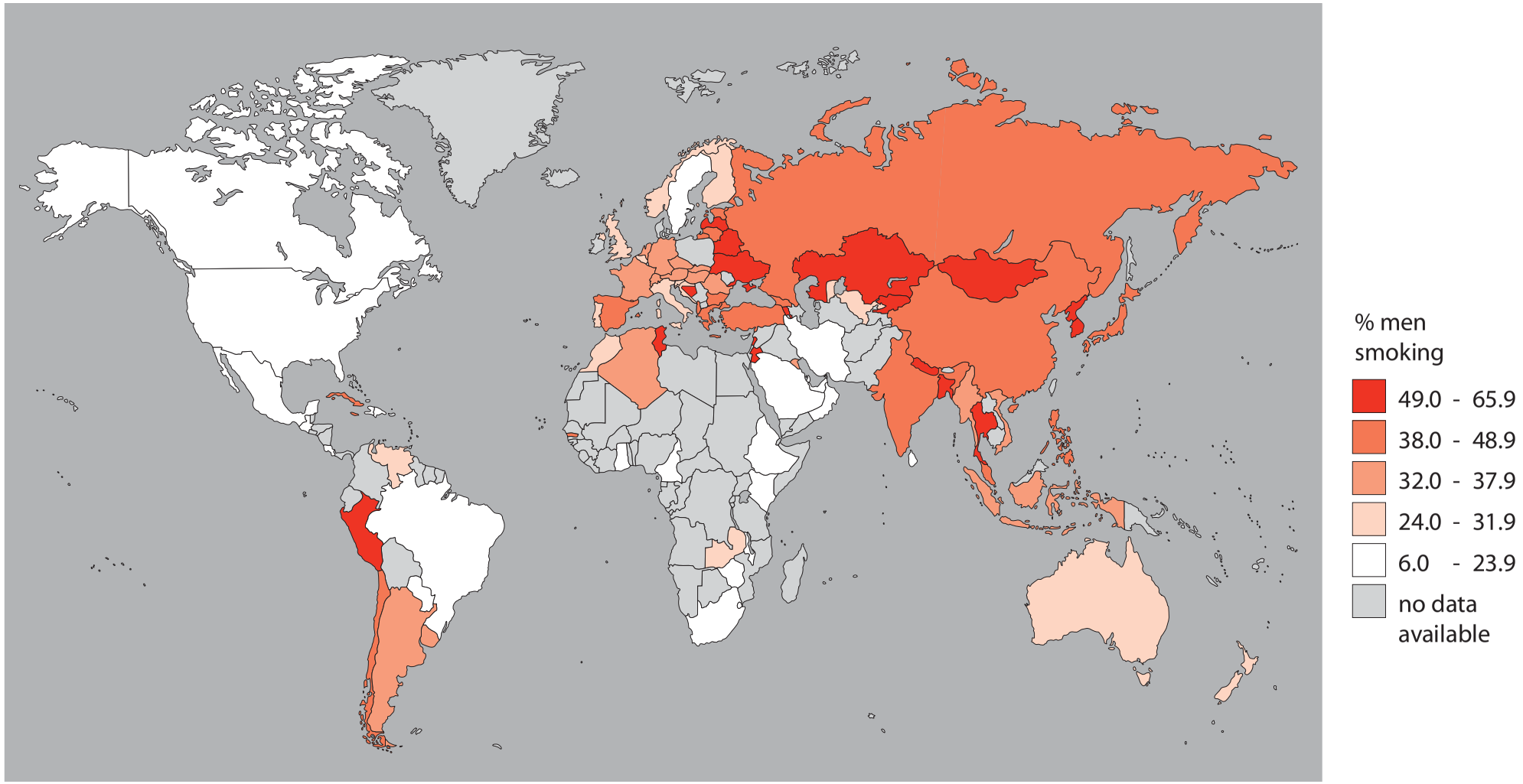

Fig 4.9b Prevalence of smoking, women, latest available data, 1995-2004, the World

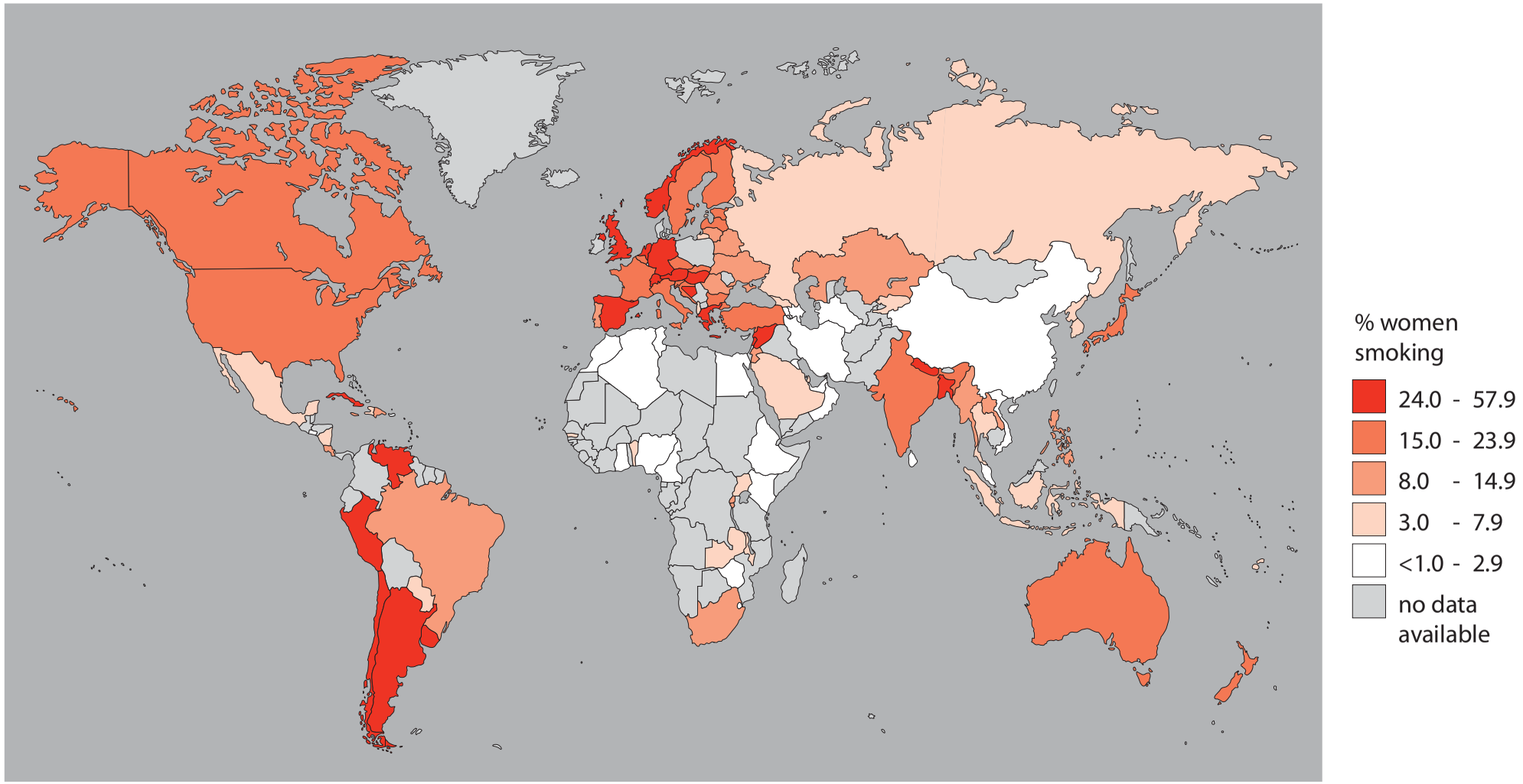

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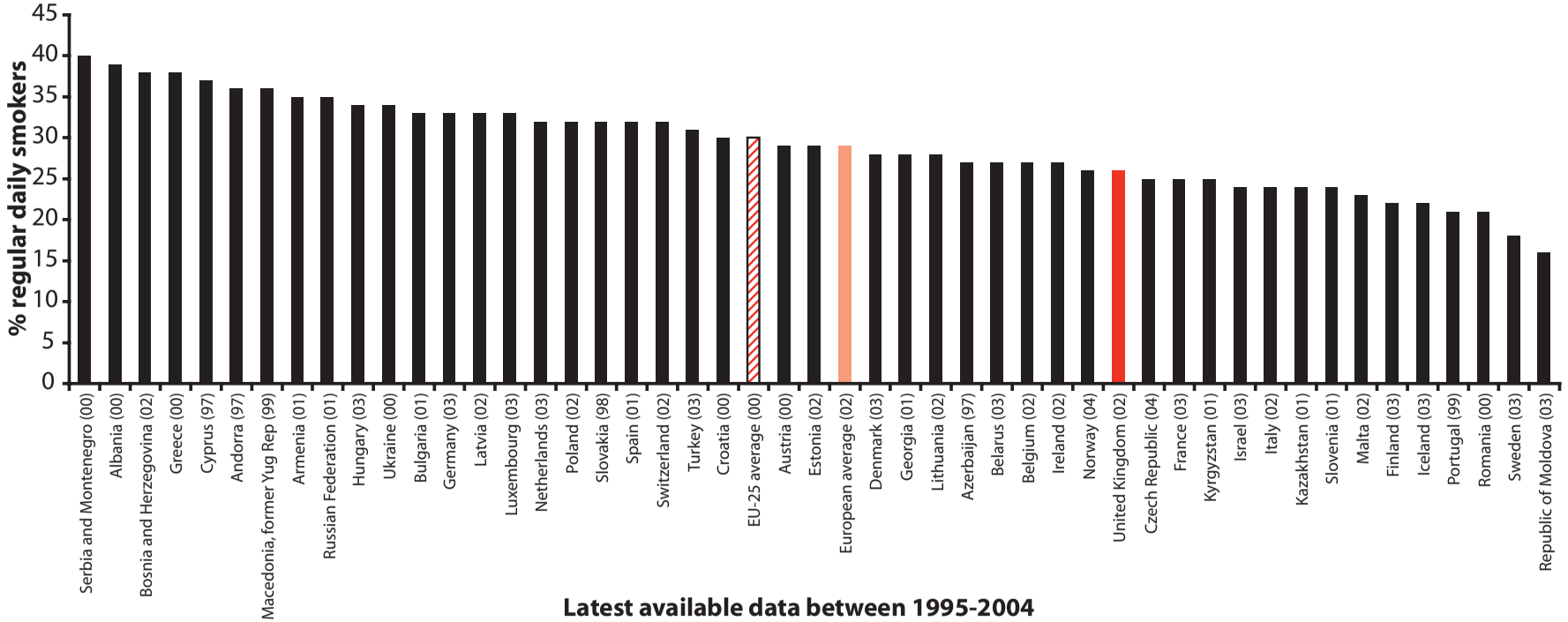
Table 4.10 Percentage regular daily smokers by country, adults aged 15 years and over, 1995-2004, selected European countries

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

Source: World Health Organization (2005) European Health for All statistical database. http://www.who.dk/hfadb;
Office for National Statisitics (2005) Living in Britain. Results from the 2004 General Household Survey. The Stationery Office: London.

Fig 4.10 *Percentage regular daily smokers by country, adults aged 15 years and over, latest year between 1995 and 2004, selected European countries*



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5. Diet

It is now universally recognised that a diet which is high in fat, salt and free sugars, and low in complex carbohydrates, fruit and vegetables increases the risk of chronic diseases – particularly CVD and cancer. These risks are outlined in the World Health Organization 2003 report *Diet, nutrition and the prevention of chronic diseases*[1]. 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[2].

The dietary changes which would help to reduce rates of CHD in the UK population were first detailed in the 1994 report of the Government's Committee on the Medical Aspects of Food and Nutrition Policy (COMA)[3,4]. This recommended a reduction in fat intake, particularly saturated fat intake, a reduction in salt intake and an increase in fruit and vegetables and carbohydrate intake. In the 2003 report *Salt and Health*, the Scientific Advisory Committee on Nutrition (which replaced COMA in 2000) repeated COMA's guidance on salt intake in adults and introduced additional guidance on reducing salt intake in children[5]. In 2005, these dietary objectives were repeated in *Choosing a Better Diet: a food and health action plan*, which further recommended a reduction in the intake of added sugar[6].

Research from the World Health Organization highlights the specific importance of low fruit and vegetable consumption as a cause of CHD. The World Health Report 2002 estimates that around 4% of all disease burden in developed countries is caused by low fruit and vegetable consumption, and that just under 30% of CHD and almost 20% of stroke in developed countries is due to fruit and vegetable consumption levels below 600g/day[7].

Overall levels of consumption

Levels of consumption of food and nutrients are difficult to assess. In the UK food consumption patterns within the home have been tracked for over 50 years: between 1942 and 2000 by the National Food Survey, and from 2001 by the Expenditure and Food Survey, albeit by using food purchase data as a proxy for consumption. While this survey is useful for investigating trends over time, it only provides a general idea about individual levels of consumption. It suggests that overall in 2003/04 British adults derived between 36 and 37% of total energy from total fat, and between 14 and 15% from saturated fat[8] (Table 5.2 and Fig 5.2a and b).

Data from the 2000/01 National Diet and Nutrition Survey (NDNS), a more rigorous survey based on food consumption, suggest the percentage of food energy (i.e. excluding alcohol) derived from total fat is lower, currently around 36% in men and 35% in women, and from saturated fat is just over 13% in both men and women (Table 5.3). However, in both surveys the consumption of fat and saturated fat are higher than the *Choosing a Better Diet* targets.

The best estimate of fruit and vegetable consumption in adults comes from the 2000/01 National Diet and Nutrition Survey. On average both men and women consume fewer than three portions of fruit and vegetables a day; 2.7 for men and 2.9 for women (Table 5.4). Overall, just 13% of men and 15% of women consume the recommended five or more portions of fruit and vegetables a day. These proportions increase with age: none of the men and just 4% of the women aged 19-24

years surveyed in the National Diet and Nutrition Survey consumed five or more portions of fruit and vegetables, compared with 24% of men and 22% of women aged 50-64 years (Table 5.4).

The best estimate of overall consumption of salt comes from the National Diet and Nutrition Survey, which utilises 24-hour urine collections to determine salt intake. Data from 2000/01 suggest that the average daily salt intake for men is 11.0g and for women 8.1g – both higher than the Scientific Advisory Committee on Nutrition target of no more than 6g a day[5] (Table 5.5). The proportion of British adults exceeding the daily recommended salt intake is highest in the youngest age group: 98% of men and 83% of women aged 19-24 years consume more than 6 grams of salt daily compared to 85% of men and 69% of women overall (Table 5.5 and Fig 5.5).

Temporal trends

Data from the National Food Survey (up to 2000) and the more recent Expenditure and Food Survey (2001/02 and onwards) allow us to look at general trends in the British diet from 1975 (Table 5.2).

The percentage of total energy derived from total fat in the British diet is falling, but only gradually: from around 41% in the early 1980s to under 37% in 2003/04. The type of fat eaten has changed more dramatically: the percentage of total energy derived from saturated fat fell from around 19% in 1975 to just under 15% in 2003/04 (Table 5.2 and Fig 5.2a).

The trends in fat consumption are associated with changes in food purchasing patterns. For example, 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, for example reduced fat milks and spreads with a reduced content of fat or saturated fat (Table 5.6 and Figs 5.6a and 5.6b).

Trends in fruit and vegetable consumption over the last sixty years are mixed. Data from the Expenditure and Food Survey show that between 1980 and 2003/04 the combined consumption of fruit and vegetables was stable (Fig 5.2b)[8]. Taken separately, data from the National Food Survey and the Expenditure and Food Survey suggest that the consumption of total fresh fruit has increased around four fold since the early 1940s, but total consumption of fresh vegetables has declined (Table 5.6 and Fig 5.6c).

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[9], and the reliance on some such foods – particularly convenience foods that are often high in salt – has increased in recent years. Comparing average salt consumption in the 1986/87 and the 2000/01 National Diet and Nutrition Surveys shows an increase in both men (up by 9% from 10.1g to 11.0g) and in women (up by 5% from 7.7g to 8.1g) over a period of 15 years (Table 5.7)[9].

Eating habits in children

Consumption of fruit and vegetables in children is low. The 2004 Health Survey for England

measured self-reported[10] fruit and vegetable consumption in children aged 2-15 years. Overall, only 13% of boys and 12% of girls reported eating the recommended five portions of fruit and vegetables daily, and 10% reported eating no portions of fruit or vegetables in the previous day (Table 5.8). The 1997 National Diet and Nutrition Survey for children, which used the more rigorous method of measured dietary records to assess food consumption, also found very low levels of consumption with one in five 4-18 year olds eating no fruit at all during the week of the survey[11].

The 1997 National Diet and Nutrition Survey for children found that the average proportion of children's food energy derived from fat was 35.4% for boys and 35.9% for girls, and from saturated fat was 14.2% for boys and 14.3% for girls[11]. Fat intake for children, while lower than that found in adults, was just above the COMA target of 35%. Saturated fat intake was well above the *Choosing a better diet* target of 11%.

In 2003 the Scientific Advisory Committee on Nutrition introduced new guidance on salt consumption in children. Data from the 1997 National Diet and Nutrition Survey for children suggest that salt consumption in children is well above the level recommended. This is most marked in children aged 4-6 years who in 1997 consumed almost twice the recommended amount of salt (Table 5.9). Around 40% of the salt children consume comes from cereal and cereal products, such as breakfast cereals, bread and pasta (Table 5.9).

National and regional differences

It is often suggested that the diets of people in Scotland and the North of England are less healthy than in the South. When regional differences in total fat and saturated fat consumption are examined no clear patterns emerge (Table 5.10).

Data from the Expenditure and Food Survey suggest there is a strong North-South gradient in the amount of both fruit and vegetables consumed. People in Northern Ireland, Scotland, Wales and the North of England consume considerably less than in the South West and London. For example, in 2003/04 people living in the South West consumed over 50% more fruit and vegetables (excluding potatoes) than people living in Northern Ireland (Table 5.10). However, data from the 2000/01 National Diet and Nutrition Survey showed no significant regional differences in the number of portions of fruit and vegetables consumed, or the proportion of men and women who consumed five or more portions a day[12] (Table 5.11).

The consumption of table salt appears to be higher in Wales and the North West of England, compared to the rest of the UK (Table 5.10).

Socio-economic differences

While there is little difference in the fat and saturated fat intake of income level groups, there is more fresh fruit consumed in those households with higher incomes (Table 5.12). Data from the 2003/04 Expenditure and Food Survey suggest that the volume of fruit (including fruit juices) consumed in the richest 20% of households is 30% higher than that consumed in the poorest 20% of households (Table 5.12). There is no similar gradient for vegetables.

Data from the 2000/01 National Diet and Nutrition Survey show that men and women living in households in receipt of state benefits consume fewer portions of fruit and vegetables than those

in non-benefit households. About one third of those in benefit households (35% of men and 30% of women) ate no fruit at all during the week of the survey compared with around one seventh (19% men and 12% women) in non-benefit households[13].

Fruit and vegetable consumption also varies with social class in children. The 2002 Health Survey for England found that children living in managerial and professional households were the most likely to eat five portions of fruit and vegetables, and ate, on average, the highest number of portions[14].

Ethnic differences

Data from the Health Survey for England 2004[15] show varying dietary habits for different ethnic groups within England. Among men, each ethnic group consumed less fat than the general population (Table 5.13). A similar pattern was observed in women, except for Black Africans whose fat consumption was higher than the general population.

Both men and women from Indian, Pakistani and Chinese communities have the highest levels of fruit and vegetable consumption of any ethnic group. In these groups a higher proportion achieves the 5-a-day target than the general population (Table 5.13).

Apart from the Irish, all ethnic groups add more salt during cooking than the general population. Around 90% of Indian, Pakistani and Bangladeshi men and women report adding salt during cooking compared to 56% of men and 53% of women in the general population (Table 5.13).

International differences

The proportion of energy available from fat varies across European countries, from 15% in Azerbaijan to 42% in France. In 2002, the UK figure of nearly 37% was similar to the EU-15 average of 39% but markedly higher than the European or EU-25 averages of 32% (Table 5.14 and Fig 5.14).

Data published by the World Health Organization show that availability of fruit and vegetables is generally higher in Southern European countries than it is in Northern, Western, Central and Eastern European countries[16]. Availability of fruit and vegetables in the UK is less than half of that in Greece and about 83% higher than that found in Tajikistan (Table 5.15). The UK figure of 189.5kg per person per year is below the WHO international target of 400g of fruit and vegetables consumed per person per day[17] (Fig 5.15).

Targets

Progress towards the targets for saturated fat, total fat and fruit and vegetable consumption has been disappointing (Fig 5.2a). Salt consumption remains well above the levels recommended by the Scientific Advisory Committee on Nutrition. A reduction in the salt content of processed foods and drinks is required if the target is to be met.

1. *World Health Organization (2003) Diet, Nutrition and the prevention of chronic diseases. Report of a Joint AHO/FAO Expert Consultation. Geneva: World Health Organization.*
2. *World Health Organization (2004) Global strategy on diet and physical activity. Geneva: World Health Organization. See www.who.int/gb/ebwha/pdf_files/WHA57/A57_9-en.pdf*
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. *COMA was disbanded in March 2000 and a new committee, the Scientific Advisory Committee on Nutrition (SACN), set up to advise the Department of Health and the Food Standards Agency on matters relating to food, diet and health.*
5. *Scientific Advisory Committee on Nutrition (2003) Salt and Health. The Stationery Office: London. See www.sacn.gov.uk/pdfs/sacn_salt_final.pdf*
6. *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*
7. *World Health Organization (2002) The World Health Report 2002. Reducing Risks, Promoting Healthy Life. World Health Organization: Geneva.*
8. *Department of Food and Rural Affairs (2005) Family Food in 2003/04: a National Statistics Publication by Defra. The Stationery Office: London. See http://statistics.defra.gov.uk/esg/publications/efs/2004/complete.pdf*
9. *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/ndnsv3.pdf*
10. *Parents of children aged 12 years and under answered questions on fruit and vegetable consumption on behalf of the child, those aged 13-15 years answered the questions themselves.*
11. *Social Survey Division of the Office of National Statistics and Medical Research Council Human Nutrition Unit (2000) National Diet and Nutrition Survey: young people aged 4 to 18 years. The Stationery Office: London.*
12. *The National Food and Nutrition Survey does not include respondents from Northern Ireland.*
13. *Social Survey Division of the Office of National Statistics and Medical Research Council Human Nutrition Unit (2002) The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 1. Types and quantities of food consumed. The Stationery Office: London. See www.statistics.gov.uk/downloads/theme_health/NDNS.pdf*
14. *Department of Health (2003) Health Survey for England 2002: The Health of Children and Young people. The Stationery Office: London.*
15. *Department of Health (2005) Health Survey for England 2004. The Health of Minority Ethnic Groups. The Stationery Office: London.*
16. *The WHO definition of food availability refers to the amount produced nationally plus imports minus exports.*
17. *The WHO target of 400g fruit and vegetable consumption per day can be converted to 600g fruit and vegetable purchase per day by allowing for 33% wastage (as is standard). This converts to 219.2kg fruit and vegetable availability per person per year.*

Table 5.1 Selected dietary targets for the United Kingdom

England[1]	
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
Wales[2]	
	No targets set
Scotland[3]	
Fat	To reduce the average percentage of food energy from total fat to no more than 35% by the year 2005
Saturated fat	To reduce the average percentage of food energy from saturated fatty acids to no more than 11% by the year 2005
Fruit and vegetables	To double the average intake of fruit and vegetables to more than 400g per day by the year 2005
Salt	To reduce the average intake of salt from 9.6g to 6g per day by the year 2005
Northern Ireland[4]	
	No targets set

1. *Department of Health (2005) Choosing a Better Diet: a food and health action plan. DH:London.*
2. *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*
3. *The Scottish Office (1996) Eating for Health. A Diet Action Plan for Scotland. The Scottish Office: Edinburgh.*
4. *New strategies for CVD in Northern Ireland are being developed by the Department of Health, Social Services and Public Safety and will be issued for consultation later in 2004.*

Table 5.2 Consumption of total fat, saturated fat and fruit and vegetables, adults aged 16 and above, 1975-2003/04, Great Britain

Consumption per person per day, total diet (i.e. including alcohol)	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001/02	2002/03	2003/04
Energy (kcal)	2,489	2,439	2,208	2,058	2,143	2,241	2,168	2,102	2,056	2,152	2,089	2,091	2,077
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
Fat (g)	111.7	112.0	102.1	93.5	89.1	93.5	89.0	85.9	82.7	86.2	86.0	85.0	84.8
Fat (% total energy)	40.4	41.3	41.6	40.9	37.4	37.6	36.9	36.8	36.2	36.1	37.1	36.6	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	33.6	33.6
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	14.5	14.6
Purchase per person per week													
Fruit and vegetables (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

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.

Sources: Office for National Statistics (2005) Expenditure and Food Survey 2003/04 . The Stationery Office : London.

Department for Environment, Food and Rural Affairs (2003) National Food Survey 2000. The Stationery Office: London and previous editions.

Fig 5.2a *Consumption of total and saturated fat, adults aged 16 and above, 1975-2003/04, Great Britain, with "Choosing a Better Diet" targets*

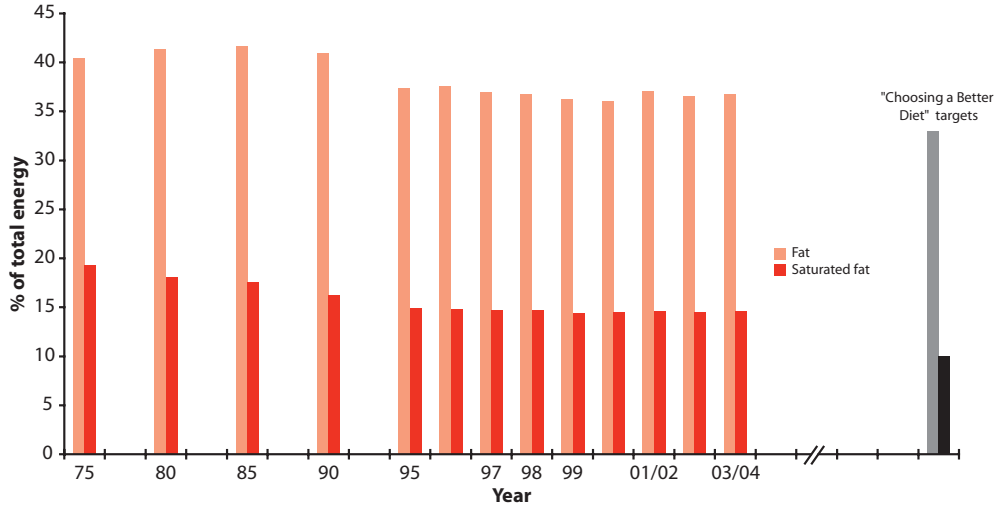


Fig 5.2b *Consumption of fruit and vegetables, adults aged 16 and above, 1975-2003/04, Great Britain, with 5-a-day benchmark*

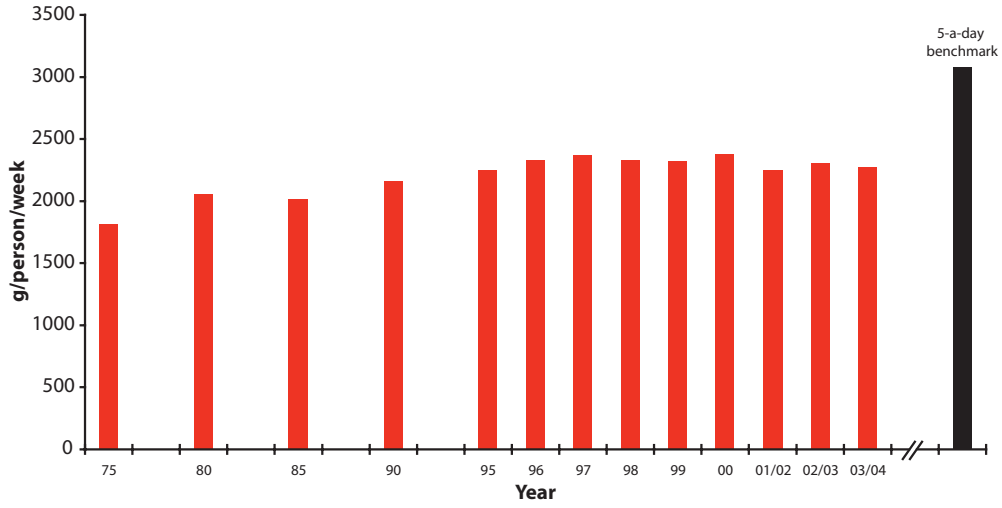


Table 5.3 Percentage of food energy from fat and saturated fat by sex and age, 2000/01, Great Britain

Percentage of food energy	MEN					WOMEN				
Total fat	**19-24 cum %**	**25-34 cum %**	**35-49 cum %**	**50-64 cum %**	**All cum %**	**19-24 cum %**	**25-34 cum %**	**35-49 cum %**	**50-64 cum %**	**All cum %**
25% or less	3	2	4	3	3	5	4	8	8	7
27% or less	7	4	8	8	7	10	8	12	15	12
30% or less	17	10	15	17	14	23	19	22	23	22
33% or less	28	27	27	32	29	37	30	34	43	36
35% or less	46	44	40	45	43	49	45	49	56	50
38% or less	65	66	63	63	64	66	68	70	69	69
40% or less	73	82	77	77	78	83	77	82	79	80
45% or less	93	97	96	97	96	95	96	96	93	95
All	100	100	100	100	100	100	100	100	100	100
Mean	*36.0*	*35.8*	*35.9*	*35.6*	*35.8*	*35.5*	*35.4*	*34.7*	*34.5*	*34.9*
% exceeding recommended daily total fat consumption	**54**	**56**	**60**	**55**	**57**	**51**	**55**	**51**	**44**	**50**
Saturated fat	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**
8% or less	3	2	3	3	3	4	4	7	6	6
10% or less	14	8	12	13	12	18	16	16	20	17
12% or less	22	36	26	36	31	44	32	33	36	35
14% or less	60	60	59	58	59	71	55	61	62	61
16% or less	81	88	82	80	83	88	85	83	80	83
18% or less	91	97	94	93	94	95	95	95	89	93
20% or less	98	100	98	98	98	97	100	98	95	98
All	100	100	100	100	100	100	100	100	100	100
Mean	*13.5*	*13.2*	*13.5*	*13.4*	*13.4*	*12.9*	*13.2*	*13.2*	*13.3*	*13.2*
% exceeding recommended daily saturated fat consumption	**86**	**92**	**88**	**87**	**88**	**82**	**84**	**84**	**80**	**83**
Base	*108*	*219*	*253*	*253*	*833*	*104*	*210*	*318*	*259*	*891*

Data are weighted for non-response.

Source: 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.

Table 5.4 Consumption of fruit and vegetable portions by sex and age, 2000/01, Great Britain

Average daily number of portions of fruit and vegetables consumed	MEN					WOMEN				
	19-24	**25-34**	**35-49**	**50-64**	**All**	**19-24**	**25-34**	**35-49**	**50-64**	**All**
	cum %	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**	**cum %**
None	6	1	0	1	1	2	1	1	0	1
Less than one portion	38	27	14	7	18	36	19	16	7	16
Less than two portions	86	54	36	29	45	64	46	41	20	39
Less than three portions	95	76	59	45	64	83	71	61	44	61
Less than four portions	95	86	75	60	76	96	82	73	60	74
Less than five portions	100	93	86	76	87	96	91	83	78	85
All	100	100	100	100	100	100	100	100	100	100
Mean number of portions	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***
Bases	*108*	*219*	*253*	*253*	*833*	*104*	*210*	*318*	*259*	*891*

Portions include fruit and vegetables consumed in composite dishes such as fruit pies, vegetable lasagne, cauliflour cheese and vegetable samosas.

Data are weighted for non-response.

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.

Table 5.5 Salt consumption estimated from total urinary sodium by sex and age, 2000/01, Great Britain

	MEN					WOMEN				
Salt consumption (grams per day)	19-24 cum %	25-34 cum %	35-49 cum %	50-64 cum %	All cum %	19-24 cum %	25-34 cum %	35-49 cum %	50-64 cum %	All cum %
3 or less	-	5	2	5	4	4	6	5	7	6
6 or less	2	20	13	18	15	17	29	31	38	31
9 or less	37	34	39	42	39	66	59	68	69	66
12 or less	60	57	58	65	60	84	81	85	91	86
15 or less	81	73	80	83	79	90	92	96	96	95
18 or less	100	89	91	91	91	92	97	100	99	98
All	100	100	100	100	100	100	100	100	100	100
Mean	*11.0*	*11.4*	*11.1*	*10.5*	*11.0*	*9.1*	*8.7*	*8.0*	*7.5*	*8.1*
% exceeding recommended daily salt consumption	***98***	***80***	***87***	***82***	***85***	***83***	***71***	***69***	***62***	***69***
Base	*62*	*152*	*170*	*183*	*567*	*60*	*129*	*203*	*187*	*580*

Respondents who reported making a full 24-hour urine collection.

Data are weighted for non-response.

Source: 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.

Fig 5.5 Percentage of adults exceeding daily recommended consumption of salt by sex and age, 2000/01, Great Britain

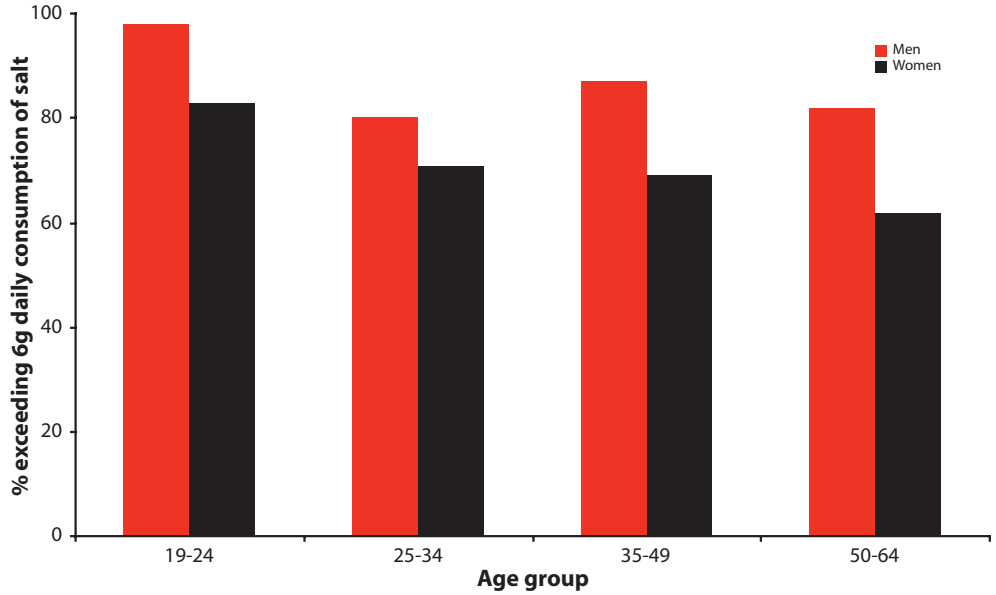


Table 5.6 Consumption of selected foods, 1942-2003/04, United Kingdom

	1942	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2003/04
Litres per person per week														
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	0.59
Skimmed milks								0.01	0.02	0.25	0.73	1.12	1.16	1.08
Yoghurt								0.03	0.06	0.08	0.11	0.15	0.16	0.18
Total milk and cream	**2.14**	**2.52**	**2.94**	**2.89**	**2.92**	**2.95**	**2.89**	**2.98**	**2.68**	**2.41**	**2.23**	**2.24**	**2.16**	**2.02**
Number per person per week														
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
Grams per person per week														
Natural cheese				70	75	81	92	99	103	103	105	98	97	99
Processed cheese				10	11	10	10	8	6	7	9	10	12	14
Total cheese	**101**	**71**	**72**	**80**	**86**	**91**	**102**	**107**	**110**	**111**	**113**	**108**	**109**	**113**
Oranges and other citrus fruits		75	93	108	124	122	142	143	153	119	136	136	137	151
Apples and pears			201	190	230	231	234	219	260	235	249	233	235	215
Bananas			37	83	96	101	85	85	91	83	130	184	214	211
Total fresh fruit	**197**	**318**	**409**	**457**	**522**	**533**	**543**	**511**	**608**	**540**	**624**	**693**	**765**	**789**
Fruit juice (ml)			7	8	14	19	17	42	97	165	225	272	332	322
Total other fruit			97	156	162	173	163	185	152	120	113	103	92	79
Total fruit	197	318	513	621	698	725	723	738	857	825	962	1,068	1,189	1,190
Fresh green vegetables	438	517	392	415	430	407	372	341	366	287	287	233	246	228
Other fresh vegetables	450	442	433	415	427	406	394	405	466	461	475	486	506	505
Total fresh vegetables (excludes potatoes)	**888**	**959**	**825**	**830**	**857**	**813**	**766**	**746**	**832**	**748**	**762**	**719**	**752**	**733**
All processed vegetables (includes frozen & canned)	136	188	214	224	260	304	382	506	554	625	638	697	671	611
Fresh potatoes	1,877	1,863	1,759	1,698	1,588	1,509	1,470	1,257	1,176	1,175	1,008	810	727	600
Bread	1,718	1,752	1,637	1,563	1,289	1,151	1,080	1,029	949	947	859	818	782	728
Flour	181	176	206	243	192	173	161	156	169	121	95	60	69	52
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	163
Breakfast cereals	23	26	40	48	51	56	78	82	94	109	121	127	135	134
Total cereals (excludes breads)	**593**	**672**	**678**	**706**	**711**	**729**	**711**	**649**	**655**	**638**	**692**	**775**	**846**	**833**
Bread and cereal products	**2,310**	**2,424**	**2,315**	**2,269**	**2,000**	**1,880**	**1,791**	**1,678**	**1,604**	**1,585**	**1,551**	**1,593**	**1,628**	**1,561**
Sugar	238	259	287	500	503	498	480	394	392	294	211	169	130	102
Preserves	140	155	179	116	91	85	73	76	63	58	52	43	37	33
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	17
Total beverages			**77**	**100**	**101**	**98**	**102**	**103**	**99**	**90**	**84**	**74**	**70**	**55**
Fresh white fish			89	90	67	64	50	37	32	28	24	20	15	16
Fresh fatty fish			16	11	9	7	6	5	7	7	8	10	14	18
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
Total fish and fish products	**187**	**261**	**188**	**169**	**166**	**164**	**152**	**128**	**137**	**140**	**147**	**147**	**144**	**1,56**
Salt					**26**	**25**	**28**	**25**	**32**	**27**	**15**	**13**	**9**	**10**
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	12
Low fat spreads										14	27	27	22	13
Reduced fat spreads											20	48	50	58
Lard	50	43	56	62	58	60	63	62	57	45	25	14	7	5
Total fats	**245**	**245**	**329**	**337**	**339**	**336**	**339**	**315**	**324**	**293**	**265**	**227**	**193**	**186**
Beef and veal	230	179	228	265	248	229	221	215	208	167	134	109	113	119
Mutton and lamb	150	173	154	186	188	167	149	119	128	92	82	54	54	49
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	117
Poultry			10	14	50	100	143	160	170	177	204	217	235	248
Sausages	113	110	114	99	103	106	106	99	100	92	74	68	66	70
Total meat and meat products	**746**	**746**	**846**	**976**	**1,017**	**1,066**	**1,121**	**1,055**	**1,160**	**1,069**	**999**	**986**	**1,014**	**1,061**

Men and women aged 16 and above. Purchases differ from actual food and drink consumption for a number of reasons e.g. food may be discarded during food preperation (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 2000 from adjusted National Food Survey (GB only). Data for 2003/04 from Expenditure and Food Survey

Because of the discontinuity between datasets, these trends need to be interpreted with caution.

Source: Department for Environment, Food and Rural Affairs (2005) Expenditure and Food Survey 2003/04 . The Stationery Office : London.

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

Fig 5.6a *Consumption of fats, 1942-2003/04, Great Britain*

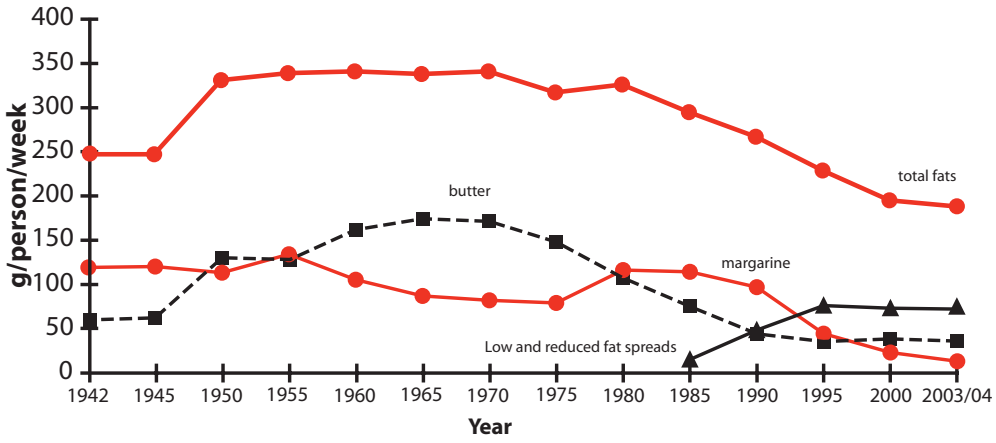


Fig 5.6b *Consumption of milk and milk products, 1942-2003/04, Great Britain*

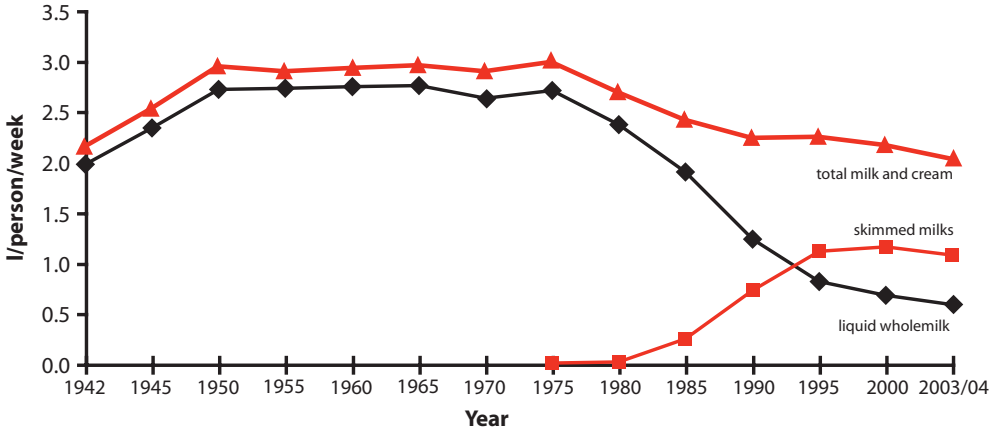


Fig 5.6c *Consumption of fresh fruit and vegetables, 1942-2003/04, Great Britain*

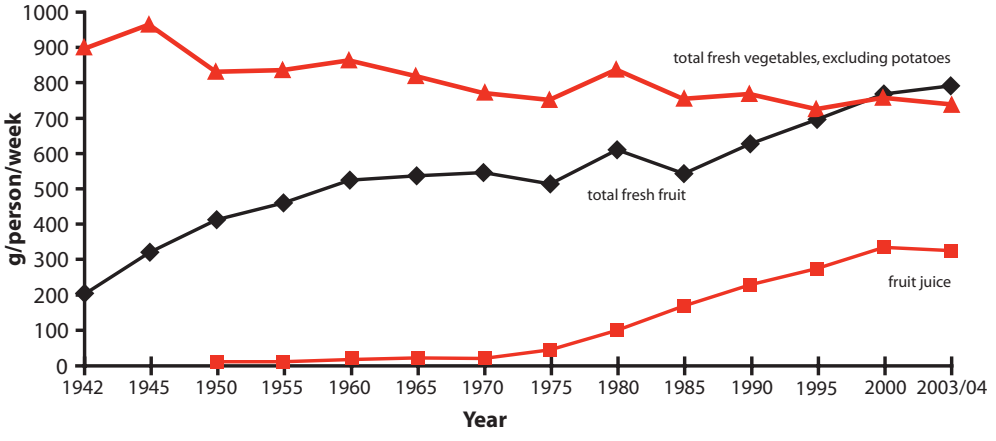


Table 5.7 Consumption of selected nutrients, adults aged 19-64, 1986/87 and 2000/01, Great Britain

	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%

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 5.8 Fruit and vegetable consumption by sex and age, children aged 5-15, 2004, England

Fruit and vegetable consumption (portions per day)	All ages %	5 %	6 %	7 %	8 %	9 %	10 %	11 %	12 %	13 %	14 %	15 %
BOYS												
None	10	6	n/a	14	5	9	9	17	6	17	11	16
Less than 1 portion	3	3	3	n/a	2	5	5	n/a	2	n/a	4	5
1 portion or more but less than 2	24	22	38	24	27	21	26	14	21	34	26	14
2 portions or more but less than 3	19	18	16	24	25	22	19	22	21	15	14	17
3 portions or more but less than 4	17	23	25	19	25	11	19	15	18	10	16	10
4 portions or more but less than 5	13	18	10	12	10	15	12	20	10	5	23	14
5 portions or more	13	9	9	7	7	17	10	12	21	18	7	24
Mean	*2.7*	*2.8*	*2.6*	*2.4*	*2.6*	*3.0*	*2.5*	*2.8*	*3.0*	*2.4*	*2.6*	*3.2*
% consuming less than the recommended number of portions per day	***87***	***91***	***91***	***93***	***93***	***83***	***90***	***88***	***79***	***82***	***93***	***76***
Base (unweighted)	*621*	*56*	*63*	*52*	*61*	*63*	*61*	*43*	*61*	*59*	*52*	*50*
GIRLS												
None	8	9	n/a	7	6	n/a	2	7	8	11	11	22
Less than 1 portion	7	5	6	12	5	15	7	6	10	12	n/a	n/a
1 portion or more but less than 2	21	9	16	29	17	22	36	21	18	22	23	21
2 portions or more but less than 3	21	25	25	26	15	21	19	13	24	10	30	23
3 portions or more but less than 4	18	31	32	10	20	17	14	26	12	16	15	11
4 portions or more but less than 5	13	11	13	14	18	15	4	22	9	13	15	11
5 portions or more	12	10	9	2	19	10	19	5	20	17	5	11
Mean	*2.7*	*2.8*	*3.0*	*2.2*	*3.1*	*2.7*	*2.6*	*2.7*	*2.9*	*2.9*	*2.5*	*2.4*
% consuming less than the recommended number of portions per day	***88***	***90***	***91***	***98***	***81***	***90***	***81***	***95***	***80***	***83***	***95***	***89***
Base (unweighted)	*552*	*39*	*48*	*44*	*66*	*35*	*52*	*45*	*57*	*53*	*56*	*56*
ALL												
None	9	7	n/a	10	6	5	5	12	7	14	11	19
Less than 1 portion	5	4	4	6	4	9	6	3	6	6	2	2
1 portion or more but less than 2	23	16	27	26	21	21	31	17	20	28	25	18
2 portions or more but less than 3	20	21	20	25	19	22	19	17	23	13	22	20
3 portions or more but less than 4	18	27	28	14	22	13	17	21	15	13	15	10
4 portions or more but less than 5	13	15	11	13	15	15	8	21	10	9	19	13
5 portions or more	13	9	9	5	14	14	14	9	20	18	6	18
Mean	*2.7*	*2.8*	*2.8*	*2.3*	*2.9*	*2.9*	*2.5*	*2.7*	*3.0*	*2.6*	*2.6*	*2.6*
% consuming less than the recommended number of portions per day	***87***	***91***	***91***	***95***	***86***	***86***	***86***	***91***	***80***	***82***	***94***	***82***
Base (unweighted)	*1,172*	*95*	*111*	*96*	*127*	*98*	*113*	*88*	*118*	*112*	*108*	*106*

Data weighted for non-response. Data is reported as 'n/a' if the base for the calculation is too small.

Source: Department of Health (2005) Health Survey for England 2004. The Stationery Office: London.
See http://www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/HealthSurveyResults/fs/en

Table 5.9 Salt consumption and percentage contribution of food types to average daily salt intake by sex and age, young people aged 4 to 18 years, 1997, Great Britain

	4-6 years		7-10 years		11-14 years		15-18 years	
Food type	Salt (g)	%	Salt (g)	%	Salt (g)	%	Salt (g)	%
BOYS								
Cereals & cereal products	2.1	40	2.6	42	2.7	40	3.2	38
Meat and meat products	1.1	20	1.3	21	1.6	24	2.3	28
Savoury snacks	0.4	7	0.4	7	0.4	6	0.3	4
Vegetables and potatoes	0.5	10	0.4	7	0.6	9	0.8	9
Milk and cheese	0.5	9	0.5	8	0.5	7	0.8	7
Other foods	0.7	14	0.9	15	1.0	14	1.0	14
Total (average daily intake)	**5.3**	**100**	**6.1**	**100**	**6.8**	**100**	**8.3**	**100**
GIRLS								
Cereals & cereal products	1.9	39	2.3	42	2.6	38	3.1	38
Meat and meat products	0.9	19	1.2	21	1.5	22	1.8	28
Savoury snacks	0.4	8	0.4	8	0.6	8	0.4	4
Vegetables and potatoes	0.4	8	0.3	6	0.6	8	0.8	9
Milk and cheese	0.5	10	0.4	8	0.5	7	0.6	7
Other foods	0.8	16	0.8	15	0.1	17	1.7	14
Total (average daily intake)	**4.7**	**100**	**5.5**	**100**	**5.8**	**100**	**8.3**	**100**

Source: Scientific Advisory Committee on Nutrition (2003) Salt and Health. The Stationery Office: London. Data from the 1997 National Diet and Nutrition Survey: young people aged 4-18 years.

Table 5.10 Consumption of energy, fat, saturated fat, sodium, salt, fruit and vegetables by country of the United Kingdom, and by Government Office Region in England, April 2001 - March 2004, United Kingdom

	UK country				Government Office Region in England								
	England	Wales	Scotland	Northern Ireland	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West
Energy (kcal/day)	2,292	2,353	2,290	2,290	2,300	2,445	2,284	2,348	2,274	2,321	2,138	2,247	2,365
Energy (MJ/day)	9.6	9.9	9.6	9.6	9.7	10.3	9.6	9.9	9.6	9.8	9.0	9.4	9.9
Total fat (% food energy)	37.8	38.2	37.3	37.0	37.7	38.1	37.5	37.7	37.7	37.9	37.6	38.1	38.0
Saturated fat (% food energy)	14.8	14.9	15.1	14.8	14.9	14.7	14.7	14.9	14.7	14.9	14.0	15.0	15.1
Sodium* (g/day)	3.0	3.2	3.0	3.1	3.1	3.3	3.1	3.1	3.1	3.1	2.6	3.1	3.1
Salt** (g/day)	7.6	8.1	7.6	7.9	7.9	8.3	7.7	7.9	7.8	7.8	6.7	7.8	7.7
Fruit (g/day)	174	147	149	128	141	153	152	168	149	192	189	174	198
Vegetables - excluding potatoes (g/day)	160	152	127	117	137	142	158	164	156	170	159	155	169

** Excludes sodium from table salt*

*** Conversion factor: salt (g) = sodium (g) x 2.52*

Source: Office for National Statistics (2005) Expenditure and Food Survey 2003/04 . The Stationery Office : London.

Table 5.11 Consumption of fruit and vegetables by sex, country and region, 2000/01, Great Britain

	MEN				WOMEN			
Average daily number of portions of fruit and vegetables consumed	Scotland	Northern England	Central, South West England and Wales	London and the South East England	Scotland	Northern England	Central, South West England and Wales	London and the South East England
	cum %	cum %	cum %	cum %	cum %	cum %	cum %	cum %
None	0	2	1	1	1	2	1	0
Less than one portion	18	19	20	17	17	25	13	12
Less than two portions	44	47	48	40	35	46	40	32
Less than three portions	67	67	67	56	60	65	63	54
Less than four portions	73	77	78	72	65	76	78	70
Less than five portions	83	88	90	83	84	83	87	85
All	100	100	100	100	100	100	100	100
Mean number of portions	*2.9*	*2.6*	*2.6*	*3.0*	*3.0*	*2.7*	*2.8*	*3.2*
% eating recommended 5 or more portions a day	**17**	**12**	**10**	**17**	**16**	**17**	**13**	**15**
Base	*65*	*234*	*294*	*240*	*66*	*229*	*327*	*268*

Portions include fruit and vegetables consumed in composite dishes such as fruit pies, vegetable lasagne, cauliflour cheese and vegetable samosas.

Data are weighted for non-response.

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.

Table 5.12 Consumption of energy, fat, saturated fat, sodium, salt, fruit and vegetables by income quintile, April 2001 - March 2004, United Kingdom

	Quintile 1 (Lowest income)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (Highest income)
Energy (kcal/day)	2,269	2,402	2,298	2,191	2,279
(MJ/day)	9.5	10.1	9.7	9.2	9.6
Total fat (% food energy)	38.3	38.3	37.9	38.1	38.2
Saturated fat (% food energy)	15.1	15.1	14.8	14.8	14.9
Sodium* (g/day)	2.9	3.0	3.0	2.9	3.0
Salt** (g/day)	7.3	7.6	7.5	7.4	7.6
Fruit (g/day)	148	175	161	159	194
Vegetables - excluding potatoes (g/day)	145	164	153	147	159

** Excludes sodium from table salt*

*** Conversion factor: salt (g) = sodium (g) x 2.52*

Source: Office for National Statistics (2005) Expenditure and Food Survey 2003/04 . The Stationery Office : London.

Table 5.13 Fruit and vegetable consumption, fat intake and use of salt by sex and ethnic group, 2004, England

	General Population (2003)	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish
MEN	%	%	%	%	%	%	%	%
Fruit and vegetables								
5 or more portions per day	23	32	31	37	33	32	36	26
Mean number of portions per day	3.3	3.9	3.7	4.2	4.3	3.8	4.4	3.6
Fat intake								
Low fat	72	82	86	89	80	83	86	77
Medium fat	22	14	10	10	16	12	13	19
High fat	6	5	4	1	4	5	0	4
Bases (unweighted)								
Fruit and vegetables	*2,878*	*412*	*390*	*550*	*432*	*411*	*348*	*497*
Fat intake	*4,742*	*186*	*145*	*281*	*175*	*113*	*168*	*293*
Use of salt	*5,022*	*208*	*157*	*309*	*199*	*134*	*179*	*312*
WOMEN	%	%	%	%	%	%	%	%
Fruit and vegetables								
5 or more portions per day	27	31	32	36	32	28	42	32
Mean number of portions per day	3.6	3.9	3.8	4.4	4.0	3.6	4.9	3.9
Fat intake								
Low fat	84	89	82	94	87	88	84	84
Medium fat	14	11	14	5	11	10	15	15
High fat	3	1	4	1	2	3	1	1
Bases (unweighted)								
Fruit and vegetables	*3,825*	*652*	*469*	*634*	*508*	*478*	*375*	*656*
Fat intake	*5,928*	*277*	*186*	*321*	*214*	*150*	*178*	*382*
Use of salt	*6,255*	*321*	*212*	*370*	*242*	*178*	*191*	*413*

Fat intake assessed using a weighted food frequency questionnaire. Informants were asked about consumption of a range of foods and fat scores were based on the frequency of consumption and amount of food consumed, and the fat content of a standard portion. Low intake (fat score less than 30) represents a fat intake of 83g/day or less. High intake (fat score greater than 40) represents a fat intake of 122g/day or more. Percentages may not add to 100 due to rounding.

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

Table 5.14 Percentage of total energy available from fat by country, 2002, selected European countries

Albania	27.6	Latvia	33.6
Armenia	16.6	Lithuania	26.5
Austria	38.8	Luxembourg	40.1
Azerbaijan	14.7	Malta	28.4
Belarus	29.3	Netherlands	38.6
Belgium	40.1	Norway	37.6
Bosnia and Herzegovina	19.2	Poland	30.1
Bulgaria	30.3	Portugal	33.6
Croatia	26.1	Republic of Moldova	17.8
Cyprus	36.3	Romania	25.0
Czech Republic	33.5	Russia	24.3
Denmark	36.5	Serbia and Montenegro	39.6
Estonia	27.3	Slovakia	34.7
Finland	35.7	Slovenia	31.9
France	42.1	Spain	40.3
FYR of Macedonia	25.6	Sweden	35.5
Georgia	18.7	Switzerland	39.9
Germany	37.7	Tajikistan	18.8
Greece	36.9	Turkey	24.6
Hungary	38.0	Turkmenistan	20.7
Iceland	36.2	Ukraine	24.1
Ireland	32.6	United Kingdom	36.6
Israel	34.1	Uzbekistan	24.5
Italy	38.8	*Europe average*	*32.0*
Kazakhstan	25.6	*EU-15 average*	*38.5*
Kyrgyzstan	16.9	*EU-25 average*	*31.8*

Source: World Health Organization (2005) European Health for All statistical database.
See http://www.euro.who.int/hfadb

Fig 5.14 Percentage of total energy available from fat by country, 2002, selected European countries

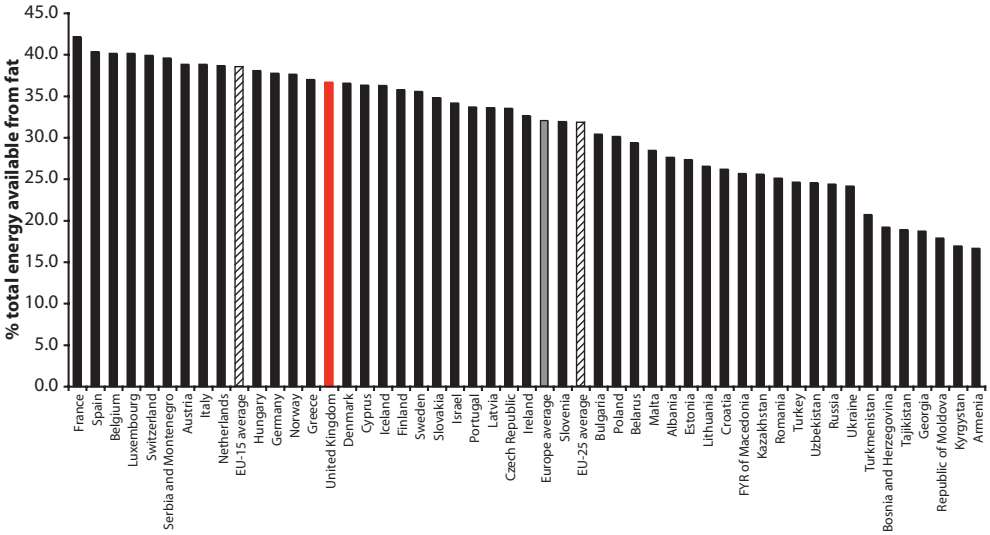


Table 5.15 Availability of fruit and vegetables, 2002, selected European countries

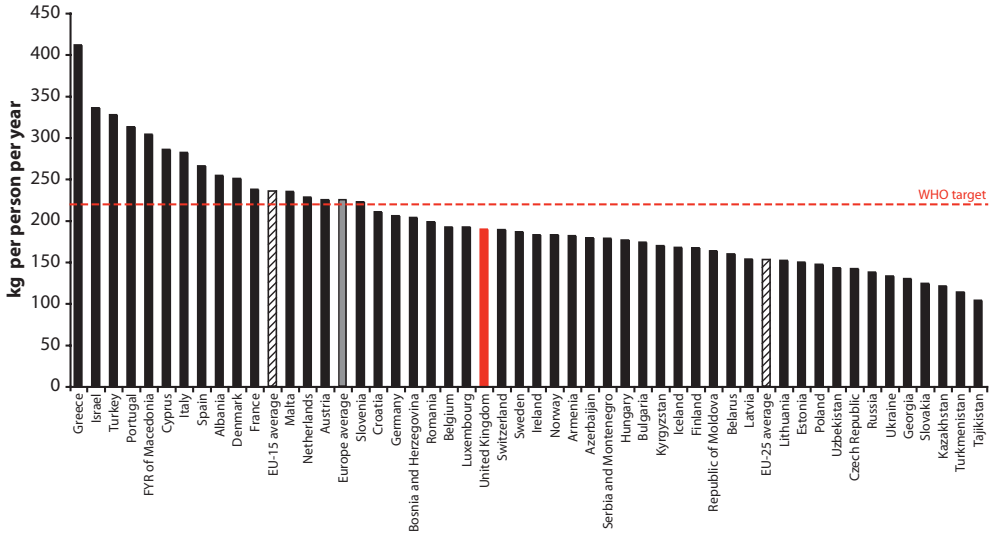
	kg per person per year		kg per person per year
Albania	254.6	Latvia	153.4
Armenia	181.6	Lithuania	152.1
Austria	225.1	Luxembourg	192.0
Azerbaijan	179.0	Malta	235.4
Belarus	160.0	Netherlands	228.5
Belgium	192.0	Norway	182.6
Bosnia and Herzegovina	204.0	Poland	147.3
Bulgaria	173.7	Portugal	313.4
Croatia	210.4	Republic of Moldova	163.2
Cyprus	285.8	Romania	198.3
Czech Republic	142.0	Russia	137.7
Denmark	250.7	Serbia and Montenegro	178.5
Estonia	150.0	Slovakia	124.3
Finland	166.9	Slovenia	222.5
France	237.8	Spain	266.2
FYR of Macedonia	304.6	Sweden	186.5
Georgia	130.1	Switzerland	189.1
Germany	206.1	Tajikistan	103.8
Greece	412.5	Turkey	327.8
Hungary	176.3	Turkmenistan	113.6
Iceland	167.7	Ukraine	133.2
Ireland	182.9	United Kingdom	189.5
Israel	336.4	Uzbekistan	142.9
Italy	282.2	*Europe average*	*225.1*
Kazakhstan	120.8	*EU-15 average*	*235.8*
Kyrgyzstan	169.5	*EU-25 average*	*153.2*

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.
See http://www.euro.who.int/hfadb

See http://www.euro.who.int/hfadb

Fig 5.15 Availability of fruit and vegetables, 2002, selected European countries



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).

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

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 highlights the importance of physical inactivity as a major risk factor for CHD. The World Health Report 2002 estimates that around 3% of all disease burden in developed countries is caused by physical inactivity, and that over 20% of CHD and 10% of stroke in developed countries is due to physical inactivity (less than 2.5 hours per week moderate intensity activity or 1 hour per week vigorous activity)[1].

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 April 2004 the Chief Medical Officer restated this recommendation in his report *At least five a week*, and highlighted the importance of physical activity in the prevention of CHD, diabetes and obesity[2].

Choosing Activity: a physical activity action plan was published in 2005[3]. It outlines the key commitments relating to physical activity contained within the White Paper *Choosing Health* which aim to increase levels of physical activity in adults and children in England[4].

Overall levels of physical activity

Physical activity levels are low in the UK. The latest Health Survey for England data from 2004 show only 37% of men and 25% of women meet the current guidelines suggested by the Government (Table 6.3)[5]. In addition, in 2003 over one third of adults were inactive, that is, participated in less than one occasion of 30 minutes activity a week (Table 6.2).

These findings are supported by data from the 2000/01 National Diet and Nutrition Survey which show that overall between two-thirds and three-quarters of adults in the UK do less than 30 minutes of activity on five or more days a week[6].

Analysis of earlier Health Survey for England data showed that around two-thirds (64%) of the total activity in the population in 1998 was due to activity at work, 12% to walking, 9% to housework, 7% to gardening and DIY, and just 8% to sport[7].

Age and sex differences

Physical activity declines rapidly with increasing age for both men and women, although for women this decline does not begin until the mid-forties (Tables 6.2 and Figs 6.2a and 6.2b).

In 2004, 56% of men and 32% of women aged 16-24 were physically active for 30 minutes or more at least five days a week. This declines to 18% and 14% of women in the 65-74 age group (Table 6.3).

Physical activity in children

It is recommended that all children and young people aged 5-18 participate in physical activity of at least moderate intensity for one hour a day[2,3]. In 2002 in England, 70% of boys aged 2-15 and 61% of girls, were active for at least an hour a day (Table 6.4)[8]. In girls, participation rates decline with age after about age 10. By the age of 15, only 50% of girls reach the recommended level of activity (Table 6.4).

Temporal trends

Over the last 25 years it appears that there has been a significant decrease in physical activity as part of daily routines, but a small increase in the proportion of people taking physical activity for leisure in the UK[2]. Data from the National Travel Survey show that in England between 1975/76 and 2002 the average number of miles per year travelled by foot fell by around a quarter and by cycle by around a third. Over the same period the average number of miles per year travelled by car increased by just under 70%[9].

Evidence on more recent trends in physical activity levels comes from the Health Survey for England. Between 1997 and 2004 the overall proportion of adults meeting the recommended level of physical activity increased from 32% to 37% in men and increased from 21% to 25% in women (Table 6.3).

Health Survey for England trend data on children suggest that between 1997 and 2002 levels of physical activity increased in both boys and girls. However, as the questions on physical activity in children varied substantially between the two surveys these findings should be viewed with caution[10].

National and regional differences

In 2003, levels of physical activity in Scotland were higher for men in all age groups than in England[11]. This was particularly the case for 25-34 year olds, where 57% met physical activity recommendations in Scotland, compared to 44% in England. This was also the case for women – 40% of 25-34 year olds met recommendations in Scotland compared to 29% in England.

Socio-economic differences

Socio-economic differences in physical activity are complex. In men, overall activity levels are lowest in those with managerial and professional jobs: in England in 2003 only 32% meet current recommended levels compared to 49% of small employers and own account workers. In women, however, the pattern is reversed: 34% of women with managerial and professional jobs meet the current recommended levels of physical activity compared to between 24% and 29% of women from other socio-economic groups (Table 6.5).

Overall activity levels vary by household income in men, being highest among those with mid-range household incomes and lowest at both extremes of the income distribution. No pattern is apparent in women (Table 6.6). However, participation in two specific types of physical activity, sports/exercise and walking, increases with income in both men and women[12].

Ethnic differences

Compared with the general population, Indian, Pakistani, Bangladeshi and Chinese men and women are less likely to meet physical activity recommendations. Only 26% of Bangladeshi men and 11% of Bangladeshi women meet the current recommended physical activity levels (30 minutes activity on five or more days a week). Irish men and Black Caribbean women are the most likely to be physically active at the recommended level (Table 6.7 and Fig 6.7).

International differences

Levels of activity vary across European member states, with levels of activity in the UK falling just below the EU average (Table 6.8 and Fig 6.8).

Public health targets

Recent data from the Scottish Health Survey suggest that good progress has been made towards Scotland's physical activity targets for men and women, but that the target for 2005 may not be achieved (Fig 6.1).

A target for physical activity in England was proposed in 2004 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)[13]. This is a very ambitious target requiring participation levels in England to more than double in just over15 years.

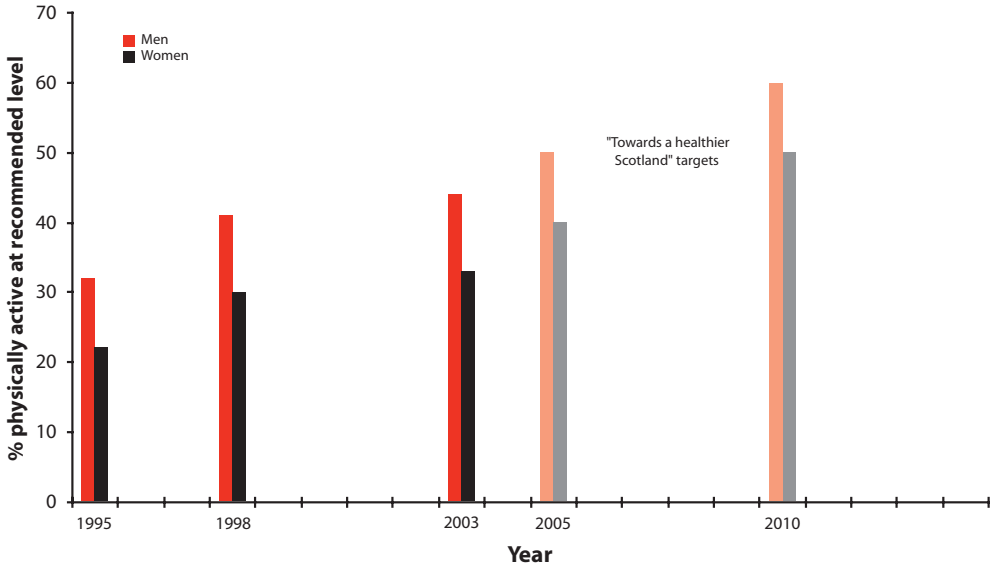
1. *World Health Organization (2002) The World Health Report 2002. Reducing Risks, Promoting Healthy Life. World Health Organization: Geneva.*
2. *Department of Health (2004) At least five a week: evidence on the impact of physical activity and its relationship to health. Department of Health: London. See www.dh.gov.uk/assetRoot/04/08/09/81/04080981.pdf*
3. *Department of Health (2005) Choosing Activity: a physical activity action plan. DH: London.*
4. *Department of Health (2004) Choosing Health: making healthy choices easier. DH: London.*
5. *In 2003 in Scotland 44% of men and 33% of women were physically active at the recommended levels. The Scottish Executive Department of Health (2005) The Scottish Health Survey 2003. The Stationery Office: Edinburgh.*
6. *Office for National Statistics (2004) National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 4: Nutritional status (anthropometry and blood analytes), blood pressure and physical activity. The Stationary Office: London.*
7. *Analysis of 1998 Health Survey for England data presented in Sustrans March 2004 Information Sheet FH04, Active travel as physical activity promotion.*
8. *These data are self-reports of physical activity. An important limitation of this data is the tendency among some children/parents to over-claim levels of physical activity, quoting what they believe the child should do rather than what was actually done.*
9. *This survey records journeys on public highways, but excludes walking or cycling for leisure. For the latest edition (2002) See www.dft.gov.uk/stellent/groups/dft_transstats/documents/page/dft_transstats_028347.hcsp*
10. *For a comparison of children's activity levels in 1997 and 2002, see section 4.2.6 of the 2002 Health Survey for England at www.archive2.official-documents.co.uk/document/deps/doh/survey02/hse02.htm*
11. *Scottish Executive Department of Health (2005) The Scottish Health Survey 2003. The Stationery Office: Edinburgh.*
12. *See Figure 5I, p193, Department of Health (1999) Health Survey for England 1998. The Stationery Office: London.*
13. *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. See www.strategy.gov.uk/downloads/work_areas/sport/sport.pdf*

Table 6.1 Physical activity targets for the United Kingdom

England[1,2]	
Adults[1]	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[2]	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 per cent in 2008
Wales	No target set
Scotland[3]	
Adults - *Target*	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 - *Target*	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
Northern Ireland[4]	No target set

1. *Joint Department of Culture, Media and Sport and Strategy Unit Report (2002) Game Plan: a strategy for delivering Government's sport and physical activity objectives. Strategy Unit: London. www.number-10.gov.uk/su/sport/report/03.htm*
2. *HM Treasury (2004) Spending Review. Department for Culture, Media and Sport www.hm-treasury.gov.uk./media/965/FB/sr2004_ch18.PDF*
3. *Let's Make Scotland More Active: A strategy for physical activity (2003). 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 later 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, 2003, England

	All ages %	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75 & over %
Summary physical activity level*								
MEN								
Group 1 - Low	32	18	20	24	32	39	52	72
Group 2 - Medium	31	29	36	35	31	29	32	20
Group 3 - High	37	53	44	41	38	32	17	8
Bases	*7,177*	*1,044*	*1,272*	*1,412*	*1,180*	*1,037*	*731*	*501*
WOMEN								
Group 1 - Low	40	31	27	28	35	41	56	82
Group 2 - Medium	36	39	45	42	34	36	31	14
Group 3 - High	24	30	29	30	31	23	13	3
Bases	*7,611*	*1,029*	*1,279*	*1,437*	*1,199*	*1,071*	*813*	*782*

Data are weighted for non-response.

Adults aged 16 and over.

* *Group 3= 30 minutes or more on at least 5 days a week;*
Group 2= 30 minutes or more on 1 to 4 days a week;
Group 1= lower level of activity.

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

Fig 6.2a *Physical activity level by age, men, 2003, England*

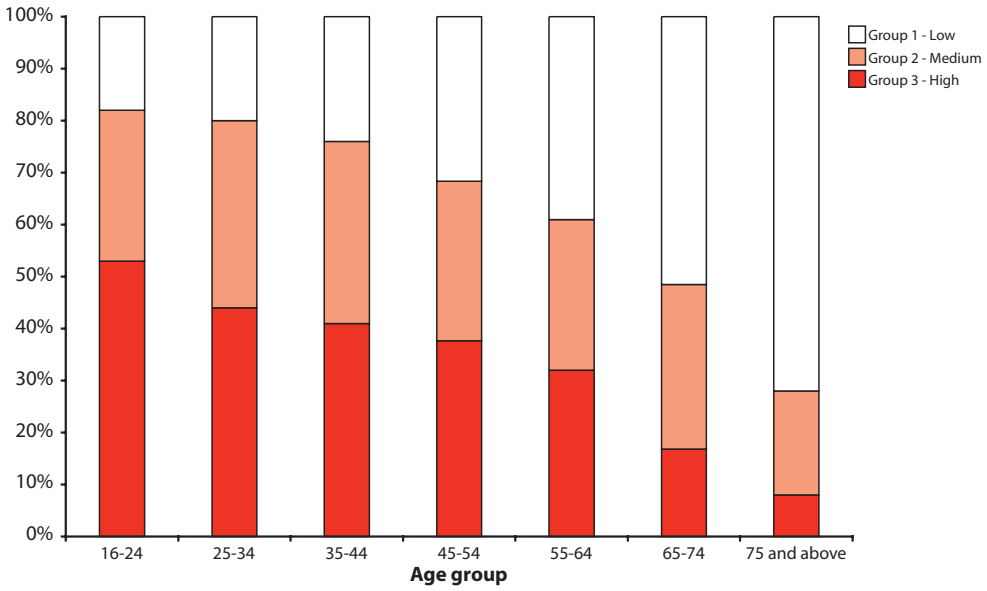


Fig 6.2b *Physical activity level by age, women, 2003, England*

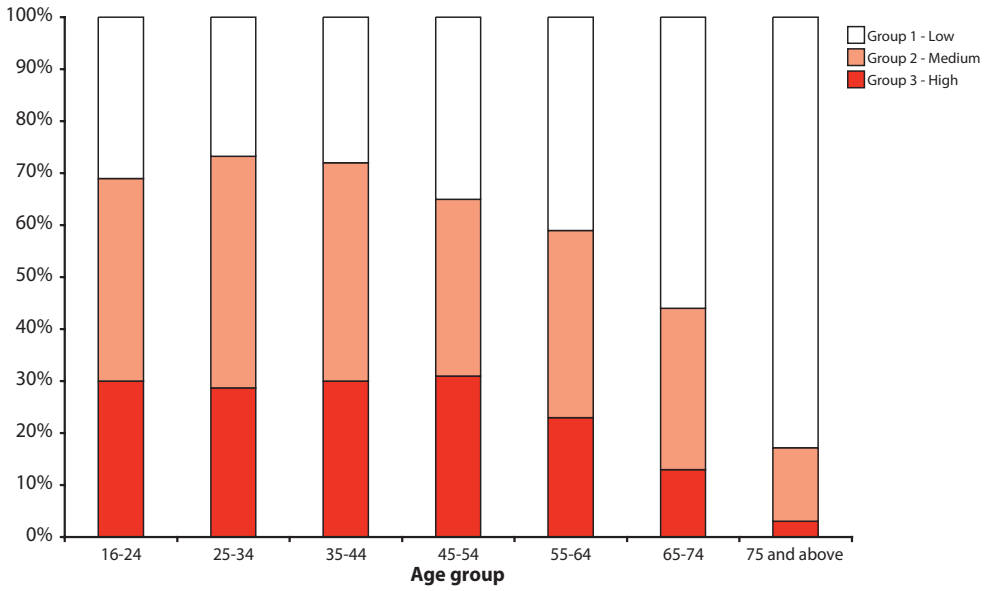


Table 6.3 Proportion achieving the current physical activity level recommendations (at least 30 minutes of moderate intensity activity on five or more days a week), by sex and age, 1997, 1998, 2003 and 2004, England

	All ages %	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75 & over %
MEN								
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
Bases 1997	*3,898*	*492*	*739*	*740*	*694*	*535*	*455*	*243*
1998	*7,193*	*875*	*1,338*	*1,305*	*1,289*	*987*	*837*	*562*
2003	*7,177*	*1,044*	*1,272*	*1,412*	*1,180*	*1,037*	*731*	*501*
2004	*46,089*	*6,860*	*7,874*	*9,160*	*7,505*	*6,758*	*4,656*	*3,276*
WOMEN								
1997	21	26	26	29	24	19	8	5
1998	21	28	28	28	25	18	9	3
2003 (weighted)	24	30	29	30	31	23	13	3
2004 (weighted)	25	32	30	32	30	20	14	4
Bases 1997	*4,684*	*560*	*916*	*833*	*806*	*585*	*545*	*439*
1998	*8,715*	*1,006*	*1,630*	*1,573*	*1,484*	*1,148*	*967*	*907*
2003	*7,611*	*1,029*	*1,279*	*1,437*	*1,199*	*1,071*	*813*	*782*
2004	*48,643*	*6,683*	*7,966*	*9,241*	*7,654*	*6,955*	*5,152*	*4,991*

For 2003 and 2004 data 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 2-15, by sex and age, 2002, England

*Summary physical activity level**	Total %	Age (years) 2 %	3 %	4 %	5 %	6 %	7 %	8 %	9 %	10 %	11 %	12 %	13 %	14 %	15 %
BOYS															
Group 1- Low	**17**	20	12	12	17	16	14	18	17	16	14	18	15	24	17
Group 2- Medium	**13**	13	12	15	17	14	15	14	14	12	9	11	17	14	14
Group 3- High	**70**	67	76	73	67	70	71	68	69	72	77	71	69	62	69
% physically active at the recommended level	*70*	*67*	*76*	*73*	*67*	*70*	*71*	*68*	*69*	*72*	*77*	*71*	*69*	*62*	*69*
Base (weighted)	***4,201***	*283*	*266*	*285*	*287*	*304*	*336*	*317*	*296*	*331*	*322*	*299*	*290*	*309*	*275*
GIRLS															
Group 1- Low	**22**	23	11	21	18	18	22	19	23	17	20	26	27	35	35
Group 2- Medium	**16**	12	11	14	16	13	13	19	15	17	16	22	23	21	15
Group 3- High	**61**	65	78	65	66	69	65	62	62	66	64	52	50	44	50
% physically active at the recommended level	*61*	*65*	*78*	*65*	*66*	*69*	*65*	*62*	*62*	*66*	*64*	*52*	*50*	*44*	*50*
Base (weighted)	***4,058***	*283*	*278*	*261*	*301*	*296*	*298*	*300*	*300*	*281*	*310*	*304*	*296*	*280*	*270*

** Group 3= 60 minutes or more on all 7 days in last week;*
Group 2= 30-59 minutes on all 7 days;
Group 1= 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 level by sex and socio-economic classification, 2003, England

*Summary physical activity level**	Socio-economic classification: Managerial & professional	Intermediate	Small employers & own account workers	Lower supervisory & technical	Semi-routine & routine
	%	%	%	%	%
MEN					
Group 1 - Low	28	30	28	30	35
Group 2 - Medium	40	35	23	25	22
Group 3 - High	32	35	49	45	43
Base	*2,932*	*506*	*825*	*969*	*1,814*
WOMEN					
Group 1 - Low	36	37	36	38	43
Group 2 - Medium	39	38	35	35	33
Group 3 - High	34	25	29	27	24
Base	*2,898*	*714*	*752*	*875*	*2,153*

Adults aged 16 and over.

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

Data are weighted for non-response.

** Group 3= 30 minutes or more physical activity on at least 5 days a week;*
Group 2= 30 minutes or more on 1 to 4 days a week;
Group 1= lower level of activity.

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

Table 6.6 Physical activity level by sex and income, 2003, England

*Summary physical activity level**	Equivalised annual household income quintile: Lowest %	4th %	3rd %	2nd %	Highest %
MEN					
Group 1 - Low	43	34	30	25	25
Group 2 - Medium	25	26	27	36	40
Group 3 - High	32	41	43	40	35
Base	*1,031*	*971*	*1,277*	*1,417*	*1,389*
WOMEN					
Group 1 - Low	45	40	40	35	32
Group 2 - Medium	32	33	35	40	42
Group 3 - High	23	26	25	26	27
Base	*1,276*	*1,134*	*1,422*	*1,364*	*1,171*

Adults aged 16 and over.

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

Data are weighted for non-response.

** Group 3= 30 minutes or more physical activity on at least 5 days a week;*
Group 2= 30 minutes or more on 1 to 4 days a week;
Group 1= lower level of activity.

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

Table 6.7 Physical activity by sex and ethnic group, 2004, England

*Summary physical activity level**	General population	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish
MEN	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Group 1 - Low	32	34	35	44	51	51	38	33
Group 2 - Medium	31	29	30	26	21	23	32	28
Group 3 - High	37	37	35	30	28	26	30	39
Base (unweighted)	*2,873*	*409*	*386*	*549*	*429*	*408*	*348*	*497*
WOMEN	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Group 1 - Low	39	39	43	45	52	68	47	33
Group 2 - Medium	36	30	28	32	34	21	36	38
Group 3 - High	25	31	29	23	14	11	17	29
Base (unweighted)	*3,818*	*648*	*467*	*634*	*508*	*477*	*375*	*656*

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

** Group 3= 30 minutes or more physical activity on at least 5 days a week (recommended level);*
Group 2= 30 minutes or more on 1 to 4 days a week;
Group 1= lower level of activity.

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

Fig 6.7 Percentage of adults participating in 30 minutes or more physical activity on at least 5 days a week, by sex and ethnic group, 2004, England

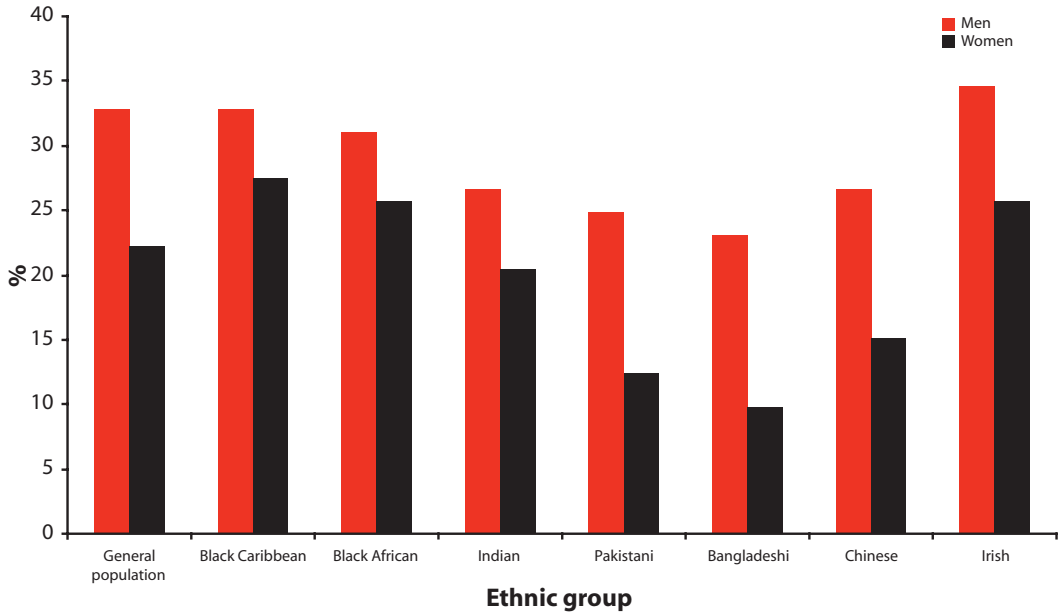
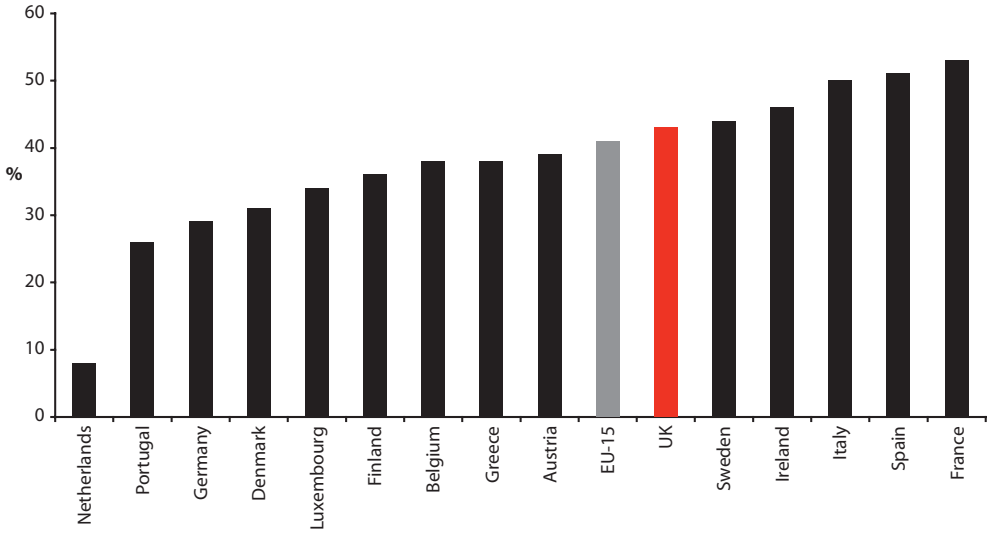


Table 6.8 Self-reported physical activity levels, 2002, EU-15 countries

	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Luxembourg	Netherlands	Portugal	Spain	Sweden	UK	Total EU-15
Number of days in last week walked for 10 minutes or more	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
None	19	27	11	10	22	13	19	18	16	14	23	17	15	13	19	17
1-3	22	26	18	25	25	23	23	19	23	24	28	15	14	30	22	22
4-6	24	18	13	23	18	26	14	27	17	17	17	19	16	22	19	20
7 days	31	27	51	42	34	37	43	35	41	39	30	47	53	34	41	39
Don't know	5	2	2	1	1	2	1	1	3	6	2	3	2	1	<1	2
Number of days in last week undertook moderate physical activity	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
None	39	38	31	36	53	29	38	46	50	34	8	26	51	44	43	41
1-3	27	24	28	33	27	30	23	22	26	27	19	19	20	30	28	26
4-6	20	18	20	16	9	24	12	17	10	14	23	18	14	13	14	16
7 days	8	18	22	15	10	15	27	14	12	21	49	31	13	12	15	15
Don't know	5	3	<1	1	1	3	<1	2	2	4	2	6	2	1	<1	2
Number of hours spent sitting on a usual day	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Less than 2.5	18	16	6	14	20	13	20	21	13	15	11	36	20	10	20	17
2.5-4.5	26	27	22	22	31	27	29	32	26	27	26	27	29	27	33	28
More than 4.5	42	49	68	61	44	50	49	44	56	50	58	32	45	59	44	49
Don't know	14	8	4	3	5	10	2	3	5	7	6	5	6	4	3	6
Average number of hours	7.9	6.9	7.3	6.6	5.8	7.6	5.5	5.4	6.6	6.9	7.0	5.0	6.2	6.7	5.6	6.5

Source: European Commission (2003) Physical Activity. Special Eurobarometer 183-6/Wave 58.2 - European Opinion Research Group EEIG. http://europa.eu.int/comm/public_opinion/archives/ebs/ebs_183_6_en.pdf

Fig 6.8 *Percentage of adults who do no moderate-intensity physical activity in a typical week, 2002, EU-15 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[1].

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'[2]. 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's recommendations on sensible drinking are now based on these daily benchmarks[3].

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[4].

Overall levels of alcohol consumption

In Britain, 39% of men and 22% of women consume 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).

In Britain 27% of men and 17% of women consume more than the weekly recommended levels of alcohol; that is 21 units a week for men and 14 units a week for women (Table 7.4).

Age and sex differences

Overall men are more than one and a half times as likely as women to exceed the daily and weekly recommended levels of alcohol consumption (Table 7.2 and Table 7.4), and over twice as likely to binge drink[5] (Table 7.2).

Alcohol consumption is higher in younger age groups, for example 47% of men and 39% of women aged 16-24 drink more than the recommended daily benchmarks, compared with only 20% of men and 5% of women aged 65 or over (Table 7.2 and Figs 7.2a and 7.2b).

In every age group men are more likely to exceed the weekly recommended drinking level than women. This excess of male heavy drinking is smallest in those aged 16-24 years and increases steadily with age (Table 7.4).

Similar patterns are evident for binge drinking. The prevalence of binge drinking is highest in the 16-24 years age group, with 32% of young men and 24% 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[6] (Table 7.8).

More recent trend data from the General Household Survey show that in the last 10 years the percentage of adults consuming more than the recommended weekly level of alcohol remained stable in men, but increased by over 50% in women. In young women (aged 16-24) the proportion drinking in excess of weekly guidelines doubled in a decade (Table 7.4 and Fig 7.4).

Evidence about temporal trends in binge drinking is more short-term as the General Household Survey has only included questions about the maximum daily amount consumed since 1998. Between 1998 and 2004, there have been fluctuations in the patterns of binge drinking over time (Table 7.3).

National and regional differences

On a regional basis the proportions consuming more than the recommended daily level of alcohol are lowest in London for men and London and the East of England for women, and highest in the North East for men and Yorkshire and the Humber for women (Figs 7.5a and 7.5b). For example, in 2004 while 32% of women in Yorkshire and the Humber consumed more than three units on the heaviest drinking day of the week, only 15% of women in London and East of England consumed more than the recommended sensible daily level (Table 7.5).

Socio-economic differences

Among both men and women, those in managerial and professional households are the most likely to drink and the most likely to drink on five or more days a week. For example, in 2004 in Britain, 73% of women in large employer/higher managerial households drank alcohol in the preceding week, with 21% drinking on five or more days a week. This compares with only 47% and 9% respectively of women in routine occupation households (Table 7.6).

However, the amount of alcohol drunk is less clearly related to socio-economic group, especially in men. Men and women in managerial/professional households are slightly more likely to exceed the daily recommended benchmarks than those in routine or manual occupations. However, binge drinking does not vary by socio-economic group: in all socio-economic groups in 2004, about one in ten women and one in five men exceeded the daily benchmarks for binge drinking (Table 7.6).

Ethnic differences

Levels of alcohol consumption vary considerably with ethnicity (Table 7.7 and Figs 7.7a and 7.7b).

Adults from all minority ethnic groups, with the exception of the Irish, are 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[7]. Women are more likely than men to be non-drinkers in all ethnic groups (Table 7.7 and Figs 7.7a and 7.7b).

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 70% of Irish men and over half (53%) of Irish women exceeded guidelines for the heaviest drinking day (Table 7.7 and Figs 7.7a and 7.7b).

The level of drinking is similar in men in Black Caribbean, Black African, Indian and Chinese communities (around 20% consumed more than eight units on the heaviest drinking day); compared with 40% among Irish men and one third of the general population. Apart from Irish women, the proportion of women in minority ethnic groups consuming more than six units on the heaviest drinking day is lower than for the general population (Table 7.7).

International differences

Levels of alcohol consumption in the UK are below the European Union average (EU-15 and EU-25) and are higher than the European region average (Fig 7.8). In the EU as a whole, consumption of alcoholic drinks has steadily declined since 1980[8], but in the UK there has been no strong evidence of decline (Table 7.8). Alcohol consumption is now only 5% below the EU-15 average compared to 30% below in 1980.

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 UK6. The Alcohol Harm Reduction Strategy for England, published in 2004, did not, however, include such targets[9]. Currently in the UK only Scotland has targets for limiting alcohol consumption (Table 7.1).

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*
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 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.*
6. *The Academy of Medical Sciences (2004) Calling time: the nation's drinking as a major health issue. Academy of Medical Sciences: London. See www.acmedsci.ac.uk/images/project/CallingT.pdf .*
7. *Data from 2003 Health Survey for England. In the 2004 survey the base for these ethnic groups was too small for accurate estimates.*
8. *This trend is the same for both the 15 countries in the EU before 1 May 2004 and the 25 countries in the EU since 1 May 2004.*
9. *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*

Table 7.1 Alcohol targets for the United Kingdom

England[1]	
	No target set
Wales[2]	
	No target set
Scotland[3]	
Men - *Headline Target*	To reduce the proportion of men aged 16-64 exceeding the weekly limit of 21 units of alcohol from 33% to 31% between 1995 and 2005 and to 29% by 2010
Women - *Headline Target*	To reduce the proportion of women aged 16-64 exceeding the weekly limit of 14 units of alcohol from 13% to 12% between 1995 and 2005 and to 11% by 2010
Young people - *Second Rank Target*	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
Northern Ireland[4]	
	No target set

1. *The Government's Strategy Unit has recently published a 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*
2. *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*
3. *The Scottish Office (1999) Towards a Healthier Scotland. HMSO: Edinburgh.*
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, 2004, Great Britain

Maximum daily alcohol consumption	All ages	16-24	25-44	45-64	65 & over
	%	%	%	%	%
MEN					
Drank nothing last week	27	35	24	24	32
Up to 4 units	34	18	28	39	49
5-8 units	16	15	17	19	13
More than 8 units	22	32	31	18	7
% exceeding 4 units	***39***	***47***	***48***	***37***	***20***
Weighted base (000's)	*19,530*	*2,548*	*6,956*	*6,313*	*3,713*
Unweighted sample	*6,859*	*784*	*2,377*	*2,282*	*1,416*
WOMEN					
Drank nothing last week	42	40	38	38	55
Up to 3 units	36	21	33	42	40
4-6 units	13	15	16	15	4
More than 6 units	9	24	13	6	1
% exceeding 3 units	***22***	***39***	***28***	***20***	***5***
Weighted base (000's)	*22,334*	*2,747*	*7,851*	*6,893*	*4,842*
Unweighted sample	*8,008*	*909*	*2,844*	*2,593*	*1,662*

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 (2005) Results from the 2004 General Household Survey (www.ons.gov.uk/ghs)

Fig 7.2a *Percentage exceeding daily benchmarks for alcohol consumption by age, men, 2004, Great Britain*

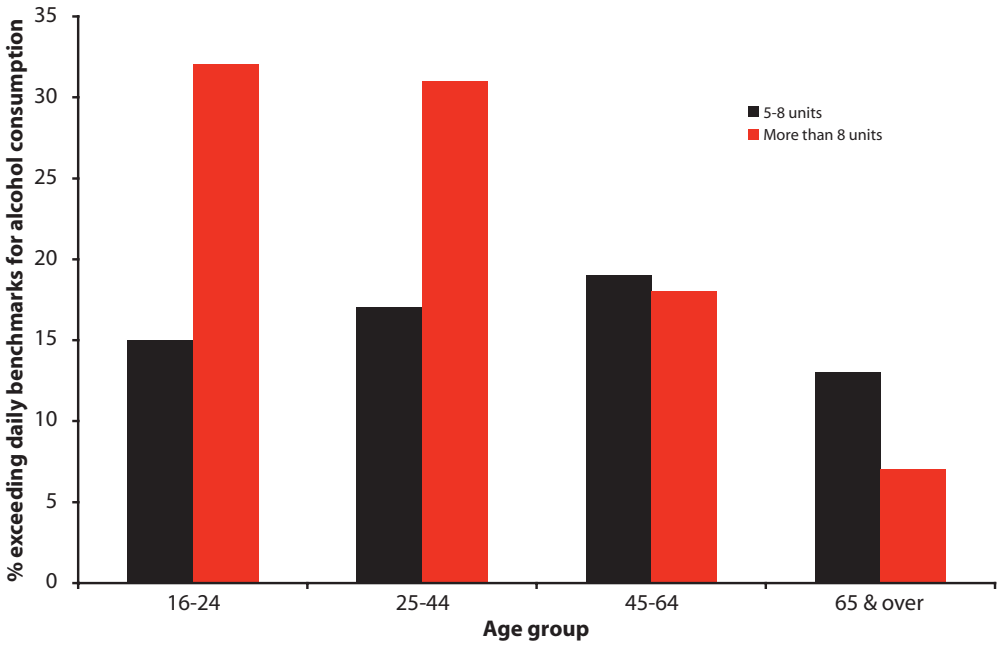


Fig 7.2b *Percentage exceeding daily benchmarks for alcohol consumption by age, women, 2004, Great Britain*

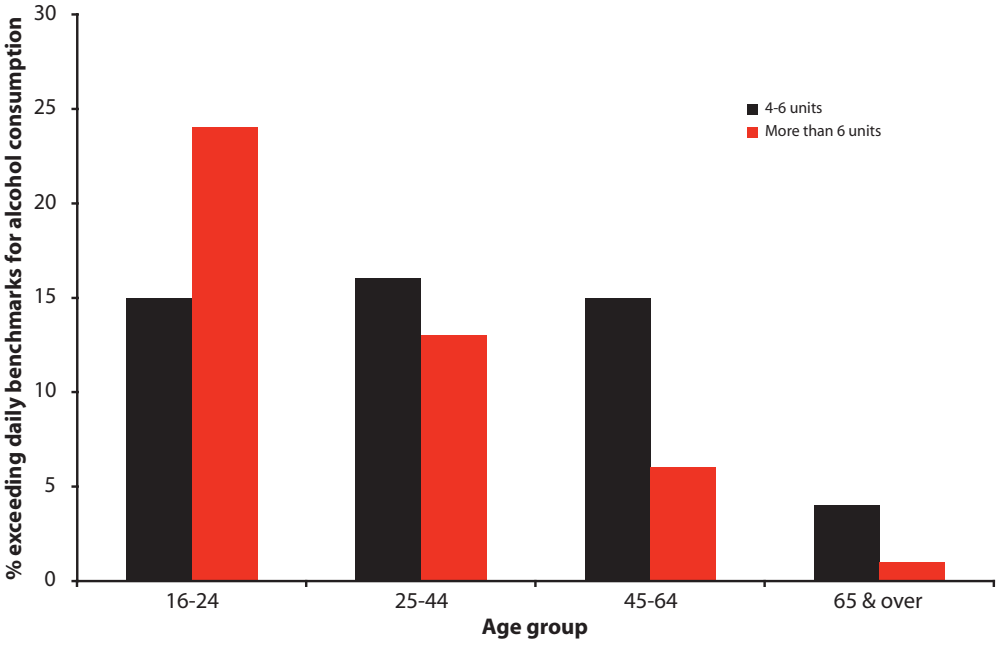


Table 7.3 Percentage of adults consuming more alcohol than the recommended daily maximum by sex and age, 1998 - 2004, Great Britain

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

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

Table 7.4 Weekly alcohol consumption by sex and age, 1988 - 2002, Great Britain

Weekly alcohol consumption	Unweighted data 1988	1992	1994	1996	1998	Weighted data 1998	2000	2001	2002	Weighted base 2002 (000's)	Unweighted sample 2002
	%	%	%	%	%	%	%	%	%		
MEN											
More than 21 units											
16-24	31	32	29	35	36	38	41	40	37	*2,471*	*767*
25-44	34	31	30	30	27	28	30	30	29	*7,160*	*2,365*
45-64	24	25	27	26	30	30	28	26	28	*6,243*	*2,296*
65 and over	13	15	17	18	16	16	17	15	15	*3,662*	*1,399*
% exceeding 21 units per week	*26*	*26*	*27*	*27*	*27*	*28*	*29*	*28*	*27*	*19,536*	*6,827*
More than 50 units											
16-24	10	9	9	10	13	14	14	15	12	*2,471*	*767*
25-44	9	8	7	6	6	6	7	7	8	*7,160*	*2,365*
45-64	6	6	6	5	6	6	7	7	8	*6,243*	*2,296*
65 and over	2	2	3	3	3	3	3	2	3	*3,662*	*1,399*
% exceeding 50 units per week	*7*	*6*	*6*	*6*	*6*	*7*	*7*	*7*	*7*	*19,536*	*6,827*
WOMEN											
More than14 units											
16-24	15	17	19	22	25	25	33	32	33	2,708	*897*
25-44	14	14	15	16	16	16	19	17	19	7,988	*2,782*
45-64	9	11	12	13	16	15	14	14	14	6,700	*2,571*
65 and over	4	5	7	7	6	6	7	6	7	4,824	*1,694*
% exceeding 14 units per week	*10*	*11*	*13*	*14*	*15*	*15*	*17*	*15*	*17*	*22,220*	*7,944*
More than 35 units											
16-24	3	4	4	5	6	7	9	10	10	2,708	*897*
25-44	2	2	2	2	2	2	3	3	3	7,988	*2,782*
45-64	1	1	2	2	2	2	2	2	2	6,700	*2,571*
65 and over	0	0	1	1	1	1	1	1	1	4,824	*1,694*
% exceeding 35 units per week	*2*	*2*	*2*	*2*	*2*	*2*	*3*	*3*	*3*	*22,220*	*7,944*

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

Fig 7.4 Percentage consuming more alcohol than the recommended weekly maximum (21 units for men and 14 units for women), and percentage of weekly heavy drinkers (over 50 units for men and 35 units for women) by sex, 1988-2002, Great Britain

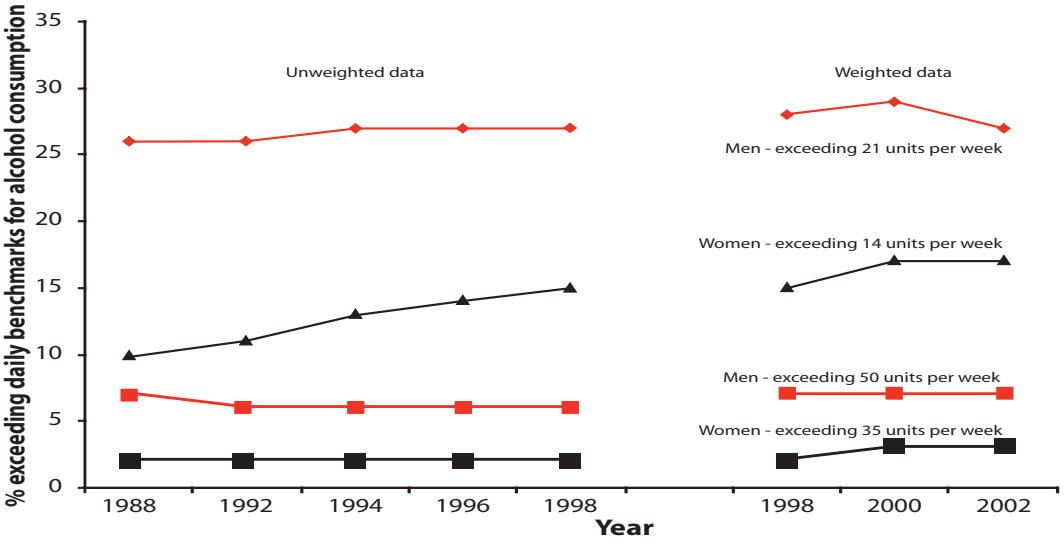


Table 7.5 Alcohol consumption by sex, country of Great Britain and Government Office Region in England, 2004, Great Britain

		Drinking last week						
MEN		**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**	**% drinking more than the recommended daily maximum**	*Weighted base (000's)*	*Unweighted sample*
North East	%	76	20	19	29	**48**	*888*	*310*
North West	%	78	22	18	28	**46**	*2,194*	*789*
Yorkshire and the Humber	%	79	25	17	30	**47**	*1,730*	*622*
East Midlands	%	75	24	16	23	**39**	*1,618*	*583*
West Midlands	%	74	22	17	22	**39**	*1,640*	*587*
East of England	%	74	26	17	18	**35**	*1,837*	*664*
London	%	61	18	14	18	**32**	*2,374*	*688*
South East	%	76	26	16	20	**36**	*2,813*	*1,004*
South West	%	78	28	16	21	**37**	*1,721*	*626*
England	%	74	24	17	22	**39**	*16,818*	*5,873*
Wales	%	70	18	15	21	**36**	*990*	*339*
Scotland	%	66	17	16	23	**39**	*1,730*	*650*
Great Britain	%	73	23	17	22	**39**	*19,538*	*6,862*

WOMEN		**Drank last week**	**Drank on 5 or more days last week**	**Drank 4 to 6 units on at least one day**	**Drank more than 6 units on at least one day**	**% drinking more than the recommended daily maximum**	*Weighted base (000's)*	*Unweighted sample*
North East	%	60	13	14	11	**25**	*1,015*	*364*
North West	%	62	12	14	14	**28**	*2,531*	*930*
Yorkshire and the Humber	%	66	15	17	15	**32**	*2,018*	*731*
East Midlands	%	62	13	15	11	**26**	*1,756*	*647*
West Midlands	%	56	13	12	7	**19**	*1,966*	*712*
East of England	%	55	14	9	6	**15**	*2,107*	*777*
London	%	46	9	9	6	**15**	*2,730*	*826*
South East	%	62	16	13	9	**22**	*3,099*	*1,129*
South West	%	63	16	15	9	**24**	*1,875*	*699*
England	%	59	13	12	10	**22**	*19,097*	*6,815*
Wales	%	56	9	12	8	**20**	*1,151*	*392*
Scotland	%	52	9	12	9	**21**	*2,095*	*805*
Great Britain	%	58	13	13	9	**22**	*22,343*	*8,012*

Adults aged 16 and over.

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. The weighted base is the base for percentages.

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

Fig 7.5a *Percentage of men consuming more alcohol than the recommended daily maximum (four units) by region, 2004, Great Britain*

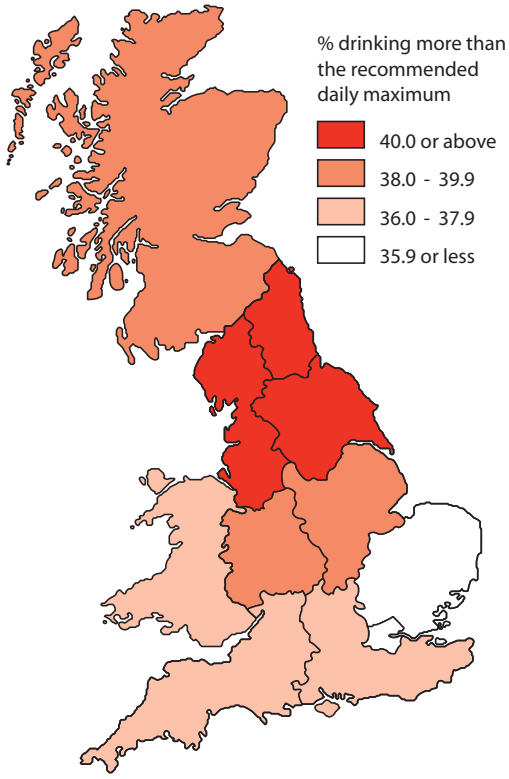


Fig 7.5b *Percentage of women consuming more alcohol than the recommended daily maximum (three units) by region, 2004, Great Britain*

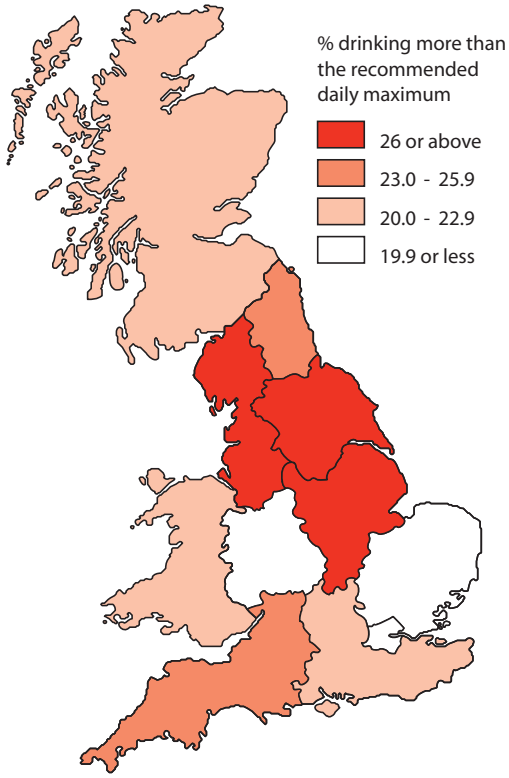


Fig 7.5c *Percentage of men exceeding daily benchmark for heavy drinking (eight units) by region, 2004, Great Britain*

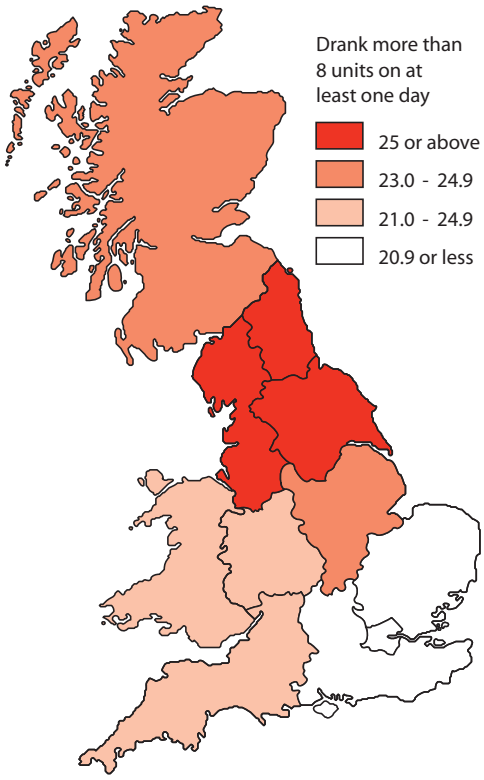


Fig 7.5d *Percentage of women exceeding daily benchmark for heavy drinking (six units) by region, 2004, Great Britain*

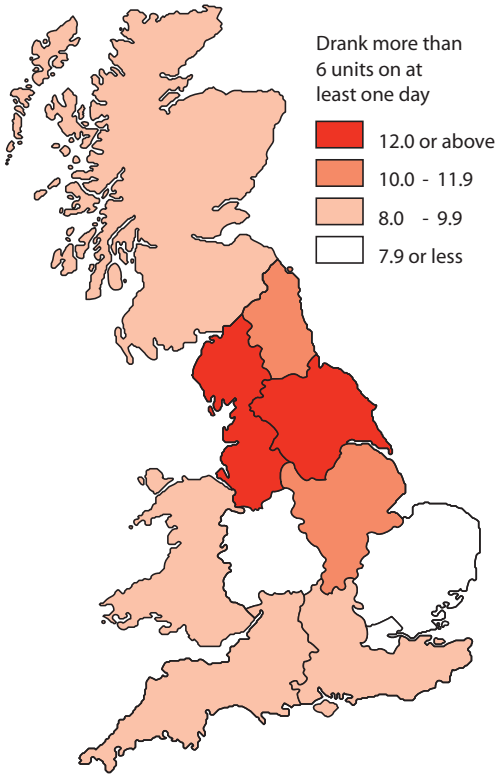


Table 7.6 Alcohol consumption by sex and socio-economic classification, 2004, Great Britain

Drinking last week

MEN		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	% drinking more than the recommended daily maximum	*Weighted base (000's)*	*Unweighted sample*
Managerial and professional	%	80	28	18	22	40	*7,690*	*2,816*
Large employers and higher managerial	%	85	32	19	24	43	*1,251*	*471*
Higher professional	%	80	27	18	18	36	*1,759*	*639*
Lower managerial and professional	%	78	28	16	24	40	*4,680*	*1,706*
Intermediate	%	74	21	17	23	40	*3,538*	*1,221*
Intermediate	%	75	19	20	24	44	*1,415*	*482*
Small employers and own account	%	74	22	16	22	38	*2,123*	*739*
Routine and manual	%	68	19	16	22	38	*7,311*	*2,526*
Lower supervisory and technical	%	72	21	16	23	39	*2,384*	*831*
Semi routine	%	65	18	14	22	36	*2,344*	*808*
Routine	%	66	19	17	21	38	*2,583*	*887*
*Total**	%	*73*	*23*	*17*	*22*	*39*	*18,978*	*6,702*

WOMEN		Drank last week	Drank on 5 or more days last week	Drank 4 to 6 units on at least one day	Drank more than 6 units on at least one day	% drinking more than the recommended daily maximum		
Managerial and professional	%	66	16	15	9	24	*8,408*	*3,137*
Large employers and higher managerial	%	73	21	18	10	28	*1,271*	*488*
Higher professional	%	67	17	16	8	24	*1,641*	*618*
Lower managerial and professional	%	65	15	15	9	24	*5,496*	*2,031*
Intermediate	%	59	14	12	9	21	*4,111*	*1,450*
Intermediate	%	61	12	13	9	22	*2,266*	*793*
Small employers and own account	%	58	15	11	8	19	*1,845*	*657*
Routine and manual	%	50	10	11	9	20	*8,507*	*2,996*
Lower supervisory and technical	%	56	10	14	9	23	*2,378*	*843*
Semi routine	%	49	9	9	10	19	*3,209*	*1,128*
Routine	%	47	9	11	8	19	*2,920*	*1,025*
*Total**	%	*58*	*13*	*13*	*9*	*22*	*21,687*	*7,802*

Adults aged 16 and over.

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. The weighted base is the base for percentages.

** 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 (2005) Results from the 2004 General Household Survey (www.ons.gov.uk/ghs).

Table 7.7 Alcohol consumption by sex and ethnic group, 2004, England

Maximum daily alcohol consumption	General population %	Black Caribbean %	Black African %	Indian %	Chinese %	Irish %
MEN						
Under 2 units	17	20	21	23	29	12
Up to 4 units	41	54	56	52	60	29
5-8 units	26	27	26	28	19	31
More than 8 units	33	20	19	20	21	40
% exceeding 4 units	***60***	***47***	***44***	***48***	***40***	***71***
Unweighted base	*2,159*	*238*	*125*	*242*	*161*	*373*
WOMEN						
Under 2 units	30	37	43	38	46	28
Up to 3 units	52	61	72	64	63	47
4-6 units	27	26	22	17	23	29
More than 6 units	22	13	4	17	14	23
% exceeding 3 units	***48***	***40***	***25***	***34***	***37***	***53***
Unweighted base	*2,273*	*272*	*104*	*126*	*113*	*409*

Adults aged 16 and over. Bases for Pakistani and Bangladeshi are too small to provide reliable estimates.
Age-standardised percentages (standardised risk ratios x percentage in general population).

Source: Department of Health (2005) Health Survey for England 2004. See www.ic.nhs.uk/pubs/hlthsvyeng2004upd

Fig 7.7a *Alcohol consumption by ethnic group, men, 2004, England*

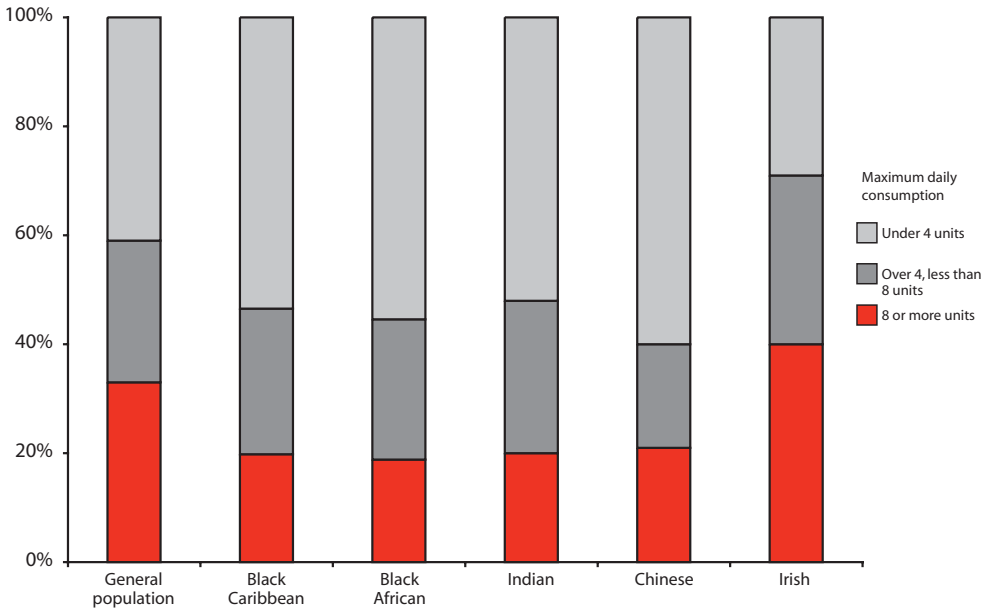


Fig 7.7b *Alcohol consumption by ethnic group, women, 2004, England*

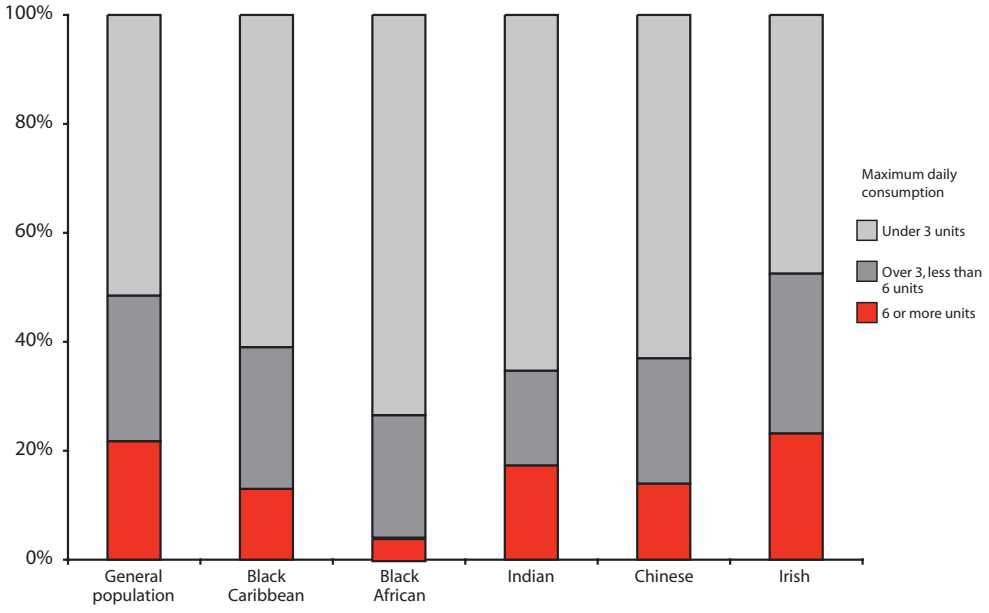


Table 7.8 Alcohol consumption by country, adults aged 15 years and above, 1970-2002, Europe

Litres pure alcohol per person per year

	1970	1972	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998	1999	2000	2001	2002
Albania	1.8	1.6	1.6	1.3	1.7	1.5	1.5	1.6	1.4	1.7	2.0	1.3	2.7	3.4	1.5	2.0	1.8	2.5	2.0
Armenia												2.4	3.8	2.4	1.6	1.6	1.5	1.2	1.0
Austria	13.9	15.6	15.0	14.4	13.5	13.8	13.9	13.8	13.8	13.9	14.2	13.8	13.5	13.3	12.8	12.8	12.9	12.6	10.4
Azerbaijan												4.9	1.4	2.7	0.9	4.8	7.9	6.9	5.1
Belarus						13.2	12.7	12.7	7.6	4.6	7.9	8.5	9.4	10.2	9.8	9.7	8.4	8.1	4.9
Belgium	12.6	13.2	13.6	13.8	13.6	14.3	14.0	13.5	13.0	12.5	12.5	11.9	11.4	11.2	10.1	10.2	10.2	10.1	8.9
Bosnia and Herzegovina												10.0	8.3	10.9	12.4	13.6	8.1	8.6	9.9
Bulgaria	8.7	9.5	10.6	11.2	11.6	11.1	11.5	11.7	11.8	11.5	11.8	10.4	10.1	9.6	8.3	8.2	7.8	7.1	5.4
Croatia												11.6	11.8	11.2	13.8	12.0	12.4	12.7	11.0
Cyprus	4.8	5.3	4.1	4.8	5.7	6.3	7.0	7.6	8.4	9.7	9.5	8.2	9.6	8.8	9.2	9.6	10.0	10.7	9.1
Czech Republic	14.1	14.7	14.9	15.5	15.8	16.0	16.6	15.9	15.1	14.8	16.3	16.5	15.9	16.1	16.4	16.5	16.3	16.2	13.4
Denmark	9.7	10.2	10.8	12.0	11.1	11.9	12.6	12.6	12.5	12.3	12.3	12.2	12.5	12.6	12.0	11.9	12.0	11.9	9.8
Estonia												7.7	8.0	6.4	8.6	8.0	9.0	9.9	7.7
Finland	6.0	7.0	8.5	8.2	8.0	8.1	8.0	8.3	8.7	9.3	9.9	9.5	8.8	9.2	9.8	10.0	10.0	10.4	9.0
France	23.2	22.6	22.5	22.2	21.1	20.1	19.4	17.9	17.1	16.8	16.7	15.5	14.9	14.5	14.0	13.8	13.4	13.5	10.9
Georgia												6.6	5.1	6.7	4.0	4.4	3.5	2.4	1.7
Germany											14.9	15.1	14.3	13.7	13.2	13.2	13.0	12.9	11.0
Greece				10.9	11.5	13.2	11.5	12.2	9.2	10.5	10.7	10.4	10.9	10.1	9.5	9.9	9.4	9.3	7.8
Hungary	12.9	13.2	13.3	15.2	16.5	17.0	16.7	16.8	16.6	15.3	16.1	14.8	13.8	12.7	12.6	12.0	11.9	11.9	11.3
Iceland	4.6	5.1	5.3	4.8	4.9	5.1	5.1	5.5	5.6	5.7	5.2	4.7	4.6	4.9	5.5	5.5	5.5	5.7	5.1
Ireland	7.0	7.7	9.3	9.0	9.8	9.6	8.8	9.6	9.6	9.9	11.2	11.4	11.2	12.2	13.2	13.8	14.2	14.5	-
Israel	4.3	4.7	4.5	4.7	3.3	2.8	2.5	2.5	2.3	2.2	1.8	1.8	1.7	1.6	2.1	2.0	2.1	2.0	1.6
Italy	21.2	21.0	21.1	18.9	17.7	17.9	15.6	15.0	13.2	12.2	11.7	11.4	10.8	9.9	9.6	9.4	9.3	9.1	7.9
Kazakhstan												10.7	8.5	2.9	3.6	3.2	3.3	2.9	2.6
Kyrgyzstan									3.4	3.5	4.5	2.4	3.1	3.3	3.6	3.6	3.6	5.5	-
Latvia						12.9	12.4	12.3	7.8	6.4	7.1	7.1	10.1	8.7	8.9	9.6	9.4	9.3	8.0
Lithuania								13.0	8.0	7.1	6.5	5.5	-	11.8	10.8	11.3	12.2	12.3	10.0
Luxembourg	16.0	16.5	18.0	17.6	16.0	16.3	16.5	18.4	17.2	17.3	17.6	17.9	17.8	16.9	18.9	18.4	18.6	17.5	14.1
Malta										7.1	7.0	7.0	7.0	7.1	6.6	6.7	7.0	6.7	5.3
Netherlands	7.6	8.9	10.5	10.7	11.4	11.7	10.6	10.4	10.3	9.9	9.9	10.2	9.7	9.9	9.9	9.9	9.8	9.7	7.9
Norway	4.9	5.4	5.8	5.9	5.5	6.2	5.1	5.2	5.5	5.6	5.4	5.1	5.2	5.4	5.6	5.8	5.9	5.8	4.7
Poland	7.4	8.6	8.7	10.7	10.9	11.5	8.5	8.7	9.6	9.5	8.3	8.4	8.4	8.1	8.5	8.6	8.5	8.7	6.6
Portugal	14.4	16.9	19.6	19.5	14.2	14.9	16.1	16.5	14.7	13.5	15.9	15.2	14.7	13.9	13.3	13.0	12.8	12.5	9.5
Republic of Moldova												10.1	16.3	16.4	17.0	19.2	14.0	13.9	10.0
Romania	8.6	9.0	10.3	11.7	12.5	12.4	12.8	12.8	11.8	10.3	9.0	8.9	8.0	8.2	7.3	7.7	7.5	7.6	6.2
Russian Federation						13.4		13.4	6.7	5.7	7.1	6.6	8.7	9.3	10.0	10.9	10.8	10.6	8.7
Serbia and Montenegro												8.2	9.9	11.4	9.0	7.5	9.3	9.0	6.8
Slovakia	12.9	13.9	13.7	13.9	13.9	15.2	15.4	14.6	13.5	13.0	13.7	12.8	13.2	13.0	12.3	12.6	12.4	12.4	9.8
Slovenia							19.5	17.2	18.1	15.0	13.8	13.4	13.2	11.9	8.3	7.9	11.6	6.6	10.0
Spain	16.1	17.3	19.5	18.9	19.2	18.6	17.0	15.1	15.0	14.0	13.4	12.5	11.6	11.1	11.9	11.8	11.9	12.3	9.6
Sweden	7.9	8.1	8.6	8.9	8.2	7.8	7.4	7.0	7.3	7.4	7.5	7.6	7.8	7.0	7.0	7.1	7.0	6.9	5.7
Switzerland	14.3	14.6	14.8	13.6	13.8	13.9	14.4	14.0	13.7	13.7	13.5	12.7	12.2	11.8	11.8	11.8	11.9	11.5	9.4
Tajikistan												2.3	1.4	1.8	0.4	0.3	0.3	0.4	0.3
FYR Macedonia						2.6	2.8	6.0	4.2	3.9	4.3	4.8	5.4	4.6	3.5	3.3	4.1	2.4	1.9
Turkey	0.9	1.0	1.0	1.2	1.3	1.3	1.2	1.1	1.1	1.3	1.4	1.4	1.5	1.7	1.7	1.6	1.5	1.5	1.0
Turkmenistan												0.7	1.7	1.3	1.2	1.1	1.1	0.8	0.7
Ukraine												5.5	4.2	3.1	3.6	3.8	4.3	4.0	4.0
United Kingdom	8.5	9.2	10.5	10.9	11.0	10.8	10.0	10.3	10.4	10.8	10.8	10.1	10.2	9.9	9.9	10.3	10.2	10.4	9.1
Uzbekistan												1.3	1.5	0.9	0.9	0.9	1.4	1.5	1.0
Europe average									*11.5*	*10.9*	*11.2*	*10.7*	*10.9*	*10.7*	*10.7*	*10.9*	*10.8*	*10.8*	*8.8*
EU-15 average	*15.4*	*15.8*	*16.6*	*16.2*	*15.6*	*15.4*	*14.4*	*13.8*	*13.1*	*12.8*	*12.7*	*12.1*	*11.7*	*11.2*	*11.1*	*11.1*	*11.0*	*11.1*	*9.6*
EU-25 average																*9.5*	*9.4*	*9.4*	*9.4*

Source: World Health Organization (2006) European Health for All database. http://www.who.dk/hfadb

Fig 7.8 Alcohol consumption by country, adults aged 15 and above, 2002, 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)[1]. 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'[2].

Depression

The Health Survey for England 2003 (HSE) and the Scottish Health Survey for 2003 (SHS) 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 have a high score, compared with 11% of men in England; 17% compared to 13% in Scotland. For England, there is a tendency for men and women over the age of 75 to have higher scores than those in younger age groups (Table and Fig 8.1).

There is no clear relationship between GHQ12 scores and social class but there is an inverse relationship between GHQ12 scores and income: people with low incomes tend to have higher GHQ12 scores. For example, men with the lowest 20% of household incomes are 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 are highest in men and women in the North East. Men living in the north east of England are nearly 50% more likely to have a high GHQ12 score than men living in other parts of the country and women living in the North East, the North West and in London are nearly 25% more likely (Table 8.3).

GHQ12 scores vary by ethnicity in both men and women. Chinese men and women are much less likely to have a high GHQ12 score – just 3% of men and 7% women compared to 15% men and 19% of men in the general population. The highest GHQ12 scores (and hence the highest levels of psychological distress) are found in the Bangladeshi followed by the Pakistani

communities: around one in three Bangladeshi adults (28% men and 30% women) have 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 report a severe lack of social support. There is 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 are more than twice as likely to report a severe lack of social support as those in the managerial and professional group (Table and Fig 8.6). Furthermore those with higher incomes are 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 South Asian and Chinese origin are more likely to report a severe lack of social support. South Asian and Chinese adults are well over twice as likely to perceive a severe lack of social support, with around two-fifths of Chinese (41%) and Bangladeshi (37%) men, and one third of Indian (34%) and Chinese (33%) women experiencing little social support (Table 8.8 and Fig 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[1].

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 16-24 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. 16-24 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 Fig 8.10).

It should be noted that these data are now over 10 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, 2003, England and Scotland

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
GHQ12 score	%	%	%	%	%	%	%	%
ENGLAND								
MEN								
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
Base (unweighted)	*6,110*	*693*	*954*	*1,192*	*1,029*	*1,031*	*743*	*468*
Base (weighted)	*6,650*	*970*	*1,176*	*1,334*	*1,103*	*973*	*670*	*425*
WOMEN								
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
Base (unweighted)	*7,704*	*847*	*1,211*	*1,555*	*1,226*	*1,242*	*860*	*763*
Base (weighted)	*7,144*	*982*	*1,210*	*1,384*	*1,150*	*1,018*	*737*	*663*
SCOTLAND								
MEN								
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
Base (unweighted)	*3,380*	*318*	*425*	*697*	*584*	*594*	*470*	*292*
Base (weighted)	*3,614*	*553*	*567*	*718*	*637*	*533*	*376*	*232*
WOMEN								
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
Base (unweighted)	*4,285*	*391*	*582*	*853*	*763*	*737*	*527*	*432*
Base (weighted)	*4,057*	*547*	*640*	*782*	*664*	*570*	*447*	*408*

Adults aged 16 and over.

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.

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

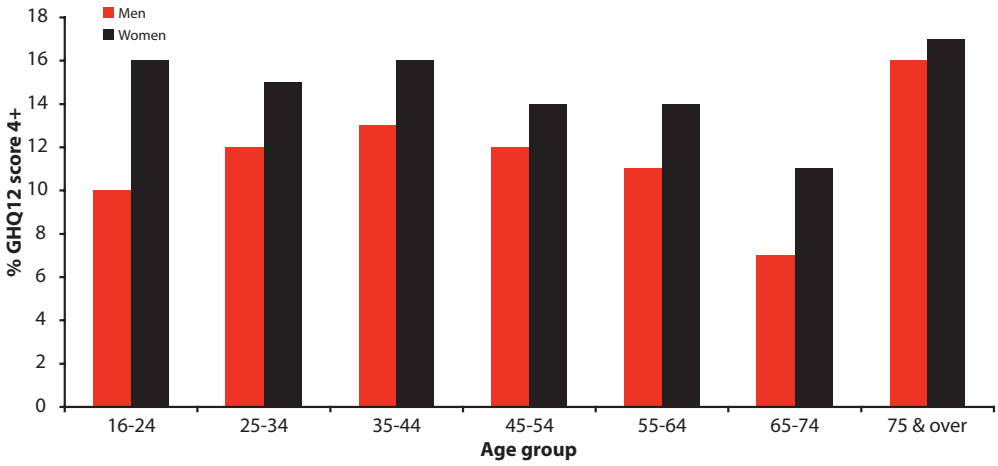


Fig 8.1b *High GHQ12 score (4+) by sex and age, 2003, Scotland*

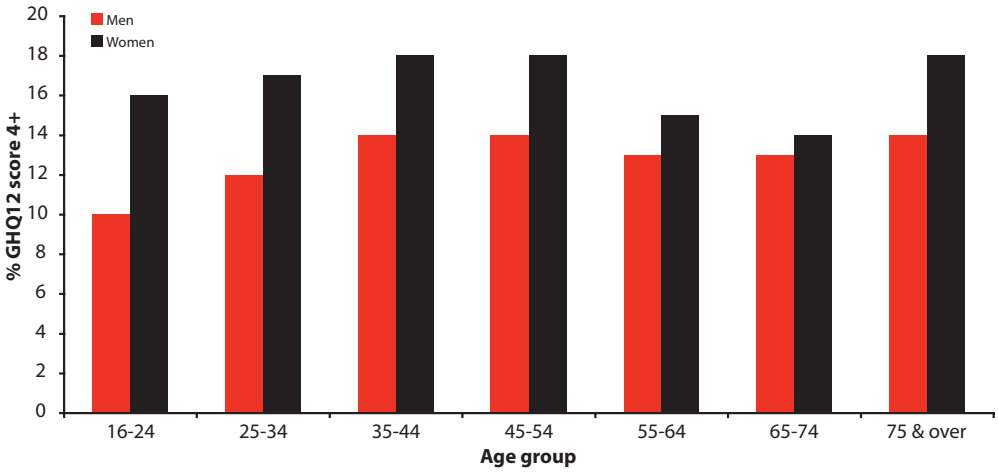


Table 8.2 GHQ12 score by sex and household income, 2003, England and Scotland

	Equivalised household income quintile				
	Lowest	2nd	3rd	4th	Highest
GHQ12 score	%	%	%	%	%
ENGLAND					
MEN					
0	54	63	67	71	68
1-3	23	23	23	22	24
4 or more	23	14	10	7	8
Base (weighted)	*928*	*895*	*1,209*	*1,372*	*1,345*
WOMEN					
0	54	57	62	63	62
1-3	27	26	24	23	27
4 or more	19	17	15	13	11
Base (weighted)	*1,169*	*1,064*	*1,365*	*1,336*	*1,144*
SCOTLAND					
MEN					
0	55	62	68	72	73
1-3	21	23	17	20	18
4 or more	24	15	15	8	9
Base (weighted)	*475*	*590*	*591*	*665*	*813*
WOMEN					
0	49	59	61	65	62
1-3	26	21	22	22	27
4 or more	24	20	16	13	11
Base (weighted)	*625*	*789*	*685*	*658*	*750*

Adults aged 16 and over.

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

Sources: *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

	Government Office Region								
	North East	North West	Yorkshire & the Humber	East Midlands	West Midlands	East England	London	South East	South West
GHQ12 score	%	%	%	%	%	%	%	%	%
MEN									
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
Base (weighted)	*344*	*861*	*669*	*596*	*699*	*775*	*938*	*1,101*	*667*
WOMEN									
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
Base (weighted)	*393*	*947*	*732*	*627*	*753*	*792*	*980*	*1,177*	*742*

Adults aged 16 and over.

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, 1999, England

	General population	Black Caribbean	Indian	Pakistani	Bangladeshi	Chinese	Irish
	%	%	%	%	%	%	%
MEN	15	16	16	20	28	3	19
Base	*3,389*	*492*	*565*	*488*	*402*	*264*	*515*
WOMEN	19	23	24	30	30	7	21
Base	*4,052*	*686*	*546*	*464*	*424*	*328*	*684*

Adults aged 16 and over.

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

Source: Department of Health (2001) Health Survey for England. The Health of Minority Ethnic Groups 1999. The Stationery Office: London.

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

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
Perceived social support	%	%	%	%	%	%	%	%
MEN								
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
Base	*6,674*	*972*	*1,184*	*1,333*	*1,109*	*976*	*676*	*425*
WOMEN								
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
Base	*7,184*	*984*	*1,214*	*1,389*	*1,158*	*1,023*	*744*	*672*

Adults aged 16 and over.

Data are weighted for non response. The weighted base is the base for percentages.

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

Table 8.6 Perceived social support 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
Perceived social support	%	%	%	%	%
MEN					
No lack	64	58	50	49	45
Some lack	25	25	33	31	30
Severe lack	11	17	18	19	26
Base	*2,806*	*469*	*764*	*902*	*1,628*
WOMEN					
No lack	73	68	67	67	57
Some lack	21	22	23	21	28
Severe lack	7	10	10	11	15
Base	*2,792*	*681*	*706*	*831*	*1,995*

Adults aged 16 and over.

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.

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.

Fig 8.6 Percentage perceiving severe lack of social support by sex and socio-economic classification, 2003, England

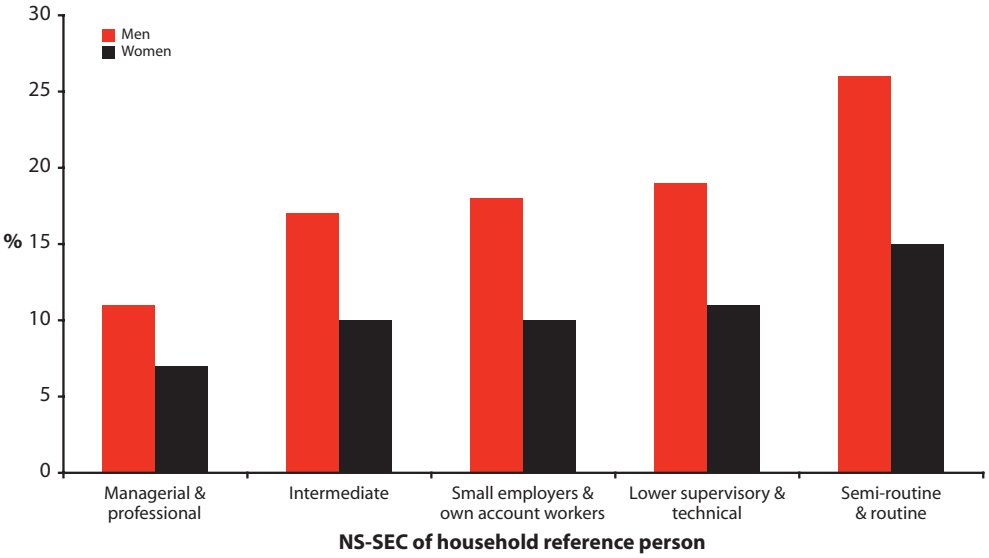


Table 8.7 Perceived social support by sex and household income, 2003, England

	Equivalised household income quintile				
Perceived social support	Lowest %	2nd %	3rd %	4th %	Highest %
MEN					
No lack	40	51	53	60	69
Some lack	29	26	30	28	23
Severe lack	31	23	17	12	9
Base (weighted)	*936*	*895*	*1,221*	*1,369*	*1,351*
WOMEN					
No lack	57	60	67	71	76
Some lack	26	25	24	23	18
Severe lack	17	15	10	6	6
Base (weighted)	*1,184*	*1,068*	*1,378*	*1,339*	*1,150*

Adults aged 16 and over.

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 of adults perceiving severe lack of social support by sex and ethnic group, 1999, England

	General population	Black Caribbean	Indian	Pakistani	Bangladeshi	Chinese	Irish
	%	%	%	%	%	%	%
MEN	16	20	34	32	37	41	13
Base	*3,404*	*500*	*569*	*500*	*418*	*281*	*512*
WOMEN	11	15	34	25	28	33	9
Base	*4,088*	*695*	*561*	*472*	*456*	*341*	*688*

Adults aged 16 and over.

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

Source: Department of Health (2001) Health Survey for England. The Health of Minority Ethnic Groups 1999. The Stationery Office: London.

Fig 8.8 *Percentage of adults perceiving severe lack of social support by sex and ethnic group, 1999, England*

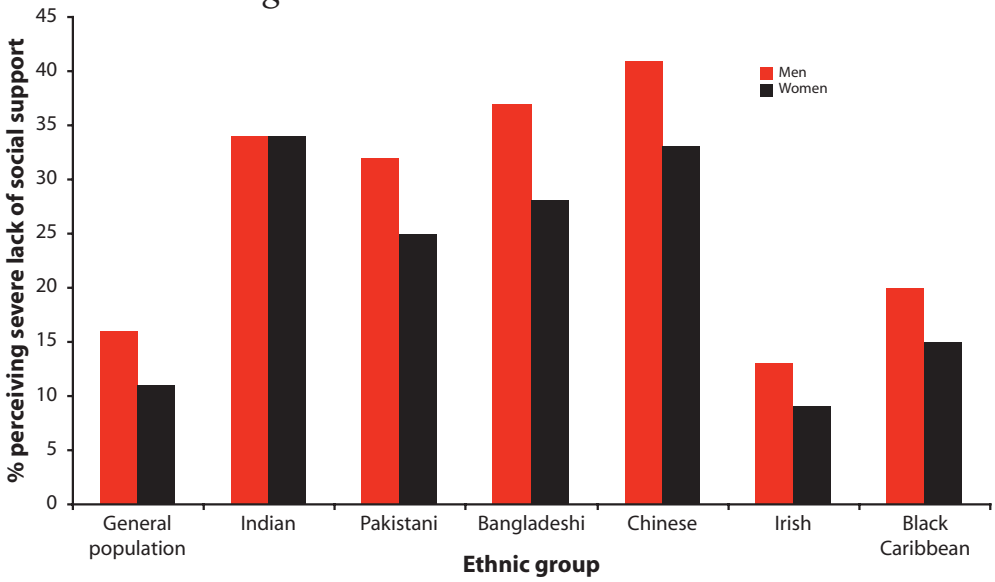


Table 8.9 *Amount of control over work, amount of variety in work and pace of work among adults in paid employment, by sex and age, 1994, England*

	All ages %	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65 & over %
MEN							
Amount of control over work							
Low	19	37	19	14	15	18	19
Medium	37	44	41	35	32	37	27
High	44	19	41	51	53	45	54
Amount of variety at work							
Low	33	42	29	30	29	39	55
Medium	40	36	41	40	42	41	36
High	27	22	30	30	29	20	9
Pace of work							
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*	*520*	*87*
WOMEN							
Amount of control over work							
Low	31	41	29	28	30	32	25
Medium	40	41	39	40	41	40	36
High	29	18	32	33	29	28	39
Amount of variety at work							
Low	50	54	46	48	52	61	60
Medium	35	36	36	37	33	27	22
High	15	10	18	15	15	12	17
Pace of work							
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*	*596*	*1,089*	*1,075*	*882*	*372*	*58*

Adults aged 16 and over.

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, 1994, England

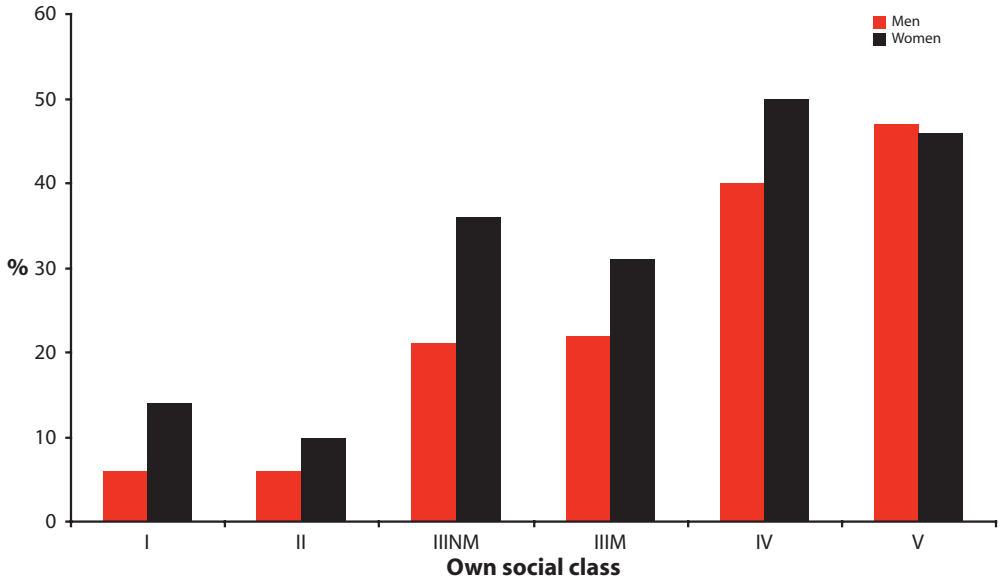
		Own social class					
	Total	I	II	IIINM	IIIM	IV	V
	%	%	%	%	%	%	%
MEN							
Low control over work	20	6	6	21	22	40	47
Low variety at work	33	9	18	35	35	62	66
High pace of work	32	40	40	30	27	24	26
Base	*4,432*	*399*	*1,295*	*498*	*1,371*	*539*	*179*
WOMEN							
Low control over work	31	14	10	36	31	50	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*	*665*	*240*

Adults aged 16 and over.

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.

Fig 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 40-69 years, each 20mmHg increase in usual systolic blood pressure, or 10mmHg increase in usual diastolic blood pressure, doubles the risk of death from CHD[1]. 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 80-89 years (Table 9.1 and Fig 9.1).

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)[2].

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

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 <120/<80mmHg[4].

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.

Overall levels

The mean systolic blood pressure for men in England is 135mmHg, and for women 130mmHg (Table 9.1 and Fig 9.1).

In England 34% of men and 30% of women have hypertension (defined here as a systolic blood pressure of 140mmHg or over, or a diastolic blood pressure of 90mmHg or over) or are being treated for hypertension. Around four-fifths (78%) of men and two-thirds (67%) of women with hypertension are not receiving treatment. Of those that are treated, just under 60% remain hypertensive (Table 9.2).

Age and sex differences

Mean systolic blood pressure increases with age in both men and women, rising from 127mmHg in men aged 16-24 to 145mmHg in men aged 75 and over, and from 119mmHg to 149mmHg in women (Table 9.1).

The prevalence of hypertension increases with age in both sexes. For example, less than two percent of women aged 16-24 are hypertensive, compared to around half aged 55-64 and two-thirds aged 65-74 (Table 9.2 and Fig 9.2).

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 9.1 and Fig 9.1).

Between 1998 and 2003, the prevalence of high blood pressure in England fell slightly in men (from 41% to 38%), and by just one percentage point in women (from 33% to 32%)[5] (Table 9.3).

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[6] (Table 9.4).

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 1998, showed that 15% of people reported being treated for raised blood pressure[7]. 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[8].

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 9.5).

Ethnic differences

The proportion of men with high blood pressure in Bangladeshi men is half that of the general population; in Pakistani and Chinese men the proportion is two thirds that of the general population. Pakistani and Chinese women are half as likely to have high blood pressure than women in the general population (Table 9.6).

The prevalence of untreated hypertension is lower among Pakistani, Bangladeshi and Chinese men and Indian, Pakistani, Bangladeshi and Chinese women than in the general population[9].

International differences

Data from the World Health Organization[10] 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 (139.7mmHg). For women in 2002 the lowest was Denmark (114.8mmHg) and the highest was Georgia (134.6mmHg) (Table 9.7 and Fig 9.7). Mean systolic blood pressure in the UK in 2002 was 132.2mmHg for men and 121.2mmHg 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[11].

Public health targets

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

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. *Yusaf 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 (1999) Welsh Health Survey. 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)*
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 Systolic and diastolic blood pressure, by sex and age, 1993-2003, England

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
MEN								
Mean systolic blood pressure (mmHg)								
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
1999								
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
2003 (weighted)	134	127	130	131	135	139	141	145
Mean diastolic blood pressure (mmHg)								
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
1999								
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
2003 (weighted)	73	64	71	74	77	77	73	70
Bases (2003 unweighted)	*4,108*	*370*	*557*	*806*	*699*	*736*	*577*	*363*
Bases (2003 weighted)	*4,420*	*604*	*731*	*885*	*716*	*662*	*494*	*328*
WOMEN								
Mean systolic blood pressure (mmHg)								
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
1999								
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
2003 (weighted)	129	118	119	122	128	135	143	148
Mean diastolic blood pressure (mmHg)								
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
1999								
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
2003 (weighted)	72	67	70	72	74	75	74	71
Bases (2003 unweighted)	*5,075*	*479*	*715*	*994*	*837*	*889*	*617*	*544*
Bases (2003 weighted)	*4,702*	*598*	*729*	*879*	*741*	*684*	*538*	*533*

Adults aged 16 and above with a valid blood pressure reading and data on medication.

In 2002 the sample of young people was boosted. The column for those aged 16-24 includes all informants from both the core and boost samples. The all ages column excludes those from the boost sample.

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. See Department of Health website: www.dh.gov.uk/assetRoot/04/09/89/15/04098915.xls, Tables 1 and 2.

Fig 9.1 *Mean systolic blood pressure in adults, by sex, 1993-2003, England*

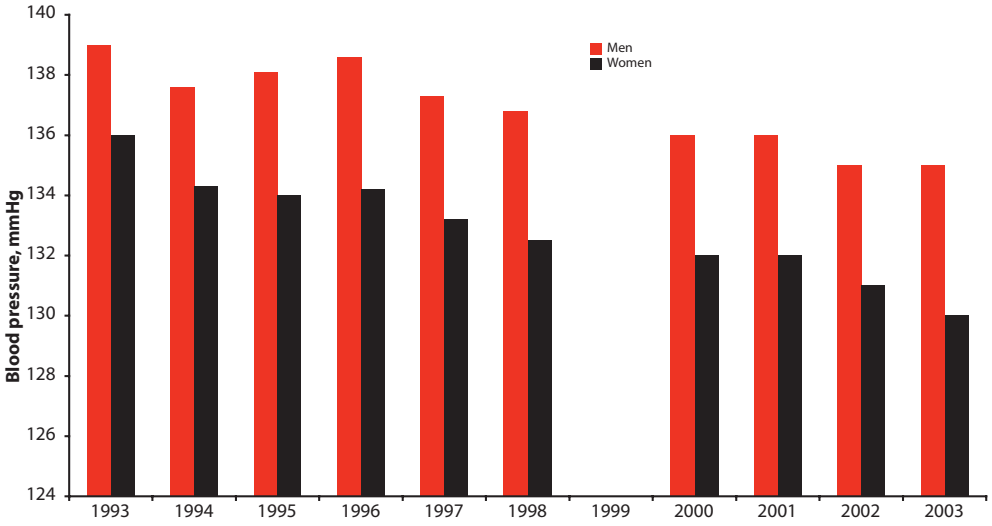


Table 9.2 Blood pressure levels by sex and age, 2003, England

Blood pressure level	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
MEN								
Normotensive untreated	65.7	89.4	86.4	78.7	63.3	46.8	33.4	33.3
Normotensive treated	5.2	-	0.1	1.7	5.9	10.2	14.8	9.8
Hypertensive treated	6.5	-	0.2	1.2	4.1	12.7	18.2	21.5
Hypertensive untreated	22.6	10.6	13.3	18.4	26.7	30.3	33.5	35.4
All with high blood pressure	***34.3***	***10.6***	***13.6***	***21.3***	***36.7***	***53.2***	***66.6***	***66.7***
Base	*4,420*	*604*	*557*	*806*	*699*	*736*	*577*	*363*
WOMEN								
Normotensive untreated	69.9	98.5	95.1	89.6	75.7	51.8	32.7	23.4
Normotensive treated	5.6	0.2	0.2	1.4	4.8	10.7	14.9	10.8
Hypertensive treated	8.1	-	0.5	0.9	2.7	11.2	20.6	30.2
Hypertensive untreated	16.5	1.3	4.2	8.1	16.8	26.4	31.7	35.6
All with high blood pressure	***30.1***	***1.5***	***4.9***	***10.4***	***24.3***	***48.2***	***67.3***	***76.6***
Base	*4,702*	*598*	*715*	*994*	*837*	*889*	*617*	*544*

Adults aged 16 and above with a valid blood pressure reading and data on medication.

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: Department of Health (2004) Health Survey for England 2003. See Department of Health website: http://www.dh.gov.uk/assetRoot/04/09/89/15/04098915.xls, Table 3A.

Fig 9.2 Prevalence of high blood pressure by sex and age, 2003, England

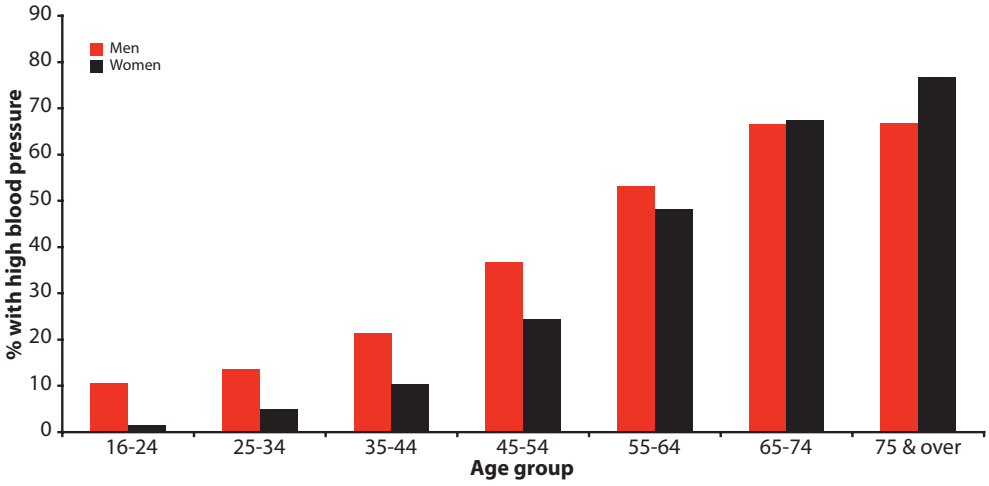


Table 9.3 Prevalence of high blood pressure by sex and age, 1998-2003, England

Blood pressure level	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
MEN								
All with high blood pressure								
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
Bases (2003 unweighted)	*4,108*	*370*	*557*	*806*	*699*	*736*	*577*	*363*
Bases (2003 weighted)	*4,420*	*604*	*731*	*885*	*716*	*662*	*494*	*328*
WOMEN								
All with high blood pressure								
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
Bases (2003 unweighted)	*5,075*	*479*	*715*	*994*	*837*	*889*	*617*	*544*
Bases (2003 weighted)	*4,702*	*598*	*729*	*879*	*741*	*684*	*538*	*533*

Adults aged 16 and above 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. 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. See Department of Health website: http://www.dh.gov.uk/assetRoot/04/09/89/15/04098915.xls, Table 3a.

Table 9.4 Blood pressure levels by sex and age, adults, 2003, Scotland

		Age group						
Blood pressure level	All	16-24	25-34	35-44	45-54	55-64	65-74	75+
	%	%	%	%	%	%	%	%
MEN								
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
All with high blood pressure	***33.0***	***11.9***	***14.8***	***20.8***	***27.1***	***51.4***	***60.4***	***77.0***
Base	*2,032*	*294*	*296*	*403*	*350*	*314*	*226*	*149*
WOMEN								
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
All with high blood pressure	***32.7***	***1.9***	***5.5***	***16.6***	***27.4***	***49.1***	***68.1***	***77.2***
Base	*2,383*	*315*	*348*	*440*	*373*	*340*	*285*	*281*

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 Stationary Office: Edinburgh.

Fig 9.4 Prevalence of high blood pressure by sex and age, 2003, Scotland

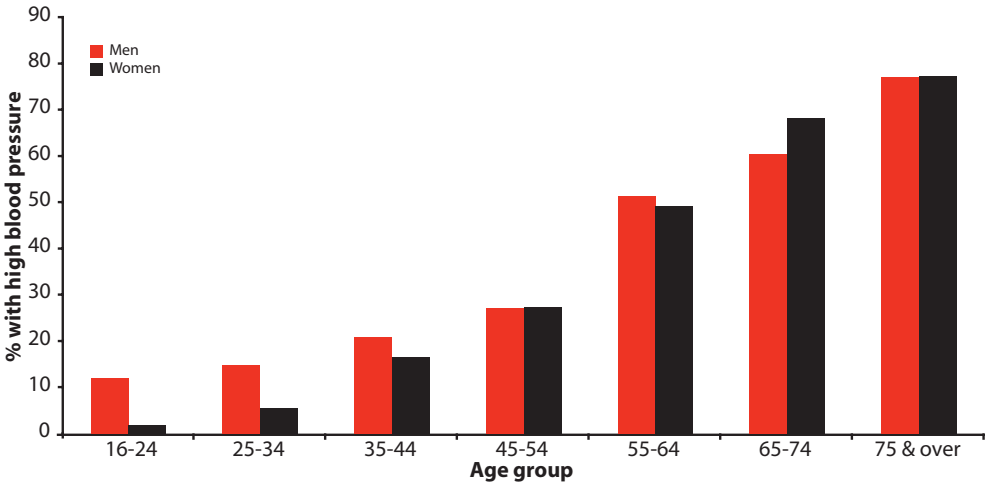


Table 9.5 Blood pressure levels, by sex and socio-economic classification, 2003, England.

	NS-SEC of head of household				
	Managerial & professional	Intermediate	Small employers & own account workers	Lower supervisory & technical	Semi-routine & routine
Blood pressure level	**%**	**%**	**%**	**%**	**%**
MEN					
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
All with high blood pressure	***25.2***	***27.1***	***24.9***	***29.4***	***28.1***
Base	*1,866*	*326*	*497*	*623*	*1,048*
WOMEN					
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
All with high blood pressure	***24.3***	***26.6***	***25.7***	***32.0***	***26.7***
Base	*1,838*	*457*	*483*	*550*	*1,254*

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.

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 9.6 Prevalence of high blood pressure by sex and ethnic group, 2004, England

	General population	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish
High blood pressure	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
MEN	32	38	25	33	20	16	20	36
Base	*4,420*	*169*	*136*	*361*	*159*	*53*	*63*	*667*
WOMEN	29	32	19	18	15	19	16	29
Base	*4,702*	*249*	*183*	*442*	*207*	*83*	*66*	*923*

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

Adults aged 16 and above 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 2003. The Stationery Office: London.

Table 9.7 Mean systolic blood pressure estimates and projections for 2002, 2005 and 2010 by sex, adults aged 15 and above, 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

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)*

Fig 9.7a *Mean systolic blood pressure estimates, men aged 15 and above, all available countries, 2002, Europe*

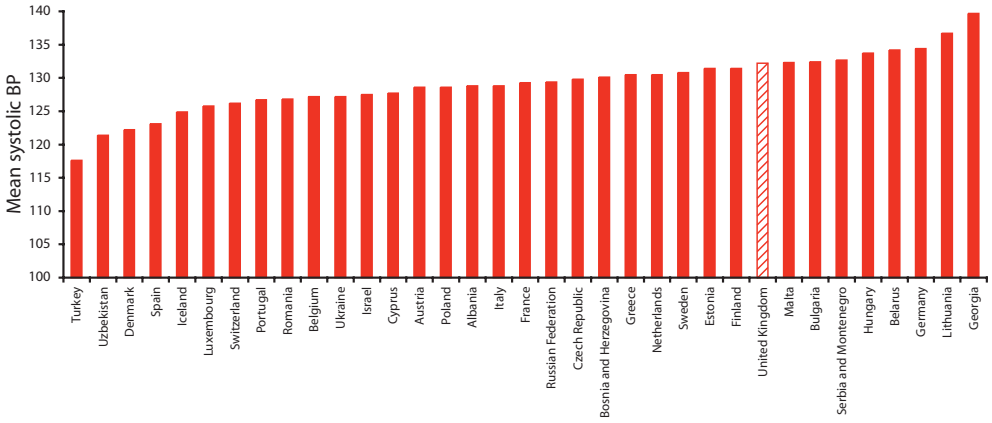
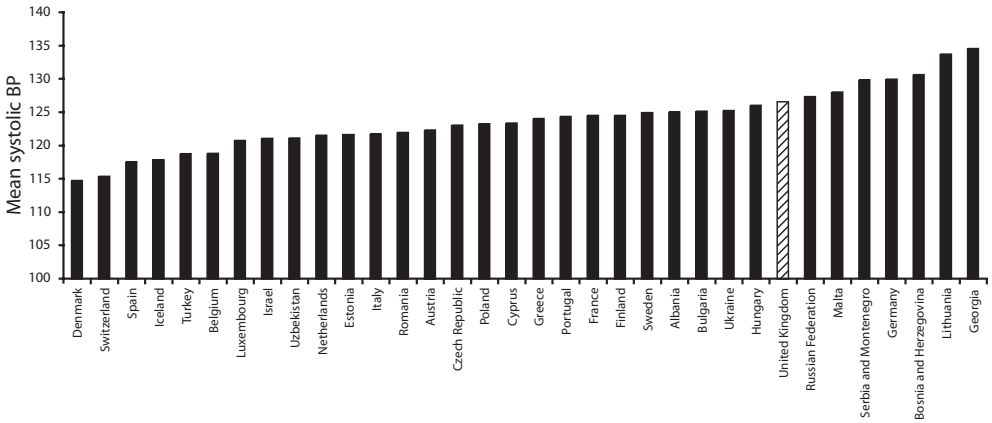


Fig 9.7b *Mean systolic blood pressure estimates, women aged 15 and above, all available countries, 2002, Europe*



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)[1].

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[2].

Different guidelines give slightly different advice for managing high levels of blood cholesterol (hyperlipidaemia). The National Service Framework for CHD includes guidelines on the prevention of coronary heart disease in clinical practice and suggests a cholesterol target of less than 5.0mmol/l for both primary and secondary prevention[3]. More recent guidelines suggest a target for total cholesterol of less than 4.0mmol/l[4,5].

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[6].

Overall levels

The mean blood cholesterol level for men aged 16 and above in England is 5.5mmol/l and for women 5.6mmol/l. About 66% of men and women have blood cholesterol levels of 5.0mmol/l and above (Table 10.1).

The mean HDL-cholesterol level for men aged 16 and above in England is 1.4mmol/l and for women 1.6mmol/l. Overall, about 6% of men and 2% of women have HDL-cholesterol levels of less than 1.0mmol/l (Table 10.2).

Age and sex differences

The prevalence of raised cholesterol increases with age in both men and women. In men the proportion with cholesterol levels of 5.0mmol/l and above increases from 26% in those aged

16-24 to around 80% in those aged 45-64, with a slight decrease in the two oldest age groups. In women cholesterol levels of 5.0mmol/l or above increase from 31% in those aged 16-24 to 84% in those aged 55-64, with, like men, a slight decrease in those over 65 years (Table and Fig 10.1).

The prevalence of low HDL-cholesterol shows smaller age-related variation, with no clear pattern (Table 10.2).

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 10.2).

Temporal trends

Mean total blood cholesterol levels in both men and women fell between 1994 and 1998, but remained stable between 1998 and 2003 (Table 10.3).

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 10.3).

Socio-economic differences

Total blood cholesterol levels show little social class variation in either sex (Table 10.4). However, low HDL-cholesterol levels do vary with income, most notably in women (Table 10.4). Those with higher incomes are less likely to have levels of HDL-cholesterol below 1.0mmol/l (Table 10.5).

Two longitudinal cohort studies in the UK examined socio-economic variations in baseline cholesterol levels. The West of Scotland cohort data (employed men aged 35-64 in 1970-73 from West of Scotland) showed a slight gradient in cholesterol levels, with lower total cholesterol levels in the lower social classes[7]. The Whitehall II study (male and female civil servants aged 35-55 in 1985-88 from London) found a slight gradient with higher total cholesterol levels in the lower social classes[8].

Ethnic differences

Mean total cholesterol and the prevalence of blood cholesterol levels of 5.0mmol/l and above, are marginally lower in all ethnic minority groups than the general population (Table 10.6).

Ethnic variations in the prevalence of low HDL-cholesterol are considerable, with the highest rates for both sexes found in the Pakistani and Bangladeshi communities. Nearly half (45%) of Bangladeshi men have an HDL-cholesterol level of less than 1.0mmol/l compared to 17% of men in the general population. In contrast Black Caribbean men and women have 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 are about 4.5mmol/l for men and women aged

35-64; and only 20% of men aged 35-64 and 19% of women have levels above 5.2mmol/l (Table and Fig 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[9].

Public health targets

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

1. *World Health Organization (2002) The World Health Report 2002. Reducing Risks, Promoting Healthy Life. World Health Organization: Geneva.*
2. *Yusaf 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. *NICE guidelines on Statins for the prevention of cardiovascular event (html version). http:www.nice.org.uk/pdf/TAø94guidance.pdf*
5. *Woods D, Wray R, Poulter N, Williams B, Kirkby M, Patel IV, Durrington P, Reckless J, Davis M, Sivers F, Potter J. JBS2: Joint British Societies' guidelines on prevention of cardiovascular disease in clinical practice. Heart 2005; 91(sup IV): v1-v52.*
6. *See p251: Department of Health (2001) Health Survey for England. The Health of Ethnic Minority Groups 1999. The Stationery Office: London.*
7. *Blane D, Hart C, Davey Smith G. Association of cardiovascular disease risk factors with socioeconomic position during childhood and during adulthood. BMJ, 1996: 313; 1434-8.*
8. *Brunner E, Shipley M, Blane D. When does cardiovascular risk start? Past and present socioeconomic circumstances and risk factors in adulthood. Journal of Epidemiology and Community Health, 1999: 53; 757-64.*
9. *WHO MONICA Project (2003) Monica monograph and multimedia sourcebook. Edited by Hugh Tunstall-Pedoe for the WHO MONICA Project. WHO: Geneva.*

Table 10.1 Total cholesterol by sex and age, 2003, England

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
Total serum cholesterol (mmol/l)	%	%	%	%	%	%	%	%
MEN								
Mean	5.5	4.5	5.3	5.8	5.9	5.8	5.5	5.3
% 5.0 and above	65.9	26.4	59.8	76.9	81.0	79.7	67.4	63.9
Base	*4,020*	*571*	*718*	*789*	*675*	*585*	*401*	*282*
WOMEN								
Mean	5.6	4.6	5.0	5.4	5.8	6.3	6.2	6.1
% 5.0 and above	66.4	30.7	54.9	69.3	79.3	83.7	77.1	74.6
Base	*4,249*	*572*	*717*	*794*	*674*	*603*	*455*	*433*

Adults aged 16 and over.

Data are weighted for non response.

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

Fig 10.1 Percentage of adults with blood cholesterol levels of 5.0 mmol/l and above, 2003, England

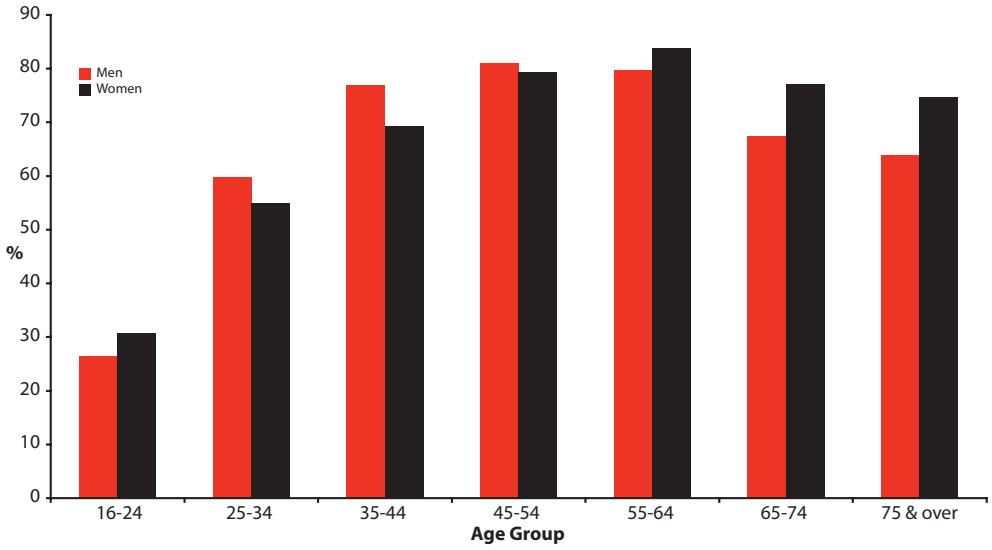


Table 10.2 Low HDL cholesterol by sex and age, 2003, England

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
Total HDL cholesterol (mmol/l)	%	%	%	%	%	%	%	%
MEN								
Mean	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4
% <1.0	6.3	8.5	5.2	5.9	5.4	6.9	7.5	4.6
Base	*4,020*	*571*	*718*	*789*	*675*	*585*	*401*	*282*
WOMEN								
Mean	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.6
% <1.0	1.9	2.4	2.8	3.0	0.9	1.2	1.0	1.8
Base	*4,249*	*572*	*717*	*794*	*674*	*603*	*455*	*433*

Adults aged 16 and over.

Data are weighted for non response.

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

Table 10.3 Total cholesterol levels by sex and age, 1994, 1998 and 2003, England

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
MEN								
Mean total serum cholesterol (mmol/l)								
1994	5.8	4.7	5.3	6.0	6.3	6.2	6.2	5.9
1998	5.5	4.4	5.1	5.5	5.8	5.7	5.5	5.5
2003	5.5	4.5	5.3	5.8	5.9	5.8	5.5	5.3
% 5.0 and above								
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
Bases 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*
WOMEN								
Mean total serum cholesterol (mmol/l)								
1994	6.0	4.9	5.2	5.5	6.1	6.8	7.0	6.8
1998	5.6	4.6	4.9	5.2	5.7	6.2	6.4	6.3
2003	5.6	4.6	5.0	5.4	5.8	6.3	6.2	6.1
% 5.0 and above								
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
Bases 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*

Adults aged 16 and over. Unweighted data in all years.

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

Table 10.4 Total cholesterol 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
Total serum cholesterol (mmol/l)	**%**	**%**	**%**	**%**	**%**
MEN					
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
Base	*1,667*	*283*	*478*	*553*	*991*
WOMEN					
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
Base	*1,627*	*399*	*429*	*493*	*1,165*

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.

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 10.5 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)	**%**	**%**	**%**	**%**	**%**
MEN					
Mean	1.4	1.4	1.4	1.4	1.3
% < 1.0	4.0	6.2	5.9	6.8	9.2
Base	*835*	*846*	*708*	*552*	*564*
WOMEN					
Mean	1.7	1.6	1.6	1.6	1.5
% <1.0	0.5	1.4	2.3	1.3	3.9
Base	*672*	*809*	*806*	*673*	*699*

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.

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 10.6 Total cholesterol by sex and ethnic group, 1999, England

Total serum cholesterol (mmol/l)	General population %	Black Caribbean %	Indian %	Pakistani %	Bangladeshi %	Chinese %	Irish %
MEN							
Mean	5.5	5.2	5.5	5.2	5.3	5.2	5.4
% 5.0 and above	66.3	56.4	65.6	57.0	59.7	53.7	65.0
Base	*4,874*	*285*	*379*	*301*	*198*	*149*	*326*
WOMEN							
Mean	5.6	5.2	5.3	5.3	5.3	5.3	5.5
% 5.0 and above	67.1	51.7	57.7	56.4	53.0	53.0	62.4
Base	*5,458*	*368*	*376*	*281*	*176*	*175*	*439*

Adults aged 16 and over.

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

Source: Department of Health (2000) Health Survey for England. The Health of Minority Ethnic Groups 1999. The Stationery Office: London.

Table 10.7 Low HDL cholesterol by sex and ethnic group, 1999, England

Total HDL cholesterol (mmol/l)	General population %	Black Caribbean %	Indian %	Pakistani %	Bangladeshi %	Chinese %	Irish %
MEN							
Mean	1.3	1.5	1.3	1.1	1.1	1.3	1.3
% < 1.0	16.9	10.3	18.8	28.2	45.3	13.5	18.6
Base	*4,874*	*285*	*379*	*301*	*198*	*149*	*326*
WOMEN							
Mean	1.6	1.6	1.5	1.4	1.3	1.6	1.6
% < 1.0	5.4	3.1	8.7	12.9	19.8	4.5	5.5
Base	*5,458*	*368*	*376*	*281*	*176*	*175*	*439*

Adults aged 16 and over.

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

Source: Department of Health (2000) Health Survey for England. The Health of Minority Ethnic Groups 1999. The Stationery Office: London.

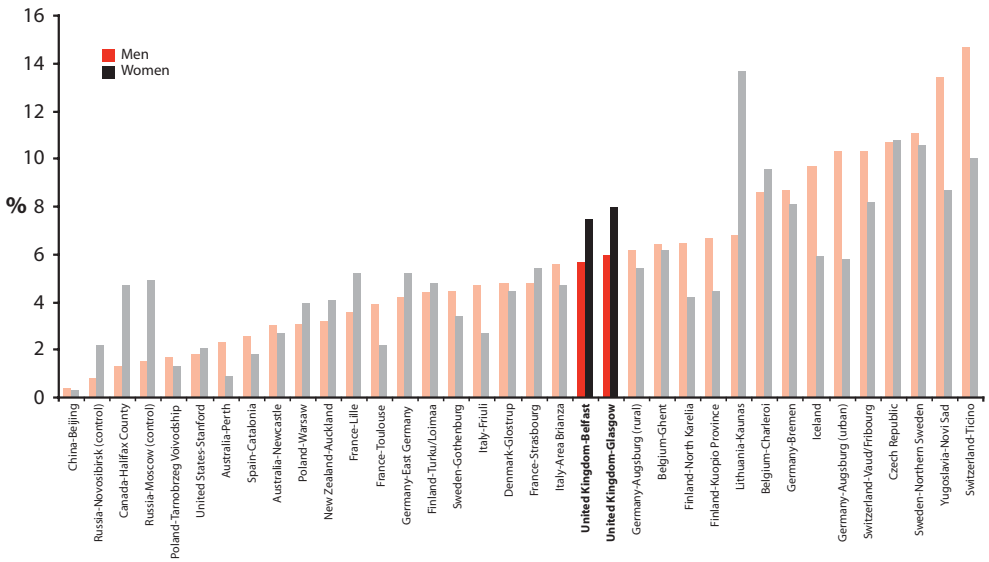
Table 10.8 Blood cholesterol levels, adults aged 35-64, by sex, latest available data, MONICA Project populations

Total cholesterol (mmol/l)			MEN			WOMEN		
			5.2 - <7.8	≥7.8	Mean	5.2 - <7.8	≥7.8	Mean
MONICA population	MONICA population code	Year of survey	%	%	mmol/l	%	%	mmol/l
Australia-Newcastle	AUS-NEW	1994	68	3	5.8	61	3	5.6
Australia-Perth	AUS-PER	1994	65	2	5.5	53	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-Novi Sad	YUG-NOS	1994/95	69	13	6.4	70	9	6.2

Age-standardised levels; consult WHO MONICA Project for details of measurement and age-standardisation.

Source: WHO MONICA Project database, personal communication.

Fig 10.8 Percentage of adults aged 35-64 with blood cholesterol levels ≥7.8 mmol/l, latest available data, MONICA Project populations



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[1].

The adverse effects of excess weight are more pronounced when fat is concentrated mainly in the abdomen. This is known as central or abdominal obesity and can be identified by a high waist to hip ratio[2].

The World Health Organization's World Health Report 2002 estimates that over 7% of all disease burden in developed countries is 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 is due to levels of BMI in excess of the theoretical minimum (21 kg/m^2)[3].

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 are due to abdominal obesity (a high waist to hip ratio), and those with abdominal obesity are at over twice the risk of a heart attack compared to those without[4]. This study also found that abdominal obesity was a much more significant risk factor for heart attack than BMI.

Overall prevalence

In England around 44% of men and 35% of women are overweight (a BMI of 25-30 kg/m^2), and an additional 23% of men and 24% of women are obese (a BMI of more than 30 kg/m^2) (Table 11.2). Central obesity is also common among adults in England. Data from 2003 show that around 33% of men and 30% of women have central obesity (Table 11.3).

Age and sex differences

Overweight and obesity increase with age, peaking in those aged 55-64. About 31% of men and 38% of women aged 16-24 are overweight or obese but 78% of men and 70% of women aged 55-64 are overweight or obese (Table and Fig 11.2). The prevalence of central obesity also increases with age, especially in men. About 4% of men and 11% of women aged 16-24 have central obesity but 57% of men and 45% of women aged 65-74 have 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. While there is no clear agreement on the best way to define overweight and obesity

in children, the International Obesity Taskforce has developed a new international classification based on age and sex-specific BMI cut-off points. This classification has been used in the 2002 Health Survey for England[5].

These data show that in England, over a fifth of boys (22%) and over a quarter of girls (28%) aged 2-15 years are either overweight or obese (Table 11.4). Throughout childhood rates of overweight and obesity are higher in girls than boys[6]. Prevalence of obesity in English children aged 2-15 is 6% in boys and 7% in girls.

Temporal trends

Overweight and obesity are increasing rapidly. In England, the percentage of adults aged 16-64 who are obese has increased by over 50% in the last decade (Table 11.5 and Fig 11.5). This increase in obesity is particularly marked in men among whom rates have tripled since the mid-1980s, with men now as likely to be obese as women.

There has also been a steady increase in the prevalence of obesity in children. Between 1995 and 2002, the prevalence of obesity in England doubled in boys aged 2-15 (from 3% to 6%) and increased by over a half in girls (from 5% to 8%) (Table 11.6).

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[7].

Socio-economic differences

Obesity is more common in adults employed in manual occupations, particularly in women. For example, 29% of women working in semi routine and routine occupations have a BMI of more than 30 kg/m^2 compared to less than 20% of those employed in a managerial and professional role. Women working in lower supervisory and technical or semi routine and routine occupations are twice as likely as those in managerial and professional employment to be classified as morbidly obese (a BMI over 40) (Table 11.7).

In both men and women, the prevalence of central obesity is 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 is most evident in women where the prevalence of central obesity gradually increases from 24% in managerial and professional occupations to 36% in semi-routine and routine occupations (Table 11.8).

Ethnic differences

Levels of general and central obesity vary with ethnicity in both men and women in England.

Compared with the general population, levels of obesity are much lower in Black African, Indian, Pakistani, and, most markedly, Bangladeshi and Chinese men, who are around four times less likely to be obese than men in the general population (Table and Fig 11.9). Black Caribbean and Irish men have similar levels of obesity to the general population. Despite low levels of general obesity, Pakistani, Indian and Bangladeshi men have similar levels of raised waist to hip ratio compared to the general population. Black Caribbean, Black African and Chinese men are less likely to have a raised waist hip ratio (Table 11.10).

Among women, obesity prevalence is high for Black Caribbean, Black African and Pakistani women and low for Chinese women (Table 11.9 and Fig 11.9). Again the pattern is different for levels of central obesity. Black Caribbean, Pakistani, and Irish women all have levels of central obesity above that of the general female population, while Bangladeshi women are nearly twice as likely to have a raised waist to hip ratio as women in the general population (Table 11.10).

International differences

Data from the WHO SuRF Report 2 show that the prevalence rates for overweight and obesity in the UK are among the highest in Europe. Worldwide, overweight and obesity prevalence rates in the UK are in the highest quintile for men and the second highest for women (Table 11.11 and Figs 11.11a and 11.11b).

Public health targets

There are currently no overweight and obesity targets for Wales, Scotland or Northern Ireland.

In England a new obesity target for children was introduced in 2004 – to halt the year-on-year rise in obesity in children under 11 by 2010. In future editions we will monitor progress towards this target using Health Survey for England data.

1. *World Health Organization (2000) Obesity – preventing and managing the global epidemic. Report of a WHO Consultation on Obesity. Geneva: World Health Organization.*
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. *Yusaf 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 11.1) and childhood (Table 11.3) 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

England[1]	
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
Wales	
	No target set
Scotland	
	No target set
Northern Ireland	
	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/fs/en?CONTENT_ID=4096173&chk=V8WLUg*

Table 11.2 Body mass index by sex and age, 2004, England

Body mass index (kg/m²)	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
MEN								
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
All over 30 (obese)	***23***	***8***	***18***	***25***	***30***	***30***	***28***	***19***
Base (unweighted)	*2,444*	*255*	*388*	*478*	*390*	*424*	*319*	*190*
WOMEN								
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
All over 30 (obese)	***24***	***12***	***18***	***24***	***26***	***32***	***28***	***20***
Base (unweighted)	*3,135*	*294*	*453*	*649*	*527*	*538*	*393*	*281*

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

Fig 11.2 Prevalence of overweight and obesity by sex and age, 2004, England

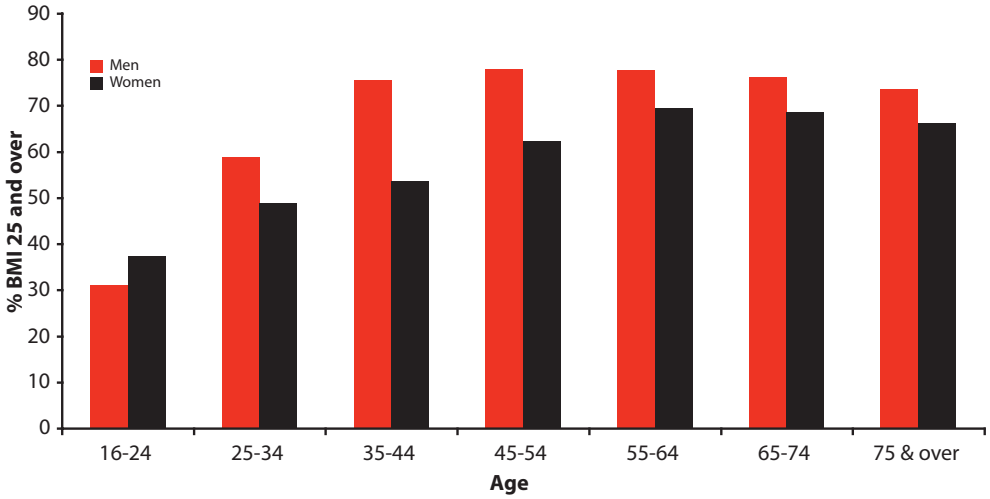


Table 11.3 Prevalence of a raised waist-hip ratio (WHR) by sex and age, 2003, England

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
MEN	33	4	14	32	41	54	57	51
Base	*5,397*	*771*	*969*	*1,074*	*891*	*779*	*551*	*363*
WOMEN	30	11	18	26	28	42	45	54
Base	*5,554*	*752*	*891*	*1,044*	*895*	*809*	*606*	*556*

Raised waist-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

Table 11.4 Prevalence of obesity and overweight in children by sex and age, 2002, England

		Age (years)													
	All aged 2-15	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BOYS	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Overweight	16	19	12	17	14	13	12	17	17	17	20	18	20	14	18
Obese	6	5	6	5	5	4	4	6	6	6	8	6	5	5	6
Total overweight and obese	**22**	**25**	**17**	**21**	**19**	**17**	**17**	**23**	**23**	**23**	**28**	**24**	**26**	**19**	**24**
Base	*5,442*	*265*	*330*	*382*	*381*	*404*	*426*	*410*	*408*	*420*	*427*	*427*	*397*	*386*	*378*
GIRLS															
Overweight	20	20	18	16	14	19	18	22	21	27	24	21	20	23	19
Obese	7	2	6	7	7	8	7	8	11	7	7	6	8	7	7
Total overweight and obese	**28**	**22**	**24**	**23**	**22**	**27**	**26**	**30**	**32**	**33**	**31**	**27**	**28**	**30**	**27**
Base	*5,381*	*297*	*324*	*358*	*400*	*384*	*405*	*431*	*412*	*403*	*435*	*390*	*402*	*368*	*371*

Children were defined as overweight or obese using the International classification age and sex-specific BMI percentile cut- points . For details see 2002 Health Survey for England.

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

Table 11.5 Body Mass Index by sex, adults aged 16-64, 1986/87-2004, England

Body mass index (kg/m²)	1986/87	1991/92	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MEN														
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
Bases	*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*
WOMEN														
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
Bases	*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*

Adults aged 16-64 years.

Sources: Department of Health (2004) Health Survey for England 2003. See www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en
Earlier figures, Central Health Monitoring Unit, Department of Health, personal communication.

Fig 11.5 Prevalence of obesity, adults aged 16-64, 1986/87 - 2004, England

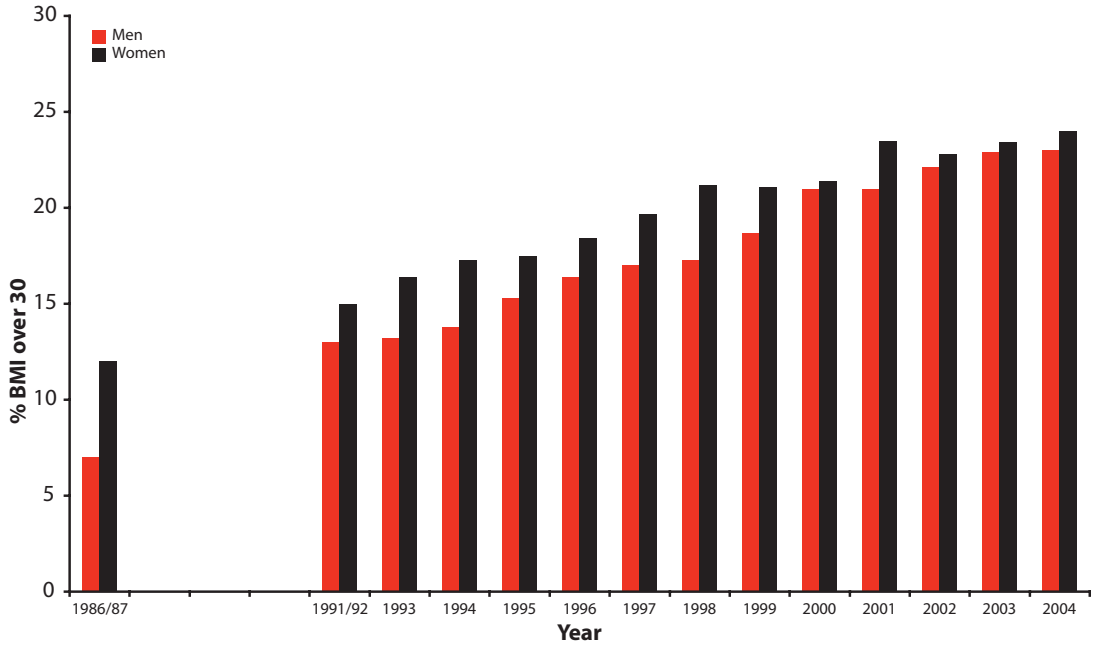


Table 11.6 Prevalence of obesity and overweight in children by sex and age, 1995 - 2002, England

	1995	1996	1997	1998	1999/2000	2001	2002
BOYS	%	%	%	%	%	%	%
Aged 2-5							
Overweight	14	13	13	15	15	14	16
Obese	3	4	4	2	6	4	6
Overweight including obese	**17**	**18**	**17**	**17**	**21**	**17**	**22**
Aged 6-10							
Overweight	11	12	12	13	16	17	15
Obese	3	4	3	4	4	6	5
Overweight including obese	**14**	**16**	**15**	**17**	**20**	**23**	**20**
Aged 11-15							
Overweight	16	15	16	19	16	19	18
Obese	3	4	5	2	6	5	6
Overweight including obese	**18**	**19**	**20**	**21**	**22**	**24**	**24**
All (aged 2-15)							
Overweight	13	14	14	16	16	17	16
Obese	3	4	4	3	5	5	6
Overweight including obese	**16**	**17**	**17**	**18**	**21**	**22**	**22**
Base 2-15 (weighted)	*1,918*	*2,132*	*3,061*	*1,981*	*1,854*	*1,496*	*3,745*
GIRLS							
Aged 2-5							
Overweight	15	14	17	15	15	13	18
Obese	4	6	6	5	5	4	7
Overweight including obese	**20**	**20**	**23**	**20**	**21**	**17**	**25**
Aged 6-10							
Overweight	16	14	14	17	17	24	21
Obese	6	6	6	5	8	6	9
Overweight including obese	**22**	**20**	**20**	**22**	**25**	**30**	**30**
Aged 11-15							
Overweight	19	18	20	19	18	22	21
Obese	5	6	5	6	7	7	8
Overweight including obese	**24**	**24**	**25**	**25**	**25**	**29**	**29**
All (aged 2-15)							
Overweight	17	16	17	17	17	20	20
Obese	5	6	5	5	7	6	8
Overweight including obese	**22**	**21**	**22**	**22**	**24**	**26**	**28**
Base 2-15 (weighted)	*1,901*	*2,013*	*3,069*	*1,872*	*1,792*	*1,528*	*3,636*

Children were defined as overweight or obese using the International Classification age and sex-specific BMI percentile cut-off points. For details see 2002 Health Survey for England.

Data from 1999 and 2000 are combined due to small numbers. For bases in each age group, see source.

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

Table 11.7 Prevalence of morbid obesity, obesity and overweight by sex and socio-economic classification, 2003, England

	NS-SEC of household reference person				
	Managerial & professional	**Intermediate**	**Small employers & own account workers**	**Lower supervisory & technical**	**Semi-routine & routine**
Body mass index (kg/m²)	**%**	**%**	**%**	**%**	**%**
MEN					
25-30 (overweight)	64	63	65	63	62
Over 30 (obese)	20	20	25	23	22
Over 40 (morbid obesity)	1	0	2	1	1
Mean BMI	***26.7***	***26.7***	***27.1***	***26.9***	***26.8***
Bases	*2,706*	*459*	*754*	*879*	*1,615*
WOMEN					
25-30 (overweight)	49	50	57	61	61
Over 30 (obese)	19	18	20	28	29
Over 40 (morbid obesity)	2	3	2	4	4
Mean BMI	***25.9***	***26.1***	***26.5***	***27.5***	***27.5***
Bases	*2,540*	*612*	*671*	*758*	*1,815*

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 www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en

Table 11.8 Prevalence of a raised waist-hip ratio by sex and socio-economic classification, 2003, England

	NS-SEC of household reference person				
	Managerial & professional	**Intermediate**	**Small employers & own account workers**	**Lower supervisory & technical**	**Semi-routine & routine**
	%	**%**	**%**	**%**	**%**
MEN	25	31	33	31	34
Mean waist-hip ratio	0.90	0.91	0.92	0.91	0.92
Base	*2,275*	*395*	*626*	*764*	*1,383*
WOMEN	24	26	27	35	36
Mean waist-hip ratio	0.81	0.81	0.82	0.82	0.83
Base	*2,257*	*544*	*594*	*687*	*1,623*

Adults aged 16 and over.

Raised waist-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

Table 11.9 Prevalence of obesity by sex and ethnic group, 2004, England

	General population	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish
	%	%	%	%	%	%	%	%
MEN	23	25	17	14	15	6	6	25
Bases (unweighted)	*2,444*	*317*	*297*	*482*	*346*	*330*	*307*	*420*
WOMEN	23	32	39	20	28	17	8	21
Bases (unweighted)	*3,135*	*459*	*332*	*546*	*391*	*353*	*308*	*555*

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

Fig 11.9 Prevalence of obesity by sex and ethnic group, 2004, England

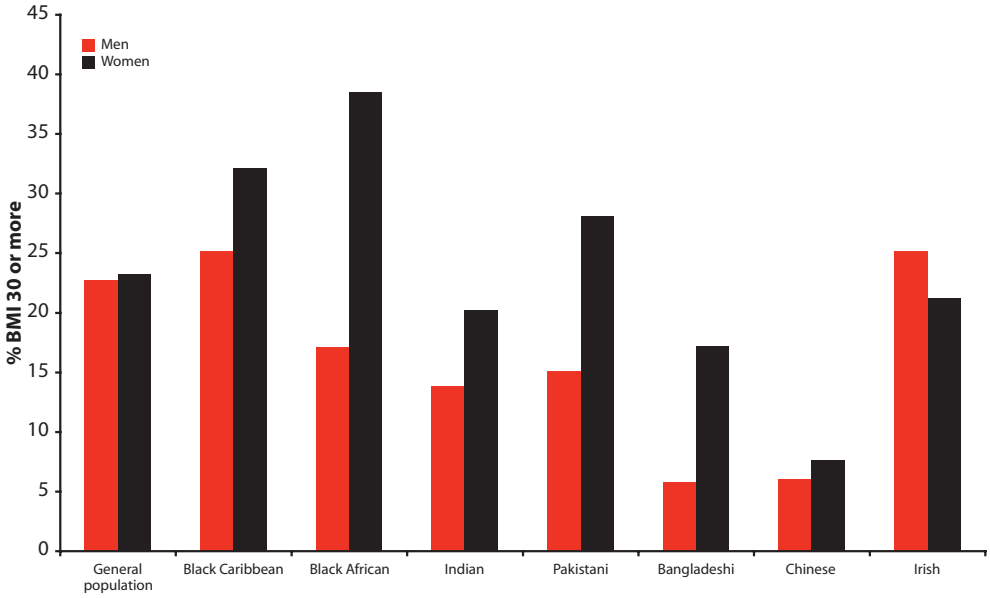


Table 11.10 Prevalence of a raised waist-hip ratio by sex and ethnic group, 2004, England

	General population	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish
	%	%	%	%	%	%	%	%
MEN	33	25	16	36	37	32	17	36
Bases (unweighted)	*4,692*	*209*	*156*	*310*	*197*	*138*	*182*	*311*
WOMEN	*30*	*37*	*32*	*30*	*39*	*50*	*22*	*37*
Bases (unweighted)	*5,995*	*314*	*200*	*345*	*224*	*171*	*185*	*405*

Adults aged 16 and over.

A raised waist-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 11.11 Prevalence of overweight and obesity, prevalence estimates for 2002, and projections for 2005 and 2010, 15 years and above by sex, the World

	Prevalence of overweight, Male %			Prevalence of overweight, Female %			Prevalence of obesity, Male %			Prevalence of obesity, Female %		
	2002	2005	2010	2002	2005	2010	2002	2005	2010	2002	2005	2010
WHO Africa Region												
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
WHO Eastern Mediterranean and Middle East Region												
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
WHO European Region												
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
Macedonia, Former Yugoslav Republic of	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

	Prevalence of overweight, Male %			Prevalence of overweight, Female %			Prevalence of obesity, Male %			Prevalence of obesity, Female %		
	2002	2005	2010	2002	2005	2010	2002	2005	2010	2002	2005	2010
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	1.3	1.3	1.4	1.6	1.8	2.9
Solomon Islands	36.8	38.2	40.7	48.0	49.9	52.9	4.9	5.4	6.4	13.4	14.7	17.1
Thailand	27.7	27.9	28.3	32.5	35.2	39.9	2.5	2.5	2.6	7.0	8.4	11.1
Timor-Leste, Democratic Republic of	35.9	37.2	39.5	46.4	48.2	51.1	6.0	6.5	7.5	14.2	15.4	17.7
Tonga	89.5	90.3	91.4	90.9	91.4	92.1	58.7	60.7	64.0	74.8	76.1	78.1
Tuvalu	51.2	52.5	54.4	59.2	60.7	62.9	11.1	11.9	13.1	22.3	23.8	26.2
Vanuatu	54.0	56.3	60.2	60.1	62.9	67.2	11.9	13.4	16.2	23.4	26.3	31.4
Vietnam	2.7	4.1	7.5	7.0	8.7	12.2	0.0	0.0	0.0	0.2	0.3	0.7

Values are age-standardised to the WHO Standard Population. Overweight is defined as BMI ≥ 25kg/m^2. Obese defined as BMI ≥ 30kg/m^2.

Estimates for 2005 and 2010 are projections only.

Source: WHO (2005) The SuRF Report 2. Surveillance of chronic disease risk factors, WHO: Geneva.

Fig 11.11a Prevalence of obesity by sex, 2002, WHO European Region

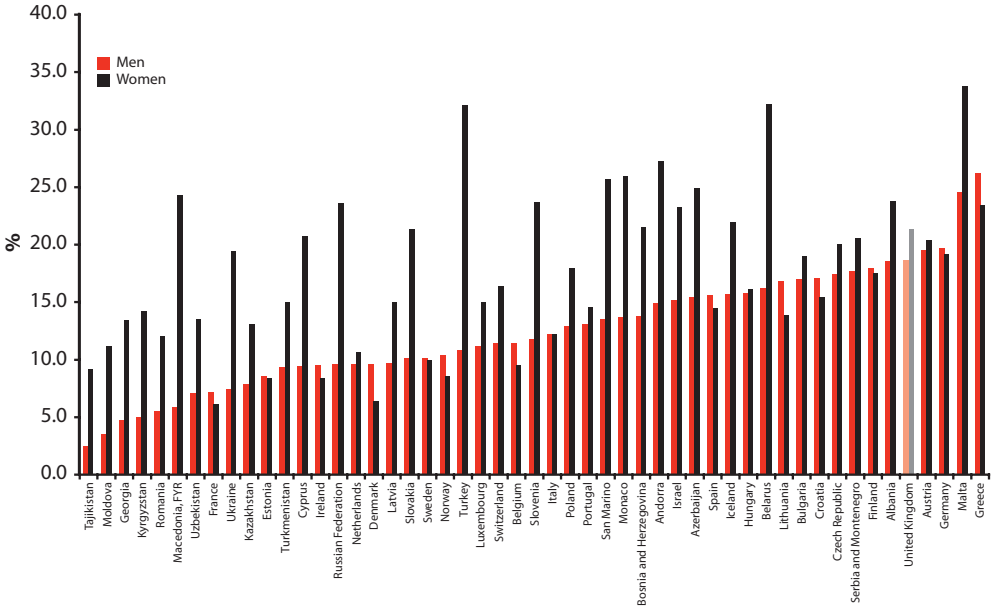
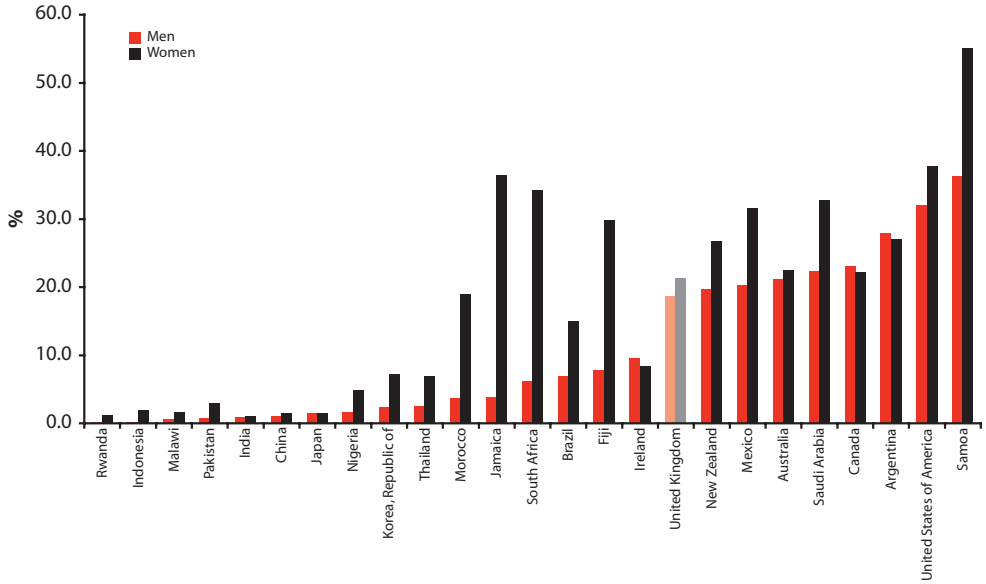


Fig 11.11b Prevalence of obesity by sex, 2002, selected countries, the World



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[1].

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[2].

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[3].

Overall prevalence of diabetes

Over 4% of men and 3% of women in England have diagnosed diabetes (Table 12.1)[4].

Using the age and sex-specific prevalence rates from the Health Survey for England we estimate that there are just under 1.9 million adults with diagnosed diabetes in the UK[5].

However, not all diabetes is diagnosed. The Health Survey for England 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 589,000 adults with undiagnosed diabetes in the UK[5]. 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 suggests that less than 0.5% of men aged 16-34 years have diagnosed diabetes compared with 10% of those aged 75 and over (Table 12.1 and Fig 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 3 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 2003 Health Survey for England, 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 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 is much higher among some ethnic minority communities than in the general population. In Black Caribbean and Indian men, the prevalence of diagnosed diabetes is more than twice that found in the general population. The prevalence for Black Caribbean and Pakistani women is two and a half times that of the general population. However, the prevalence for Black African and Irish women is substantially lower than for the general population (Table 12.7and Fig 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 Fig 12.8). In general developed countries currently have higher rates than developing countries (Fig 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. *Yusaf 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*
5. *These estimates are derived from applying age-specific rates to the UK population estimates for 2004, 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	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
MEN	4.3	0.4	0.3	2.8	3.6	8.1	11.9	10.0
Base	*7,202*	*1,047*	*1,274*	*1,416*	*1,185*	*1,043*	*731*	*507*
WOMEN	3.4	0.9	0.9	1.5	2.6	4.7	8.4	8.9
Base	*7,634*	*1,034*	*1,285*	*1,440*	*1,200*	*1,074*	*816*	*785*

Self-reported diagnosis of either Type I or Type 2 diabetes.

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

Fig 12.1 Prevalence of diagnosed diabetes, by sex and age, 2003, England

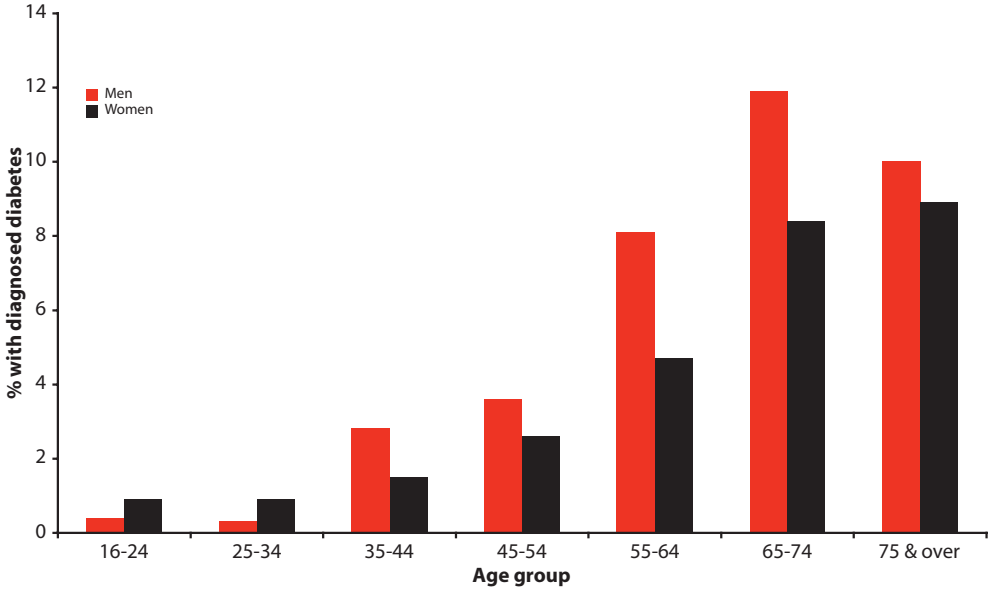


Table 12.2 Prevalence of undiagnosed diabetes, adults aged 35 years and over, by sex and age, 2003, England

	All ages	35-44	45-64	65 &over
	%	%	%	%
MEN	3.0	0.0	2.3	6.9
Base	*334*	*97*	*146*	*91*
WOMEN	0.7	0.8	0.0	1.9
Base	*367*	*100*	*163*	*104*

Undiagnosed diabetes defined as prevalence of glucose ≥7mmol/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, 1991-2003, England

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
MEN								
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*
WOMEN								
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
Base 2003 (unweighted)	*8,234*	*890*	*1,285*	*1,618*	*1,279*	*1,307*	*952*	*903*
Base 2003 (weighted)	*7,634*	*1,034*	*1,285*	*1,440*	*1,200*	*1,074*	*816*	*785*

Self-reported diagnosis of either Type I 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.

Fig 12.3 Prevalence of diagnosed diabetes in adults, 1991-2003, England

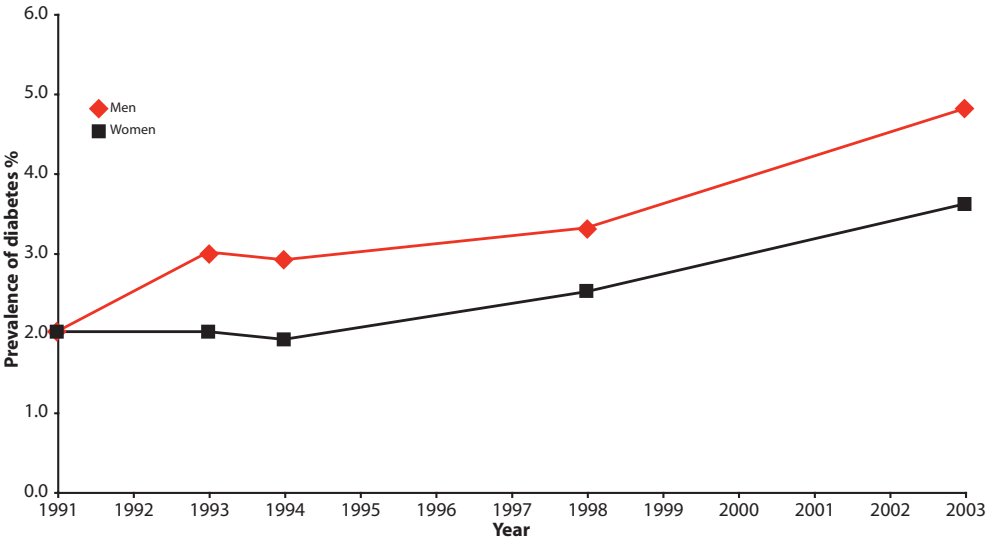


Table 12.4 Age-standardised prevalence of diagnosed diabetes by sex and Government Office Region, 2003, England

	Government Office Region								
Doctor-diagnosed diabetes	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
Base (weighted)	*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
Base (weighted)	*416*	*1,025*	*769*	*660*	*817*	*844*	*1,102*	*1,233*	*769*

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

	NS-SEC of household reference person				
Doctor-diagnosed diabetes	Managerial & professional	Intermediate	Small employers & own account workers	Lower supervisory & technical	Semi-routine & routine
	%	%	%	%	%
MEN	3.6	2.6	4.1	3.5	4.1
Base (weighted)	*2,932*	*507*	*829*	*971*	*1,822*
WOMEN	2.6	1.6	4.2	4.3	4.0
Base (weighted)	*2,900*	*716*	*755*	*876*	*2,160*

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

	Equivalised household income quintile				
	Lowest	2nd	3rd	4th	Highest
	%	%	%	%	%
MEN	6.1	6.0	4.2	3.2	2.3
Base (weighted)	*1,036*	*973*	*1,280*	*1,419*	*1,390*
WOMEN	4.0	4.5	2.7	2.4	1.7
Base (weighted)	*1,285*	*1,134*	*1,424*	*1,365*	*1,172*

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
MEN	%	%	%	%	%	%	%	%
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
Bases (unweighted)	*6,602*	*414*	*390*	*550*	*433*	*411*	*348*	*497*
WOMEN	%	%	%	%	%	%	%	%
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
Bases (unweighted)	*8,234*	*653*	*469*	*634*	*508*	*478*	*375*	*656*

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

Fig 12.7 Prevalence of diagnosed diabetes by ethnic group, 2004, England

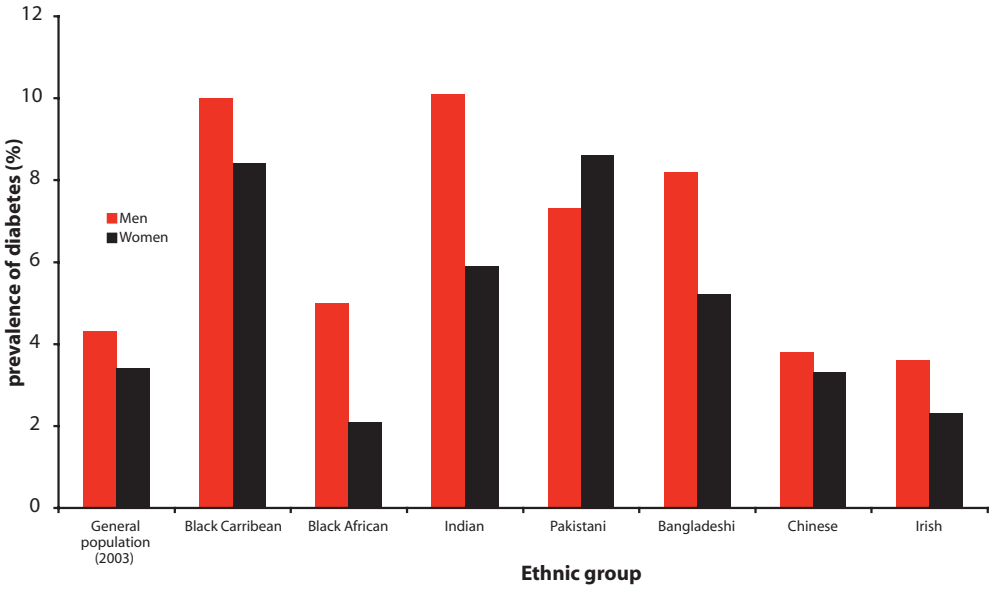


Table 12.8 Estimated prevalence of diabetes and number of people with diabetes, 2003 and 2025, selected countries, the World

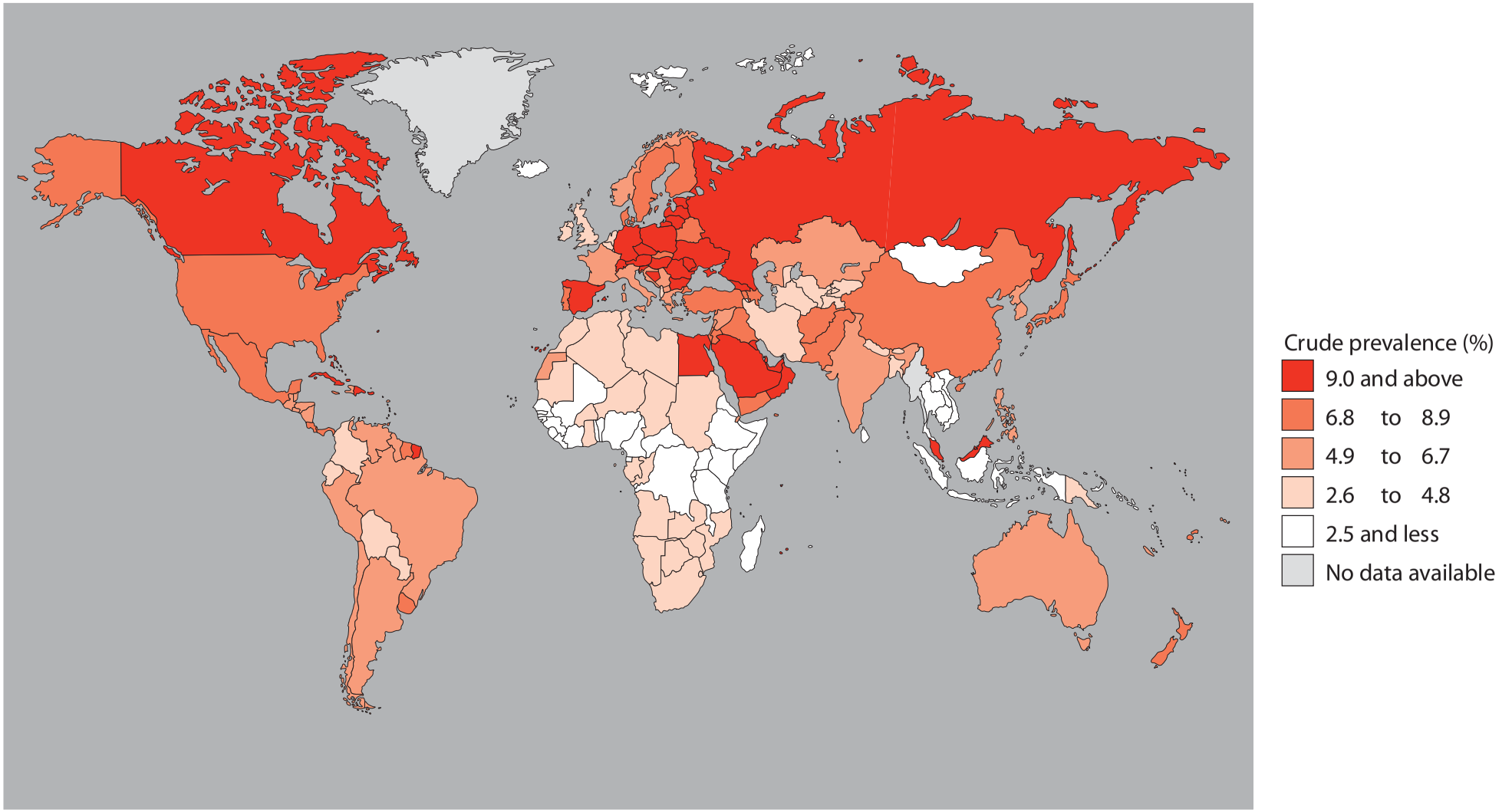
	2003 Population Aged 20-79 (000s)	Numbers with diabetes Men (000s)	Women (000s)	Total (000s)	Crude prevalence %	2025 Population Aged 20-79 (000s)	Numbers with diabetes Men (000s)	Women (000s)	Total (000s)	Crude prevalence %
World	**3,822,720**	**92,455**	**101,646**	**194,195**	**5.1**	**5,250,955**	**158,117**	**174,552**	**332,749**	**6.3**
WHO Africa Region	**295,065**	**3,580**	**3,491**	**7,072**	**2.4**	**541,140**	**7,870**	**7,171**	**15,041**	**2.8**
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
WHO Eastern Mediterranean and Middle East Region	**276,025**	**9,713**	**9,524**	**19,237**	**7.0**	**493,560**	**19,257**	**20,153**	**39,410**	**8.0**
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
WHO European Region	**621,235**	**22,337**	**26,041**	**48,378**	**7.8**	**646,334**	**27,842**	**30,796**	**58,638**	**9.1**
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

	2003 Population Aged 20-79 (000s)	Numbers with diabetes Men (000s)	Women (000s)	Total (000s)	Crude prevalence %	2025 Population Aged 20-79 (000s)	Numbers with diabetes Men (000s)	Women (000s)	Total (000s)	Crude prevalence %
Portugal	7,471	279	306	585	7.8	7,456	344	362	706	9.5
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	1	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
Tajikstan	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
WHO North American Region	**289,550**	**10,947**	**12,070**	**23,016**	**7.9**	**374,364**	**16,996**	**19,179**	**36,175**	**9.7**
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	1	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
WHO South and Central American Region	**251,850**	**6,021**	**8,137**	**14,158**	**5.6**	**363,881**	**11,000**	**15,156**	**26,156**	**7.2**
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
WHO South-East Asian Region	**705,292**	**19,911**	**19,386**	**39,296**	**5.6**	**1,081,026**	**41,380**	**40,187**	**81,567**	**7.5**
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
WHO Western Pacific Region	**1,383,705**	**19,938**	**23,091**	**43,029**	**3.1**	**1,750,653**	**33,765**	**41,997**	**75,762**	**4.3**
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	1	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	1	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
Soloman 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

** United Kingdom data for 2003 updated to include new prevalence rates for diagnosed and undiagnosed diabetes from the 2003 Health Survey for England. 2025 estimate is for diagnosed cases only.*

Source: International Diabetes Federation (2003) The Diabetes Atlas (Second edition) International Diabetes Federation:Brussels.

Fig 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[1,2] (Table 13.1). This represents a cost per capita of just under £250. The cost of hospital care for people who have CVD accounted for about 76% of these costs, that of drugs and of dispensing them for about 18% (Fig 13.1a).

CHD cost the health care system in the UK around £3,500 million in 2003[1,2] (Table 13.1). This represents a cost per capita of just under £60. The cost of hospital care for people who have CHD accounted for about 79% of these costs, that of drugs and of dispensing them for about 16% (Fig 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[3] 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[3] 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).

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.*
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*

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
Total health care costs	**14,732**	**100.0**	**3,527**	**100.0**
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.*

Fig 13.1a Health care costs of CVD, 2003, United Kingdom

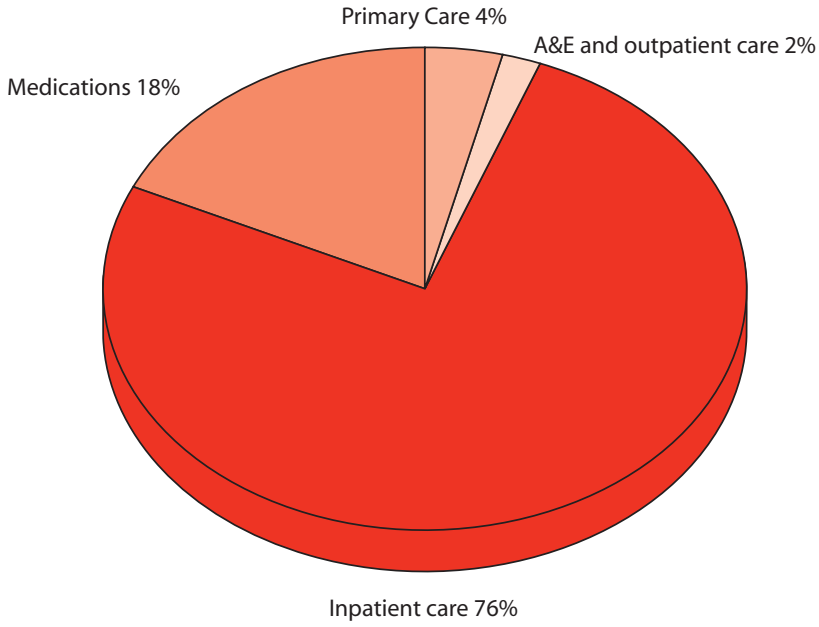


Fig 13.1b Health care costs of CHD, 2003, United Kingdom

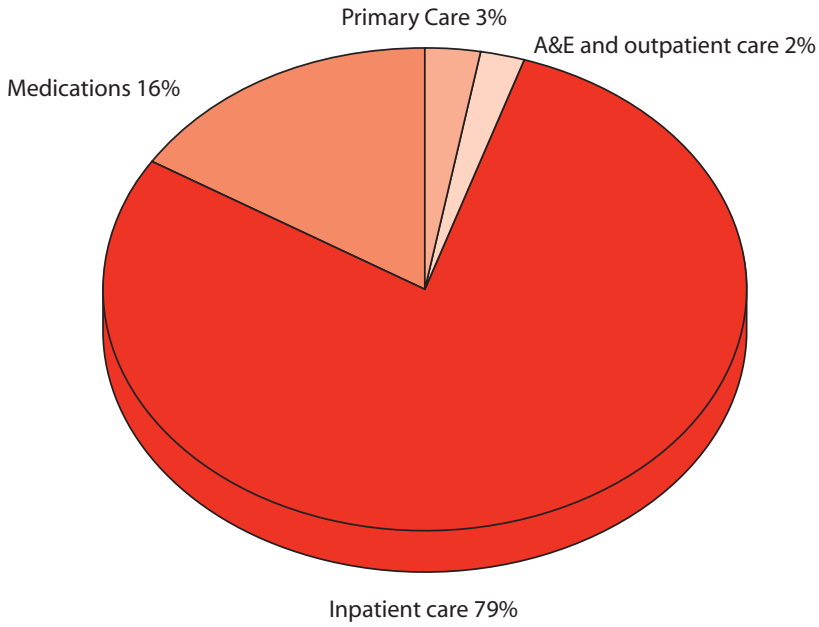


Table 13.2 Total costs of CVD and CHD, 2003, United Kingdom

	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
Total	**25,799**	**100.0**	**7,910**	**100.0**

Source: Petersen S, Peto V, Rayner M, Leal J, Luengo-Fernandez R and Gray A (2005) European cardiovascular disease statistics. British Heart Foundation: London.