Coronary heart disease statistics: diabetes supplement

2001 edition

Mike Rayner[1], Sophie Petersen[1], Chris Buckley[1] and Vivienne Press[2]

[1] British Heart Foundation Health Promotion Research Group
Department of Public Health, University of Oxford

[2] British Heart Foundation

Scientific advisors for this supplement

Dr Philip Clarke
Research Fellow
Health Economics Research Centre,
Department of Public Health, University Oxford

Dr Andrew Farmer
Clinical Scientist
Department of Primary Health Care, University of Oxford

Professor Rury Holman
Professor of Diabetic Medicine
Diabetes Trials Unit, University of Oxford

Dr Andrew Neil
University Lecturer in Clinical Epidemiology
Department of Public Health, University of Oxford

Contents

Foreword

Over the past 20 years there has been a steady decrease in the numbers of people in the UK dying from cardiovascular disease (CVD). However, this publication sounds a warning that the decrease may be about to slow down. The cause will be the rapidly increasing numbers of people with Type 2 diabetes.

Recent research has shown that people with diabetes are at greatly increased risk of CVD. For example, women aged 40-59 with diabetes are eight times more likely to die of CVD than women without diabetes. However, neither the increase in numbers of people developing diabetes nor the increased risk of people with diabetes dying from CVD are inevitable. Both can be largely prevented by lifestyle changes and effective management of diabetes.

People who are neither overweight nor obese and who are physically active have less risk of developing Type 2 diabetes. If diabetes does develop, good glucose control is essential but it is not sufficient to prevent CVD. Close management of the other major risk factors for CVD is also essential. These include, blood pressure, lipid levels, overweight and obesity, physical inactivity and smoking. However, many people in the UK are not receiving the regular assessment of these risk factors that is needed.

Diabetes also needs to be diagnosed earlier. There are currently as many people in the UK with undiagnosed diabetes as there are with diagnosed diabetes. By the time people know they have diabetes, one in four already have CVD.

The aim of this publication is to highlight the increasing burden in the UK of CVD due to diabetes, and to provide statistics to help those planning prevention and healthcare services. However, good management of diabetes can only be achieved through effective partnerships between people with diabetes and their healthcare professionals. Therefore, to coincide with this publication, the BHF and Diabetes UK have also published an information booklet for people with diabetes and their families, called *Diabetes and Your Heart*.

Our predicted doubling of diabetes by 2010 and the resulting rise in CVD are not inevitable. We know how to prevent them. Now is the time to act together to save lives.

Dr Vivienne Press
Assistant Medical Director
British Heart Foundation

Mrs Suzanne Lucas
Director of Care
Diabetes UK

Summary

- There are about 1.4 million people with diagnosed diabetes in the UK and about a further 1 million people with undiagnosed diabetes.
- There will be about 3 million people with diabetes in the UK by the year 2010.
- There are about 150 million people with diabetes worldwide and there will be about 221 million by the year 2010.
- There are about 33,000 deaths in the UK each year that are attributable to diabetes – about one in seven of all deaths. At least a half of these deaths are from cardiovascular disease (CVD).
- About a quarter of people with newly diagnosed diabetes already have CVD.
- In the UK about 3% of years of life lost in disability are due to diabetes.
- In the UK 5% of all days spent in hospital are due to diabetes. About 60% of these days are because of CVD.
- About 46% men and 32% of women are overweight or obese in the UK. About two thirds of cases of diabetes could be prevented if no one was overweight.

Introduction

The aims of this publication

Diabetes is a cause of serious morbidity and significant premature mortality both in its own right and as a major risk factor for cardiovascular diseases (CVD) – coronary heart disease (CHD), stroke and peripheral vascular disease. This supplement presents statistics on the burden of diabetes alone but its focus is on the burden of CVD due to diabetes. It aims to characterise the burden of diabetes to individuals and to UK society as a whole in terms of both mortality and morbidity.

Each section gives as far as is possible UK data by sex, age, socio-economic group, ethnic origin and geographical region. The supplement also examines trends and likely trends in the burden of diabetes over time and compares the burden in the UK with that in other countries.

There are two main types of diabetes: Type 1 and Type 2 diabetes. CVD due to diabetes is largely preventable. This supplement describes patterns and trends in obesity and physical inactivity – the two major behavioural risk factors for Type 2 diabetes and risk factors it shares with CVD. The complications of diabetes, including CVD, can be delayed or helped by a combination of appropriate treatment and lifestyle changes. This supplement presents some statistics on the treatment of diabetes focusing on the prevention of CVD in people with diabetes.

What is diabetes?

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 treated with glucose lowering medication.

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.

For the purposes of this report, ‘diabetes’ refers to all types of diabetes (IDC-9 code 250 and ICD-10 codes E10-E14) unless otherwise stated.

Impaired glucose tolerance is a condition closely related to Type 2 diabetes. It occurs when the blood glucose level is higher than normal, but not high enough to be classified as diabetes. As in Type 2 diabetes, insulin is produced in lesser amounts or is less effective. People with impaired glucose tolerance are at a greater risk of developing Type 2 diabetes in the future.

Good glucose control is essential for preventing the long-term problems of diabetes, such as damage to the eyes, kidneys and feet.

Diabetes as a risk factor for CVD

Diabetes increases the risk of CVD but it also magnifies the effect of other risk factors for CVD such as raised cholesterol levels, raised blood pressure, smoking and obesity. Furthermore, people with diabetes are more likely to develop many of these other risk factors for CVD, further magnifying their risk. It is therefore important to target people with diabetes for advice about diet, physical activity and smoking and for treatment of raised blood pressure and blood cholesterol levels.

Behavioural risk factors for diabetes

Both genetic and environmental factors are responsible for diabetes. Type 1 diabetes is believed to be triggered by exposure to environmental factors, although these are not known. The development of Type 2 diabetes is influenced significantly by obesity and a lack of physical activity.

Methods for this publication

Various sources of information have been used in compiling this supplement. The sources of data can be divided into routinely collected national data, national studies and local studies. Data from different sources are collected in different ways and with different degrees of validity and reliability. Most sources only provide data on one or two aspects of diabetes. Not all sources supply data for all ages or even both sexes. Sample sizes of studies vary considerably as do sampling methods. This limits the extent to which the information can be combined, modelled or even compared.

Nevertheless there are many sources that provide detailed and valuable information in their own areas. In compiling this supplement we have aimed to investigate all possible sources of recent data relating to the burden of diabetes and its major behavioural risk factors but have presented data, and calculated estimates of numbers, only 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. We have not included data from outside of the UK (except when making international comparisons). We have aimed to include the most recent data available.

1. Prevalence of diabetes

Overall prevalence

Determining the prevalence of diabetes in the population is difficult. Studies of the prevalence of diabetes have generally had to rely either on self-reports of a diagnosis of diabetes or on extracting data on diagnoses of diabetes from general practitioner (GP) or hospital records. Both these methods are limited because they omit cases of undiagnosed diabetes and the criteria used by health professionals in making diagnoses vary.

The best source of data on the prevalence of diagnosed diabetes in the UK would appear to be the Health Survey for England. This survey – while it relies on self-reports of a doctor-diagnosis of diabetes – is a large study involving a nationally representative sample of adults. The Health Survey for England suggests that the prevalence of diagnosed diabetes amongst adults (aged 16 and above) is about 3% (Table 1.1). This means that for the whole population (including children) the prevalence of diagnosed diabetes in the UK is about 2.2% (Tables 1.3).

A recent study of the prevalence of diabetes in Tayside also found that the prevalence of diagnosed diabetes for the whole population was about 2.2% (Table 1.2). The Tayside study – while it is only of a small local population – used electronic record linkage of multiple data sources – and is therefore likely to be more comprehensive than previous prevalence studies.

Using the age and sex-specific prevalence rates from the Health Survey for England we estimate that there are about 1.3 million people with diagnosed diabetes in the UK (Table 1.3). This estimate is nearly the same as the Diabetes UK estimate of 1.4 million derived from the Tayside study[1]. About 90% of people with diabetes have Type 2 diabetes (Table 1.3).

It is clear however that not all diabetes is diagnosed. Estimates vary for the percentage of diabetes which is undiagnosed. Diabetes UK estimate that there are around 1 million people in the UK who have diabetes which has yet to be diagnosed[1]. Studies which have examined the total prevalence of diabetes (both diagnosed and undiagnosed) suggest that nearly a half of diabetes may be undiagnosed. For one example see Table 1.4.

People with impaired glucose tolerance are at a greater risk of developing Type 2 diabetes in the future. In a recent randomised controlled trial of lifestyle advice aimed at preventing diabetes in middle-aged, overweight people with impaired glucose tolerance, about a quarter of the control group went on to develop diabetes within four years[2]. Table 1.4 suggests that about 4% of adults without known diabetes have an impaired glucose tolerance.

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 1% of men aged 15-44 years have diagnosed diabetes compared with around 9% of those aged 75 and over (Table 1.1). This pattern is similar in women, although rates are slightly lower at most ages than for men.

Temporal trends

Various studies suggest that the prevalence of diabetes is increasing. The Health Survey for England suggests that the prevalence of diagnosed diabetes rose by 65% for men and by 25% for women between 1991 and 1998 (Table 1.5 and Figure 1.5).

Using the Health Survey for England data (Table 1.5) it is estimated that the there will be about 2 million people with diagnosed diabetes in the UK by the year 2010.

The Audit Commission – following a previous estimate from the International Diabetes Institute, Australia - estimate that the number of people with diabetes (both diagnosed and undiagnosed) will increase to about 3 million in the UK by the year 2010[3,4].

Regional differences

Whether there are significant regional differences in the prevalence of diabetes and whether these follow any pattern is difficult to say. Key Health Statistics from General Practice give statistics on the prevalence of diabetes in England and Wales as recorded by GPs. They do not give separate figures for Type 1 and Type 2 diabetes but for insulin-treated and non-insulin treated diabetes. Table 1.6 suggests that regional differences in the prevalence of non-insulin treated diabetes are small, and that there is no obvious pattern to these differences.

Socio-economic differences

Various sources suggest that the prevalence of diabetes is higher amongst low socio-economic groups. Key Statistics from General Practice indicate that the prevalence of diagnosed non-insulin treated diabetes is 36% higher amongst men living in the most deprived parts of the country than for men living in the most affluent areas. For women it is almost nearly twice as high (Table 1.7 and Figure 1.7).

Ethnic differences

The prevalence of diabetes is much higher amongst some ethnic minority communities than in the general population. The Health Survey for England suggests that for Pakistani and Bangladeshi men and women the prevalence of diagnosed diabetes is at least three times that in the general population. For African Caribbean men it is two and a half times as high and for African Caribbean women it is four times as high (Table 1.8).

International differences

Diabetes is now one of the most common non-communicable diseases globally. The International Diabetes Federation using data from the International Diabetes Institute, Australia, estimates that there are currently about 150 million people with diabetes worldwide (Table 1.9)[5].

Prevalence rates in the UK are average for developed countries (Table 1.9). In general developed countries currently have higher rates than developing countries (Figure 1.9).

It is estimated that by the year 2010 there will be about 221 million people with diabetes worldwide with the greatest increases occurring in developing countries in Asia and Africa where diabetes rates are projected to rise to two or three times those experienced today (Table 1.9).

1. *Diabetes UK (2001) Fact sheet No 2 – Diabetes: the figures. http://www.diabetes.org.uk/*
2. *Tuomilehto J, Lindstrom J, Eriksson JG, Valle TT, Hamalain H, Ilanne-Parikka P, Keinanen-Kiukaanniemi S, Laakso M, Louheranta A, Rastas M, Salminen V, Uusitupa M (2001) Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. New England Journal of Medicine 344: 1343-50.*
3. *Audit Commission (2000) Testing times: a review of diabetes services in England and Wales. Audit Commission: London.*
4. *Amos AF, McCarty DJ, Zimmet P (1997) The rising global burden of diabetes and its complications: estimates and projections to the year 2010. Diabetic Medicine 14: S7-S85.*
5. *See also International Diabetes Federation (2000) Diabetes Atlas 2000. IDF: Brussels. This publication presents new world-wide estimates of numbers of people with diabetes from the International Diabetes Institute. The results of the IDI's earlier study are presented here because it gives projections to the year 2010, but the two studies give very similar figures for current rates.*

Table 1.1 Prevalence of diagnosed diabetes by sex and age, 1998, England

	All ages %	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75 & over %
MEN	3.3	0.1	0.7	1.6	2.9	5.8	7.0	8.7
Base	*7,193*	*875*	*1,338*	*1,305*	*1,289*	*987*	*837*	*562*
WOMEN	2.5	0.8	0.7	0.9	1.6	3.1	6.6	6.6
Base	*8,715*	*1,006*	*1,630*	*1,573*	*1,484*	*1,148*	*967*	*907*

Self-reported diagnosis of either Type 1 or Type 2 diabetes.

Source: Joint Health Surveys Unit (1999) Health Survey for England 1998. The Stationery Office: London.

Table 1.2 Prevalence of diagnosed diabetes by age, 1999, Tayside

	All ages %	0-14 %	15-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75-85 %	85 & over %
Type 1	0.27	0.14	0.41	0.47	0.45	0.29	0.18	0.06	0.03	0.00
Type 2	1.90	0.00	0.01	0.10	0.58	1.70	4.20	6.60	7.06	5.10
Total	**2.17**	**0.14**	**0.42**	**0.57**	**1.03**	**2.00**	**4.40**	**6.70**	**7.10**	**5.10**
Population	*385,184*	*64,113*	*49,718*	*55,020*	*56,840*	*51,213*	*41,264*	*35,928*	*22,615*	*8,473*

Throughout this supplement, table column and/or row percentages may add up to 99% or 101% because of rounding.

Source: Tayside Regional Diabetes Network (1999) Annual Report: Demographics. http://www.diabetes-healthnet.ac.uk

Table 1.3 Estimates of numbers of people with diabetes by sex and age, 1999, United Kingdom

	Age group	Total population in the UK (000s)	Prevalence of all diabetes	Numbers of people with diabetes in the UK (000s)	Numbers of people with Type 1 diabetes in the UK (000s)	Numbers of people with Type 2 diabetes in the UK (000s)	Proportion with Type 2 (%)
MEN	0-14	5,840	0.1	8	8	0	0.00
	15-44	12,766	0.8	102	66	36	0.35
	45-64	6,848	4.4	298	24	274	0.92
	65-74	2,284	7.0	160	2	158	0.99
	75 & over	1,559	8.7	136	0	136	1.00
	Total	**29,298**	**2.4**	**704**	**99**	**605**	**0.86**
WOMEN	0-14	5,552	0.1	8	8	0	0.00
	15-44	12,252	0.8	98	64	34	0.35
	45-64	6,952	2.4	163	13	150	0.92
	65-74	2,647	6.6	175	2	173	0.99
	75 & over	2,802	6.6	185	0	185	1.00
	Total	**30,204**	**2.1**	**629**	**88**	**541**	**0.86**
BOTH	0-14	11,392	0.1	16	16	0	0.00
	15-44	25,018	0.8	200	130	70	0.35
	45-64	13,800	3.4	461	37	424	0.92
	65-74	4,931	6.8	335	3	331	0.99
	75 & over	4,361	7.7	321	0	321	1.00
	Total	**59,502**	**2.2**	**1333**	**187**	**1146**	**0.86**

Prevalence rates 0-14 and proportions with Type 2 diabetes from Tayside Regional Diabetes Network; prevalence rates 15+ from Health Survey for England; population data from Coronary heart disease statistics Morbidity supplement, Appendix 3.

The estimates for the number of people with diabetes in the UK were derived from multiplying the age-specific prevalence rates by the numbers in the population.

Sources: *Tayside Regional Diabetes Network (1999) Annual Report: Demographics. http://www.diabetes-healthnet.ac.uk*
Joint Health Surveys Unit (1999) Health Survey for England 1998. The Stationery Office: London.
Rayner M, Petersen S, Mober M, Wright L, Lampe F (2001) Coronary heart disease statistics. Morbidity supplement. British Heart Foundation: London.

Table 1.4 Prevalence of diagnosed and undiagnosed diabetes and impaired glucose tolerance, by sex and age, 1993, North London

	MEN			WOMEN		
Age group	**Diagnosed diabetes**	**Undiagnosed diabetes**	**Impaired glucose tolerance in subjects without known diabetes**	**Diagnosed diabetes**	**Undiagnosed diabetes**	**Impaired glucose tolerance in subjects without known diabetes**
	%	%	%	%	%	%
40-44	0.9	0	3.9	0.8	0.9	1.3
45-49	1.2	0	4.0	0.8	1.7	2.3
50-54	2.5	2.7	0	0.6	1.9	1.9
55-59	4.7	1.9	2.9	3.6	1.4	6.2
60-64	8.7	5.6	4.6	4.1	4.1	4.8
65-69	8.1	2.2	6.5	6.3	3.2	5.6
70-75	5.1	6.3	8.4	5.8	3.6	3.6
Total	**3.4**	**2.3**	**4.2**	**2.6**	**2.2**	**3.4**

Source: *Yudkin JS, Forrest RD, Jackson CA, Burnett SD, Gould MM (1993) The prevalence of diabetes and impaired glucose tolerance in a British population. Diabetes Care 16: 1530.*

Table 1.5 Prevalence of diagnosed diabetes by sex and age, 1991-1998, 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
Base 1998	*7,193*	*875*	*1,338*	*1,305*	*1,289*	*987*	*837*	*562*
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
Base 1998	*8,715*	*1,006*	*1,630*	*1,573*	*1,484*	*1,148*	*967*	*907*

Self-reported diagnosis of either Type 1 or Type 2 diabetes.

Source: Joint Health Surveys Unit (1999) Health Survey for England 1998. The Stationery Office: London.

Figure 1.5 Prevalence of diagnosed diabetes amongst adults aged 16 and over, 1991-1998, England

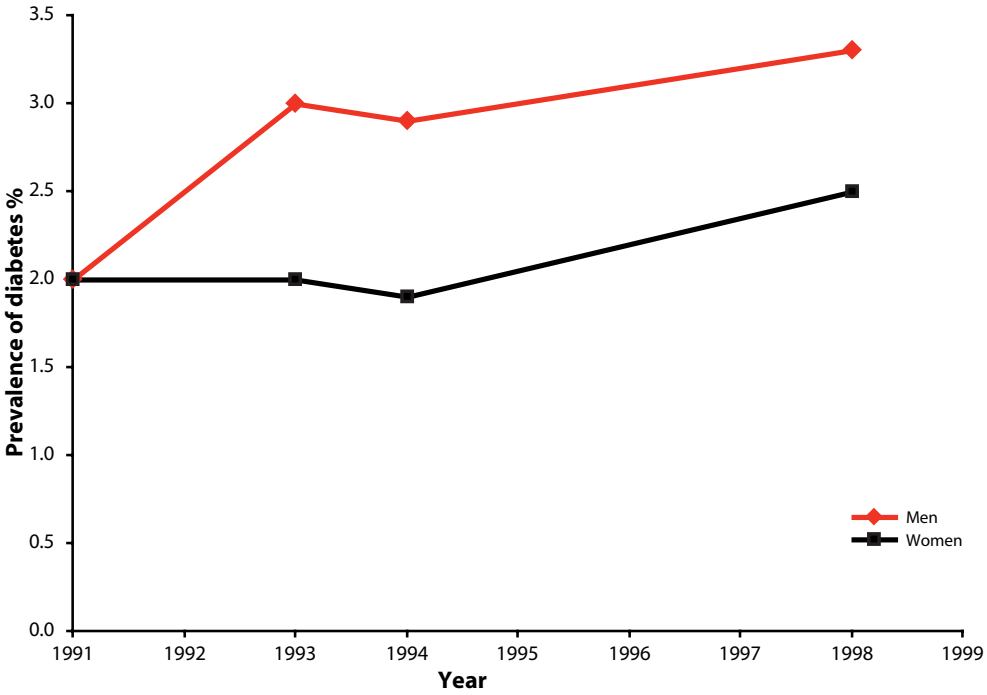


Table 1.6 Prevalence of non-insulin treated diabetes by sex, age and region, 1994/98, England and Wales

		Number of cases	All ages*	0-4	5-15	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85 & over
			%	%	%	%	%	%	%	%	%	%	%
MEN	Northern and Yorkshire	3,430	0.90	0.00	0.00	0.01	0.04	0.26	1.02	2.72	4.06	3.59	2.76
	Trent	3,315	0.95	0.00	0.00	0.01	0.05	0.23	1.06	2.80	4.09	4.11	4.52
	Anglia and Oxford	2,561	0.95	0.00	0.00	0.00	0.08	0.27	0.98	2.74	4.18	4.70	3.54
	North Thames	2,023	1.13	0.00	0.00	0.01	0.07	0.50	1.36	3.18	4.64	4.40	5.14
	South Thames	2,120	0.88	0.00	0.00	0.00	0.07	0.24	0.96	2.46	3.78	4.76	2.72
	South and West	4,700	0.99	0.00	0.00	0.01	0.05	0.33	0.93	2.76	4.72	4.45	3.65
	West Midlands	4,001	1.01	0.00	0.00	0.01	0.05	0.40	1.13	2.95	4.04	4.42	4.83
	North West	5,121	1.03	0.00	0.00	0.01	0.05	0.30	1.12	3.12	4.16	4.76	4.55
	England	27,271	0.98	0.00	0.00	0.01	0.05	0.31	1.06	2.85	4.22	4.38	3.93
	Wales	1,726	1.11	0.00	0.00	0.01	0.07	0.41	1.34	3.23	4.53	4.70	4.35
	England and Wales	28,997	0.99	0.00	0.00	0.01	0.05	0.32	1.07	2.87	4.23	4.40	3.95
WOMEN	Northern and Yorkshire	3,076	0.66	0.00	0.01	0.00	0.05	0.25	0.74	1.95	2.67	2.97	2.79
	Trent	2,996	0.72	0.00	0.00	0.02	0.05	0.23	0.67	1.92	3.29	3.70	3.27
	Anglia and Oxford	2,414	0.73	0.00	0.00	0.01	0.08	0.16	0.62	1.80	3.34	4.22	4.53
	North Thames	1,650	0.76	0.00	0.00	0.01	0.06	0.24	0.95	2.29	2.97	3.23	2.18
	South Thames	1,822	0.60	0.00	0.00	0.00	0.06	0.18	0.68	1.43	2.60	3.50	3.05
	South and West	4,118	0.69	0.00	0.00	0.02	0.06	0.22	0.57	1.82	3.20	3.66	3.40
	West Midlands	3,672	0.80	0.00	0.00	0.01	0.06	0.34	0.83	2.33	3.23	3.59	3.29
	North West	4,565	0.74	0.00	0.00	0.01	0.05	0.26	0.78	2.10	3.21	3.53	2.85
	England	24,313	0.71	0.00	0.00	0.01	0.06	0.24	0.72	1.97	3.09	3.54	3.17
	Wales	1,521	0.78	0.00	0.01	0.02	0.03	0.21	0.71	2.45	3.46	3.49	3.43
	England and Wales	25,834	0.72	0.00	0.00	0.01	0.06	0.24	0.72	1.99	3.11	3.54	3.19

**Age-standardised using the European Standard Population.*

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

Table 1.7 Prevalence of non-insulin treated diabetes by sex, age and deprivation category, 1994/98, England and Wales

	Deprivation category	Number of cases	All ages*	0-4	5-15	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85 & over
			%	%	%	%	%	%	%	%	%	%	%
MEN	Q1: least deprived	3,466	0.86	0.00	0.00	0.01	0.04	0.22	0.85	2.36	3.74	4.76	4.65
	Q2	5,430	0.90	0.00	0.00	0.00	0.06	0.27	0.92	2.33	4.29	4.69	3.48
	Q3	6,752	0.95	0.00	0.00	0.01	0.05	0.27	0.99	2.82	4.24	4.11	3.80
	Q4	6,818	1.01	0.00	0.00	0.00	0.06	0.33	1.14	3.04	4.18	4.31	4.37
	Q5: most deprived	6,451	1.17	0.00	0.00	0.01	0.07	0.47	1.44	3.65	4.55	4.26	3.64
	All	28,997	0.99	0.00	0.00	0.01	0.05	0.32	1.07	2.87	4.23	4.40	3.95
WOMEN	Q1: least deprived	2,456	0.50	0.00	0.00	0.01	0.02	0.13	0.44	1.23	2.30	3.06	3.54
	Q2	4,974	0.66	0.00	0.00	0.01	0.05	0.17	0.55	1.69	3.21	3.67	3.25
	Q3	6,204	0.71	0.00	0.01	0.01	0.06	0.20	0.69	1.94	3.11	3.61	3.24
	Q4	6,304	0.74	0.00	0.00	0.01	0.04	0.27	0.76	2.11	3.05	3.69	3.30
	Q5: most deprived	5,864	0.91	0.00	0.00	0.01	0.08	0.39	1.13	2.76	3.62	3.43	2.68
	All	25,834	0.72	0.00	0.00	0.01	0.06	0.24	0.72	1.99	3.11	3.54	3.19

** Age-standardised using the European Standard Population; deprivation categories were derived frrom quintiles of Townsend Material Deprivation Scores for the wards in which general practices were located.*

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

Figure 1.7 Prevalence of non-insulin treated diabetes by deprivation category, 1994/98, England and Wales

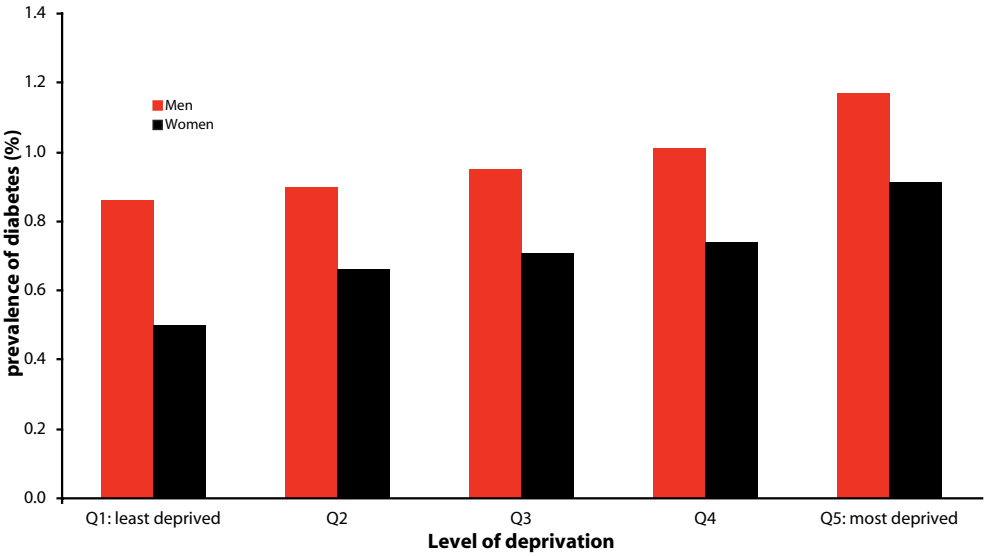


Table 1.8 Prevalence of diagnosed diabetes by sex, age and ethnic group, 1999, England

		Base *	All ages **	16-34	35-54	55 & over
			%	%	%	%
MEN	Black Caribbean	*547*	8.3	1.9	3.2	17.6
	Indian	*626*	9.8	0.7	8.0	19.2
	Pakistani	*620*	17.9	0.8	9.6	39.0
	Bangladeshi	*533*	19.0	2.4	10.6	30.6
	Chinese	*301*	4.8	-	2.2	16.1
	Irish	*537*	4.5	1.6	0.8	11.8
	General population	*7,198*	3.3	0.5	2.2	6.9
WOMEN	Black Caribbean	*748*	10.5	0.4	3.9	25.7
	Indian	*657*	7.2	0.6	4.4	15.3
	Pakistani	*643*	14.0	1.1	7.4	28.3
	Bangladeshi	*563*	14.6	0.4	12.1	26.0
	Chinese	*361*	5.3	1.6	0.7	11.8
	Irish	*708*	2.6	-	1.9	5.9
	General population	*8,715*	2.5	1.3	3.4	5.3

* *Unweighted base;*

** *Age standardised prevalence rates (Standardised risk ratios x prevalence in general population).*

Source: *Joint Health Surveys Unit (2001) Health Survey for England. The Health of Minority Ethnic Groups 1999. The Stationery Office: London.*

Figure 1.8 Prevalence of diagnosed diabetes by ethnic group, 1999, England

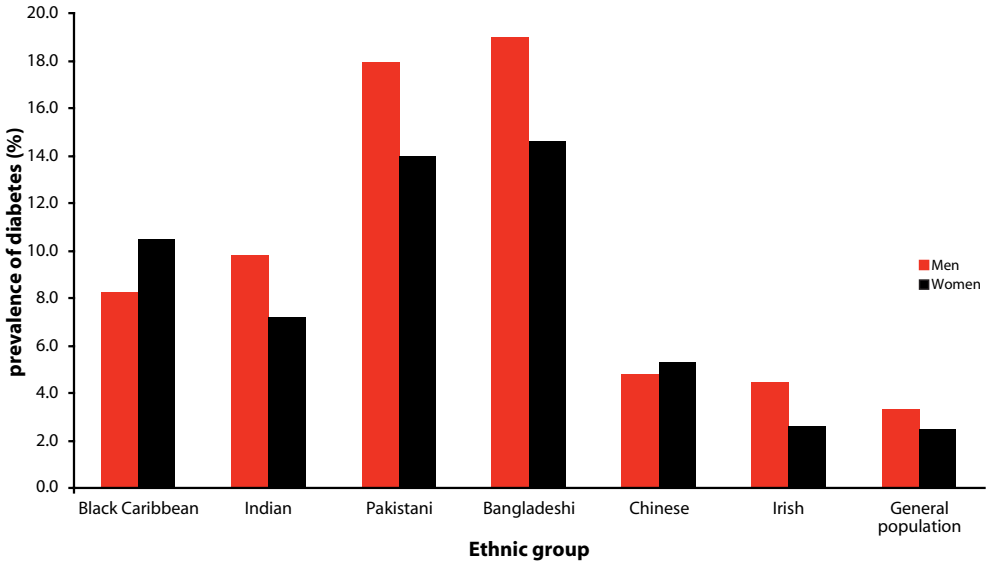


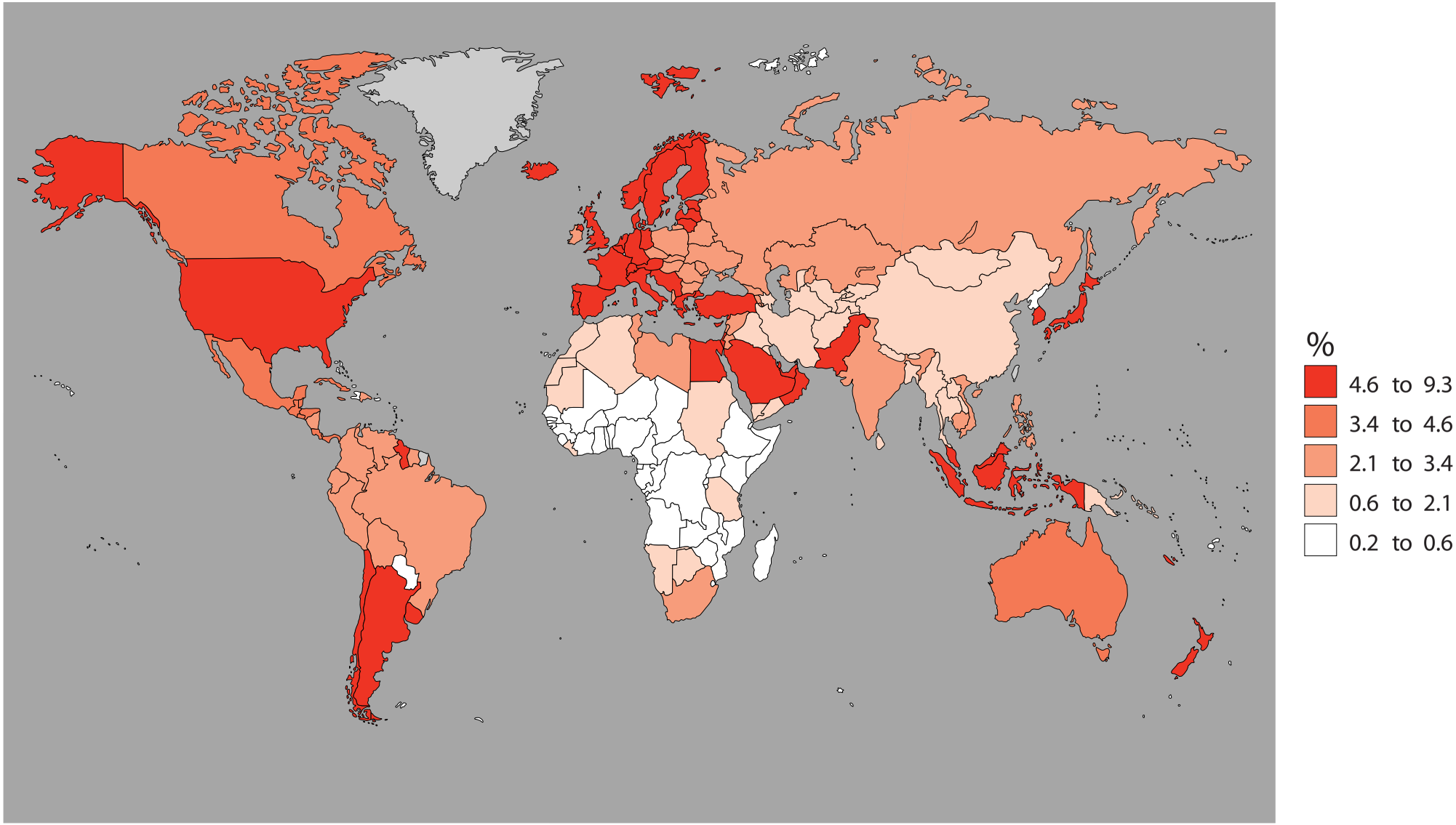
Table 1.9 Numbers of people with diabetes, 2000 and 2010, selected countries

	Population (000s)	2000 Type 1 (000s)	2000 Type 2 (000s)	2000 Total (000s)	Crude prevalence %	2010 Type 1 (000s)	2010 Type 2 (000s)	2010 Total (000s)
World	**5,697,038**	**4,423**	**146,804**	**151,222**	**2.7**	**5,446**	**215,272**	**220,718**
North Africa	**158,078**	**103**	**5,383**	**5,485**	**3.5**	**154.1**	**8,098.9**	**8,253.0**
Algeria	28,109	27	545	572	2.0	38.6	1,083.9	1,122.5
Egypt	62,096	36	3,549	3,586	5.8	53.5	4,810.8	4,864.3
Libyan Arab Jamahiriya	5,407	9	136	145	2.7	18.9	267.6	286.5
Morocco	26,524	15	534	549	2.1	21.2	972.5	993.7
Sudan	26,707	5	396	401	1.5	9.3	542.1	551.4
Tunisia	8,987	10	218	228	2.5	12.6	416.3	428.9
Western Sahara	248	-	4	4	1.6	-	5.7	5.7
Western Africa	**221,589**	**7**	**1,194**	**1,201**	**0.5**	**13.7**	**1,678.1**	**1,691.8**
Benin	5,720	0	30	30	0.5	0.1	49.5	49.6
Burkina Faso	11,087	0	52	52	0.5	0.2	75.3	75.5
Cape Verde	406	0	2	2	0.6	0.2	3.5	3.7
Cote d'Ivoire	14,230	1	76	77	0.5	0.7	126.0	126.7
Gambia	1,169	-	7	7	0.6	-	10.0	10.0
Ghana	18,338	2	101	103	0.6	2.7	165.7	168.4
Guinea	7,614	0	36	36	0.5	0.1	55.1	55.2
Guinea-Bissau	1,112	-	7	7	0.6	-	8.8	8.8
Liberia	2,467	0	18	18	0.7	0.2	30.0	30.2
Mali	11,480	0	53	54	0.5	0.7	80.0	80.7
Mauritania	2,392	-	14	14	0.6	-	22.5	22.5
Niger	9,788	0	43	43	0.4	1.2	62.0	63.2
Nigeria	118,369	4	661	665	0.6	7.1	842.3	849.4
Senegal	8,672	0	47	47	0.5	0.1	79.1	79.2
Sierra Leone	4,428	-	25	25	0.6	0.1	35.5	35.6
Togo	4,317	0	22	23	0.5	0.3	32.8	33.1
Eastern Africa	**221,242**	**6**	**1,261**	**1,268**	**0.6**	**9.5**	**1,888.1**	**1,897.6**
Burundi	6,064	0	28	28	0.5	0.1	37.6	37.7
Comoros	612	-	3	3	0.5	0.1	8.0	8.1
Djibouti	601	-	8	8	1.3	-	13.9	13.9
Eritrea	3,171	-	18	18	0.6	-	24.6	24.6
Ethiopia	56,404	1	283	284	0.5	1.1	407.1	408.2
Kenya	27,150	2	131	133	0.5	3.9	198.5	202.4
Madagascar	14,874	1	77	77	0.5	1.0	119.8	120.8
Malawi	9,673	0	46	46	0.5	0.2	62.6	62.8
Mauritius	1,117	1	91	91	8.2	0.5	117.8	118.3
Mozambique	17,260	0	97	97	0.6	0.3	139.2	139.5
Reunion	655	0	40	40	6.1	0.4	69.6	70.0
Rwanda	5,184	0	29	29	0.6	0.1	38.4	38.5
Somalia	9,491	0	50	50	0.5	0.2	75.2	75.4
Uganda	19,689	0	81	81	0.4	0.4	109.1	109.5
United Rep. of Tanzania	30,026	0	185	185	0.6	0.5	323.0	323.5
Zambia	8,081	0	40	40	0.5	0.1	61.3	61.4
Zimbabwe	11,190	1	56	57	0.5	0.6	82.4	83.0
Middle Africa	**83,138**	**3**	**333**	**335**	**0.4**	**4.3**	**530.9**	**535.2**
Angola	10,816	0	42	42	0.4	0.2	70.1	70.3
Cameroon	13,192	1	56	57	0.4	0.8	89.9	90.7
Central African Rep.	3,273	-	15	15	0.5	-	21.8	21.8
Chad	6,335	0	28	28	0.4	0.1	42.6	42.7
Congo	2,593	-	11	11	0.4	-	15.6	15.6
Equatorial Guinea	400	-	2	2	0.5	-	2.7	2.7
Gabon	1,076	-	6	6	0.6	0.1	8.3	8.4
Zaire	45,453	2	173	175	0.4	3.1	279.9	283.0
Southern Africa	**47,333**	**24**	**1,100**	**1,123**	**2.4**	**37.8**	**1,737.0**	**1,774.8**
Botswana	1,450	0	16	16	1.1	0.4	27.4	27.8
Lesotho	2,027	0	22	23	1.1	0.7	36.0	36.7
Namibia	1,536	0	21	21	1.3	0.2	34.4	34.6
South Africa	41,464	23	1,032	1,055	2.5	36.2	1,624.0	1,660.2
Swaziland	856	0	9	9	1.1	0.3	15.2	15.5
Western Asia	**167,687**	**162**	**6,150**	**6,312**	**3.8**	**222.3**	**11,130.2**	**11,352.5**
Armenia	3,632	4	74	77	2.1	3.5	105.4	108.9
Azerbaijan	7,531	10	123	133	1.8	11.5	196.5	208.0
Bahrain	557	1	40	40	7.2	0.7	58.2	58.9
Cyprus	745	2	30	33	4.4	2.7	34.8	37.5
Gaza Strip	792	1	6	8	1.0	2.3	15.1	17.4
Georgia	5,450	6	146	152	2.8	6.4	180.2	186.6
Iraq	20,095	14	305	319	1.6	24.7	501.8	526.5
Israel	5,525	10	231	241	4.4	10.8	299.1	309.9
Jordan	5,373	9	162	171	3.2	15.3	369.7	385.0
Kuwait	1,691	9	97	106	6.3	9.7	162.1	171.8
Lebanon	3,009	2	124	127	4.2	2.3	252.2	254.5
Oman	2,207	2	111	112	5.1	2.7	162.7	165.4
Qatar	548	0	48	49	8.9	0.5	63.2	63.7
Saudi Arabia	18,255	11	1,131	1,142	6.3	18.2	1,785.5	1,803.7
Syrian Arab Rep.	14,203	18	420	438	3.1	26.9	961.0	987.9
Turkey	60,838	59	2,750	2,809	4.6	78.2	5,404.7	5,482.9
United Arab Emirates	2,210	2	179	181	8.2	1.8	243.2	245.0
Yemen	15,026	2	173	175	1.2	4.1	334.8	338.9
South-Central Asia	**1,366,865**	**1,218**	**35,056**	**36,273**	**2.7**	**1,746.3**	**55,733.4**	**57,479.7**
Afghanistan	19,661	1	295	296	1.5	1.4	530.5	531.9
Bangladesh	118,229	5	1,786	1,791	1.5	8.5	2,780.1	2,788.6
Bhutan	1,770	-	25	25	1.4	-	38.0	38.0
India	929,004	1,053	23,588	24,641	2.7	1,508.2	37,976.6	39,484.8
Iran (Islamic Rep. of)	68,364	89	915	1,004	1.5	132.6	1,559.1	1,691.7
Kazakhstan	16,817	14	341	356	2.1	17.7	511.0	528.7
Kyrgyzstan	4,460	5	65	69	1.6	5.8	110.2	116.0
Maldives	254	-	3	3	1.2	0.1	4.5	4.6
Nepal	21,456	0	294	294	1.4	0.8	409.0	409.8
Pakistan	136,257	8	6,986	6,993	5.1	13.2	10,554.2	10,567.4
Sri Lanka	17,928	5	312	317	1.8	5.3	420.3	425.6
Tajikistan	5,828	7	73	80	1.4	9.8	141.1	150.9
Turkmenistan	4,075	5	58	63	1.5	6.5	107.0	113.5
Uzbekistan	22,762	27	317	343	1.5	36.4	591.8	628.2
South-East Asia	**481,920**	**74**	**12,312**	**12,386**	**2.6**	**92.8**	**19,384.3**	**19,477.1**
Brunei Darussalam	293	0	14	14	4.8	0.2	28.8	29.0
Cambodia	10,024	0	72	72	0.7	0.2	113.0	113.2
East Timor	814	-	22	22	2.7	-	33.9	33.9
Indonesia	197,460	35	6,676	6,710	3.4	50.7	9,773.4	9,824.1
Lao (People's Dem. Rep.)	4,882	-	35	35	0.7	0.1	56.8	56.9
Malaysia	20,140	10	835	845	4.2	10.8	1,435.2	1,446.0
Myanmar (Burma)	45,106	1	403	404	0.9	1.6	638.0	639.6
Philippines	67,839	6	2,252	2,259	3.3	6.9	3,878.8	3,885.7
Singapore	3,327	1	245	247	7.4	1.1	334.4	335.5
Thailand	58,242	13	1,126	1,138	2.0	11.4	2,095.0	2,106.4
Vietnam	73,793	8	632	640	0.9	9.8	997.0	1,006.8

	Population (000s)	2000 Type 1 (000s)	Type 2 (000s)	Total (000s)	Crude prevalence %	2010 Type 1 (000s)	Type 2 (000s)	Total (000s)
East Asia	**1,421,314**	**154**	**29,385**	**29,539**	**2.1**	**179.6**	**43,808.2**	**43,987.8**
China (Dem. People's Rep. of)	1,220,224	96	19,335	19,431	1.6	115.9	30,870.1	30,986.0
Korea	220,097	4	456	459	0.2	4.4	848.7	853.1
Hong Kong	6,123	3	407	410	6.7	3.2	544.1	547.3
Japan	125,068	45	7,121	7,165	5.7	48.5	8,708.6	8,757.1
Macau	430	-	20	20	4.7	-	42.2	42.2
Mongolia	2,463	0	21	22	0.9	0.2	32.8	33.0
Republic of Korea	44,909	7	2,026	2,032	4.5	7.4	2,761.7	2,769.1
North America	**296,517**	**1,019**	**13,174**	**14,193**	**4.8**	**1,174.8**	**16,360.2**	**17,535.0**
Canada	29,402	77	1,207	1,283	4.4	87.0	1,506.1	1,593.1
United States	267,115	942	11,967	12,910	4.8	1,087.8	14,854.1	15,941.9
Central America	**123,473**	**19**	**4,918**	**4,938**	**4.0**	**22.5**	**7,364.0**	**7,386.5**
Belize	213	-	7	7	3.3	0.1	11.8	11.9
Costa Rica	3,424	1	154	155	4.5	1.2	230.9	232.1
El Salvador	5,662	1	218	219	3.9	1.7	322.4	324.1
Guatemala	10,621	1	367	369	3.5	2.4	551.7	554.1
Honduras	5,654	1	192	193	3.4	2.0	300.4	302.4
Mexico	91,145	13	3,725	3,738	4.1	12.8	5,554.6	5,567.4
Nicaragua	4,123	1	135	136	3.3	1.4	215.2	216.6
Panama	2,631	1	120	121	4.6	0.9	177.0	177.9
Caribbean	**34,904**	**34**	**1,482**	**1,517**	**4.3**	**38.3**	**1,864.6**	**1,902.9**
Bahamas	279	0	13	13	4.6	0.3	19.0	19.3
Barbados	260	0	23	23	9.0	0.3	26.2	26.5
Cuba	10,964	11	582	592	5.4	9.9	722.9	732.8
Dominican Republic	7,823	8	247	254	3.2	9.9	297.0	306.9
Guadeloupe	424	1	23	23	5.5	0.6	31.8	32.4
Haiti	7,124	1	79	80	1.1	1.2	147.8	149.0
Jamaica	2,468	3	178	181	7.4	3.7	217.8	221.5
Martinique	380	1	35	35	9.3	0.5	39.7	40.2
Netherlands Antilles	194	0	17	17	8.8	0.3	20.7	21.0
Puerto Rico	3,701	8	218	226	6.1	9.8	254.8	264.6
Trinidad and Tobago	1,287	2	70	71	5.5	1.8	86.9	88.7
Southern America	**317,327**	**336**	**8,776**	**9,112**	**2.9**	**418.4**	**12,883.6**	**13,252.0**
Argentina	34,768	49	1,201	1,250	3.6	52.6	1,471.4	1,524.0
Bolivia	7,414	1	153	154	2.1	2.3	263.4	265.7
Brazil	159,014	213	4,320	4,533	2.9	275.0	6,121.8	6,396.8
Chile	14,210	7	489	497	3.5	7.4	724.9	732.3
Colombia	35,814	26	912	938	2.6	33.8	1,530.7	1,564.5
Ecuador	11,460	9	259	267	2.3	11.7	465.8	477.5
Guyana	830	0	28	28	3.4	0.2	39.4	39.6
Paraguay	4,828	2	92	94	2.0	3.0	180.8	183.8
Peru	23,532	2	605	607	2.6	2.5	964.3	966.8
Surinam	427	0	14	14	3.3	0.4	19.0	19.4
Uruguay	3,186	6	113	119	3.7	7.0	132.8	139.8
Venezuela	21,844	21	590	611	2.8	22.5	919.3	941.8
Northern Europe	**93,102**	**336**	**3,226**	**3,562**	**3.8**	**329.8**	**4,601.8**	**4,931.6**
Denmark	5,223	25	195	220	4.2	26.0	241.4	267.4
Estonia	1,487	2	66	68	4.5	2.6	65.3	67.9
Finland	5,107	35	237	273	5.3	34.2	238.9	273.1
Iceland	268	1	10	11	4.0	0.7	15.1	15.8
Ireland	3,546	16	87	103	2.9	14.8	147.0	161.8
Latvia	2,536	2	88	90	3.6	2.7	109.2	111.9
Lithuania	3,736	5	125	129	3.5	5.0	165.1	170.1
Norway	4,332	19	148	167	3.9	18.5	194.8	213.3
Sweden	8,788	42	406	449	5.1	41.9	540.6	582.5
United Kingdom	58,079	190	1,863	2,053	3.5	183.4	2,884.4	3,067.8
Western Europe	**180,925**	**342**	**6,755**	**7,097**	**3.9**	**331.5**	**9,125.4**	**9,456.9**
Austria	8,045	13	310	323	4.0	12.5	408.8	421.3
Belgium	10,127	19	339	359	3.5	18.7	498.3	517.0
France	58,104	89	1,876	1,965	3.4	85.4	2,784.3	2,869.7
Germany	81,594	174	3,354	3,528	4.3	168.8	4,244.7	4,413.5
Luxembourg	407	1	16	17	4.2	1.1	20.9	22.0
Netherlands	15,482	36	574	610	3.9	34.9	787.0	821.9
Switzerland	7,166	10	285	295	4.1	10.1	381.4	391.5
Eastern Europe	**310,505**	**279**	**8,940**	**9,218**	**3.0**	**365.6**	**10,614.7**	**10,980.3**
Belarus	10,352	14	300	314	3.0	15.4	361.0	376.4
Bulgaria	8,509	9	272	281	3.3	10.4	313.5	323.9
Czech Rep.	10,263	16	293	309	3.0	17.3	358.8	376.1
Hungary	10,106	10	307	317	3.1	13.5	352.1	365.6
Poland	38,556	37	1,042	1,088	2.8	40.7	1,299.7	1,340.4
Rep.of Moldova	4,437	3	107	110	2.5	3.4	133.6	137.0
Romania	22,728	11	662	673	3.0	14.8	792.6	807.4
Russian Federation	148,460	159	4,210	4,369	2.9	227.1	4,911.6	5,138.7
Slovakia	5,338	9	135	144	2.7	10.3	170.9	181.2
Ukraine	51,756	11	1,612	1,623	3.1	12.7	1,920.9	1,933.6
Southern Europe	**143,255**	**225**	**6,405**	**6,630**	**4.6**	**218.0**	**7,278.5**	**7,496.5**
Albania	3,383	2	74	76	2.2	2.2	121.2	123.4
Bosnia and Herzegovina	3,569	6	131	137	3.8	6.1	198.6	204.7
Croatia	4,505	5	165	171	3.8	5.9	214.1	220.0
Greece	10,454	12	514	526	5.0	11.3	568.3	579.6
Italy	57,204	82	2,824	2,906	5.1	76.7	3,172.6	3,249.3
Malta	366	1	22	23	6.4	1.2	26.6	27.8
Portugal	9,815	14	445	458	4.7	14.4	463.4	477.8
Slovenia	1,925	2	69	72	3.7	2.2	93.2	95.4
Spain	39,627	84	1,744	1,829	4.6	79.7	1,859.4	1,939.1
The FYR Macedonia	2,156	1	65	66	3.1	1.2	97.4	98.6
Yugoslavia	10,251	15	352	366	3.6	17.1	463.7	480.8
Oceania	**27,774**	**83**	**956**	**1,039**	**3.7**	**87.0**	**1,241.0**	**1,328.0**
Australia	17,866	69	703	772	4.3	71.8	875.5	947.3
Fiji	784	-	46	46	5.8	-	69.6	69.6
French Polynesia	219	-	13	13	5.8	-	18.5	18.5
Guam	150	-	7	7	4.8	-	13.2	13.2
New Caledonia	181	-	5	5	2.9	-	8.9	8.9
New Zealand	3,561	14	133	147	4.1	15.2	165.2	180.4
Papua New Guinea	4,301	-	35	35	0.8	-	62.4	62.4
Samoa	165	-	6	6	3.8	-	10.0	10.0
Solomon Islands	378	-	3	3	0.7	-	6.0	6.0
Vanuatu	169	-	5	5	3.0	-	11.7	11.7

Source: *Amos AF, McCarty DJ, Zimmet P (1997) The rising global burden of diabetes and its complications: estimates and projections to the year 2010. Diabetic Medicine 14: S7-S85.*

Figure 1.9 Prevalence of diabetes, 2000, the World



2. Mortality from diabetes

The number of deaths attributed to diabetes in national mortality statistics is likely to be a huge underestimate of the actual number of deaths caused by diabetes (Table 2.1). This is because other diseases caused by diabetes - such as CVD - are normally given as the cause of death in the death certificates of people with diabetes.

Various studies have sought to determine the total number of deaths attributable to diabetes. The best known study is that of the World Health Organization's Global Burden of Disease Project[1]. This suggests that in Established Market Economies such as the UK there are about five times as many deaths indirectly attributable to diabetes as directly attributable. This would mean that there are about 33,000 deaths a year attributable to diabetes – about one in seven of all deaths[2].

CVD is by far the most common cause of death amongst people with diabetes. For example in the British Diabetic Association Cohort Study – a study of 23,752 patients with insulin treated diabetes diagnosed under the age of 30 years from throughout the UK[3]- 63% of deaths in men with diabetes aged 40-59 were from CVD compared with 35% of men in the general population. For women with diabetes aged 40-59, 52% of deaths were from CVD compared with 20% in the general population (Table 2.2, Figures 2.2a, 2.2b, 2.2c and 2.2d)[4].

In the British Diabetic Association Cohort Study men with diabetes aged 40-59 were three times more likely to die of any cause and five times more likely to die of CVD than people without diabetes. Women with diabetes were four times more likely to die of any cause and eight times more likely to die of CVD[5].

1. *Murray CJL, Lopez AD (1996) The Global Burden of Disease. WHO: Geneva.*
2. *I.e. 6,697 (from Table 2.1) multiplied by five.*
3. *Laing SP, Swerdlow AJ, Slater SD, Botha JL, Burden AC, Waugh NR, Smith AWM, Hill RD, Bingley PJ, Patterson CC, Qiao Z, Keen H (1999) The British Diabetic Association Cohort Study, 1: all-cause mortality in patients with insulin-treated diabetes mellitus. Diabetic Medicine 16: 459-465.*
4. *Note that in Table 2.2 and in Tables 4.1 and 4.2 the general population data were collected in a different way, and comparisons with the study data should therefore be treated with caution.*
5. *Laing SP, Swerdlow AJ, Slater SD, Botha JL, Burden AC, Waugh NR, Smith AWM, Hill RD, Bingley PJ, Paterson CC, Qiao Z, Keen H (1999) The British Diabetic Association Cohort Study, II: cause-specific mortality in patients with insulin-treated diabetes mellitus. Diabetic Medicine 16: 466-471.*

Table 2.1 Deaths by cause, sex and age, 1999, United Kingdom

		All ages	Under 35	35-44	45-54	55-64	65-74	75 & over
All causes	Men	298,317	10,513	6,857	15,753	32,996	73,244	158,954
	Women	329,675	5,463	4,337	10,340	20,878	51,978	236,679
	Total	**627,992**	**15,976**	**11,194**	**26,093**	**53,874**	**125,222**	**395,633**
All diseases of the circulatory system (390-459)	Men	118,887	549	1,556	5,342	12,955	31,084	67,401
	Women	129,741	360	650	1,920	5,293	18,708	102,810
	Total	**248,628**	**909**	**2,206**	**7,262**	**18,248**	**49,792**	**170,211**
Coronary heart disease (410-414)	Men	71,773	131	936	3,747	9,285	20,429	37,245
	Women	59,188	40	205	783	2,813	10,141	45,206
	Total	**130,961**	**171**	**1,141**	**4,530**	**12,098**	**30,570**	**82,451**
Stroke (430-438)	Men	23,719	125	246	683	1,654	4,993	16,018
	Women	40,510	118	238	595	1,298	4,492	33,769
	Total	**64,229**	**243**	**484**	**1,278**	**2,952**	**9,485**	**49,787**
Peripheral vascular disease (443)	Men	1,334	1	3	13	78	296	944
	Women	1,876	2	3	11	44	174	1,642
	Total	**3,210**	**3**	**6**	**24**	**122**	**470**	**2,586**
Diabetes (250)	Men	3,173	52	51	160	386	885	1,633
	Women	3,524	27	41	79	270	672	2,435
	Total	**6,697**	**79**	**98**	**237**	**656**	**1,557**	**4,068**
Renal disease (581-586)	Men	1,764	17	25	41	89	349	1,243
	Women	1,883	19	12	24	49	233	1,546
	Total	**3,647**	**36**	**37**	**65**	**138**	**582**	**2,789**
Cancer (140-239)	Men	79,444	871	1,188	4,976	12,372	24,859	35,178
	Women	74,646	827	1,869	5,489	10,367	19,064	37,030
	Total	**154,090**	**1,698**	**3,057**	**10,465**	**22,739**	**43,923**	**72,208**
Colo-rectal cancer (153, 154)	Men	8,536	33	90	493	1,359	2,730	3,831
	Women	8,112	27	108	367	850	1,892	4,868
	Total	**16,648**	**60**	**198**	**860**	**2,209**	**4,622**	**8,699**
Lung cancer (162)	Men	21,038	12	159	1,110	3,513	7,627	8,617
	Women	13,051	10	147	794	1,975	4,434	5,691
	Total	**34,089**	**22**	**306**	**1,904**	**5,488**	**12,061**	**14,308**
Breast cancer (174)	Women	12,947	138	681	1,730	2,261	2,790	5,347
	Total	**12,947**	**138**	**681**	**1,730**	**2,261**	**2,790**	**5,347**
Respiratory disease (460-519)	Men	48,253	397	296	908	2,848	9,543	34,261
	Women	60,125	280	256	651	2,078	7,459	49,401
	Total	**108,378**	**677**	**552**	**1,559**	**4,926**	**17,002**	**83,662**
Injuries and poisoning (800-999)	Men	12,506	4,370	2,046	1,686	1,182	1,065	2,157
	Women	7,315	1,189	579	551	492	746	3,758
	Total	**19,821**	**5,559**	**2,625**	**2,237**	**1,674**	**1,811**	**5,915**
All other causes	Men	34,290	4,257	1,695	2,640	3,164	5,459	17,081
	Women	52,441	2,761	930	1,626	2,329	5,096	39,699
	Total	**86,731**	**7,018**	**2,625**	**4,266**	**5,493**	**10,555**	**56,780**

ICD (9th revision) codes in parentheses.

Sources: Office for National Statistics (2000) Deaths registered in 1999 by cause, and area of residence. Personal communication; General Register Office (2000) Annual Report 1999. General Register Office: Edinburgh; General Register Office (2000) Annual Report 1999. Statistics and Research Agency: Northern Ireland.

Table 2.2 Percentage of deaths by cause in people with diabetes by sex and age, 1972/99, United Kingdom compared with the general population, 1999, United Kingdom

		British Diabetic Association cohort							General population						
		All ages	1-9	10-19	20-29	30-39	40-49	50-59	All ages	1-9	10-19	20-29	30-39	40-49	50-59
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
Diabetes and hypoglycaemia	Men	22	46	37	30	20	5	4	1	0	0	1	1	1	1
(250-251)	Women	23	67	49	24	13	2	12	0	0	1	0	0	1	1
CVD	Men	30	8	6	10	27	56	71	27	3	3	5	14	30	37
(390-459)	Women	29	8	11	16	35	56	49	10	2	3	4	7	12	13
Renal disease	Men	7	0	0	6	13	14	6	0	0	0	0	0	0	0
(580-593)	Women	12	0	2	12	24	12	12	0	0	0	0	0	0	0
Respiratory disease;	Men	5	8	3	7	4	4	8	6	5	4	3	4	5	7
(460-519)	Women	6	25	6	5	7	7	2	4	4	3	2	3	4	5
Cancer	Men	4	15	5	3	3	3	8	26	5	11	8	13	24	36
(140-239)	Women	5	0	2	2	2	10	14	27	4	8	7	19	33	34
Accidents and violence	Men	22	8	38	29	24	11	1	19	7	53	61	43	18	6
(800-999)	Women	11	0	17	15	9	5	6	6	5	18	13	11	6	2
All other causes	Men	10	15	10	14	10	7	3	22	80	28	23	26	21	13
	Women	14	0	13	25	11	7	4	14	61	18	11	12	13	8
Total numbers of deaths	*Men*	*461*	*79*	*13*	*78*	*139*	*79*	*73*	*46,428*	*2,999*	*1,399*	*3,575*	*5,547*	*9,660*	*23,248*
	Women	*298*	*49*	*12*	*53*	*97*	*46*	*41*	*28,438*	*2,246*	*717*	*1,312*	*2,922*	*6,528*	*14,713*

ICD (9th revision) codes in parentheses.

Sources: *Laing SP, Swerdlow AJ, Slater SD, Botha JL, Burden AC, Waugh NR, Smith AWM, Hill RD, Bingley PJ, Paterson CC, Qiao Z, Keen H (1999) The British Diabetic Association Cohort Study, II: cause-specific mortality in patients with insulin-treated diabetes mellitus. Diabetic Medicine 16: 466-471.*

Office for National Statistics (2000) Deaths registered in 1999 by cause, and area of residence. Personal communication;

General Register Office (2000) Annual report 1999. General Register Office: Edinburgh;

General Register Office (2000) Annual report 1999. Statistics and Research Agency: Northern Ireland.

Figure 2.2a Deaths by cause in people with diabetes, men aged 40-59, 1972/99, United Kingdom

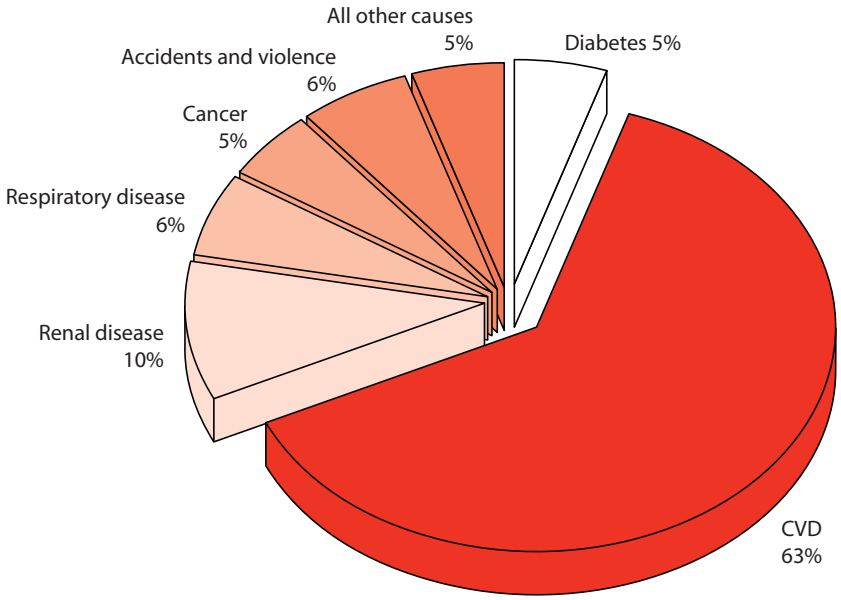


Figure 2.2b Deaths by cause in people with diabetes, women aged 40-59, 1972/99, United Kingdom

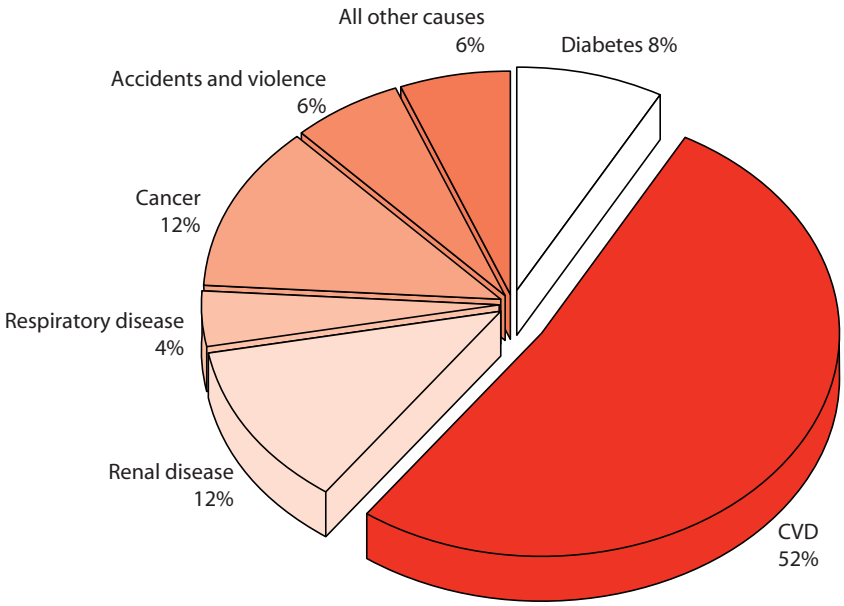


Figure 2.2c Deaths by cause in the general population, men aged 40-59, 1999, United Kingdom

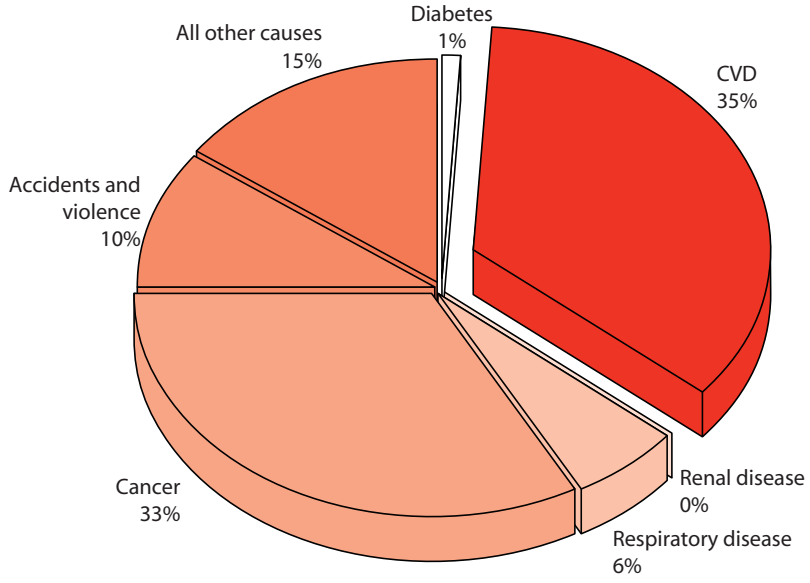
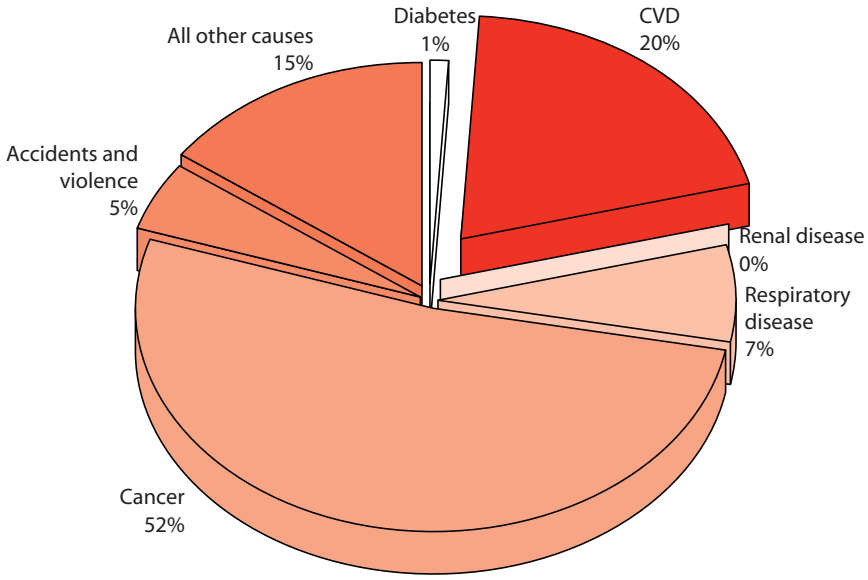


Figure 2.2d Deaths by cause in the general population, women aged 40-59, 1999, United Kingdom



3. Morbidity from diabetes

Diabetes causes severe morbidity. Complications of diabetes can be divided into three categories:

- metabolic complications of low blood glucose levels (hypoglycaemia) and of high glucose sugar levels (hyperglycaemia). Diabetic coma is one such metabolic complication of a particularly severe nature;
- damage to small blood vessels (microvascular complications) leading in turn to damage to the retina (retinopathy), kidney (nephropathy) and nerves (neuropathy);
- damage to the larger arteries (macrovascular complications) leading in turn to damage to the brain (stroke), the heart (coronary heart disease) or to the legs and feet (peripheral vascular disease).

The Global Burden of Disease Project estimates that in Established Market Economies such as the UK 3% of years of life lost in disability are due to diabetes. This is only slightly less that the years of life lost in disability due to cancer at 4%[1].

The UK Prospective Diabetes Study (UKPDS) – a multi-centre prospective randomised intervention trial where the subjects are people with newly diagnosed Type 2 diabetes - has found that nearly half of the people with diabetes recruited to the trial had one or more micro or macrovascular complication[2]. Table 3.1 shows that about a quarter already had CVD[3].

1. *Murray CJL, Lopez AD (1996) The Global Burden of Disease. WHO: Geneva. See also Table 2.2. Rayner M, Petersen S (2000) European cardiovascular disease statistics. British Heart Foundation: London.*
2. *United Kingdom Prospective Diabetes Study Group (1990) United Kingdom Prospective Diabetes Study (UKPDS) IV. Characteristics of newly diagnosed type 2 diabetic patients and their association with different clinical and biochemical risk factors. Diabetes Research 13: 1-11.*
3. *Note UKPDS subjects were people with newly diagnosed diabetes and therefore might be expected to be relatively healthy compared with people who had had diabetes for longer.*

Table 3.1 Prevalence of complications of diabetes amongst people with newly diagnosed diabetes, 1977/91, United Kingdom

	%
Retinopathy	21
Abnormal electro-cardiogram	18
Myocardial infarction	2
Angina	3
Intermittent claudication	3
Stroke/trasient ischaemic attack	1
Absent foot pulses/ischaemic feet	14
Impaired reflexes/decreased sense of vibration	7
Number of patients	*4,072*

Source: UK Prospective Diabetes Study Group (1991) UK Prospective Diabetes Study (UKPDS) VIII. Study design, progress and performance. Diabetologia 34: 877-890.

4. Prevalence of risk factors for CVD in people with diabetes

Various studies report that people with diabetes are more likely to have other risk factors for CVD. The UKPDS, for example, report that 35% of men and 47% of women aged 25-64 with newly diagnosed Type 2 diabetes are hypertensive compared with about 17% of men and 15% of women in the general population (Table 4.1).

The UKPDS also reports that the mean body weight of men with newly diagnosed diabetes is 23% above the ideal compared with 12% for the general population and for women with newly diagnosed diabetes it is 42% above the ideal compared with 16% for the general population (Table 4.2).

In the latest results of the Tayside study 42% of Type 1 patients and 52% of Type 2 patients were current or ex-smokers, and 58% of Type 1 patients and 64% of Type 2 patients had a total cholesterol level greater than 5 mmol/l[1].

1. *Tayside Regional Diabetes Network (1999) Annual Report: Demographics. http://www.diabetes-healthnet.ac.uk/report/main.htm*

Table 4.1 Prevalence of hypertension amongst people with newly diagnosed diabetes by sex and age, 1977/89, United Kingdom; compared with the general population, 1991, England

	UKPDS subjects					General population				
	All ages	25-34	35-44	45-54	55-64	All ages	25-34	35-44	45-54	55-64
	%	%	%	%	%	%	%	%	%	%
MEN										
On therapy for hypertension	14	3	7	12	19	7	1	2	8	21
Hypertensive (untreated)	21	10	21	22	21	10	4	7	13	20
All hypertensive	35	14	28	34	40	17	5	9	21	41
Base	*2,136*	*96*	*339*	*781*	*920*	*835*	*245*	*230*	*189*	*171*
WOMEN										
On therapy for hypertension	24	3	15	21	31	8	1	3	8	24
Hypertensive (untreated)	22	13	21	23	23	7	2	4	6	19
All hypertensive	47	17	37	44	53	15	3	7	14	43
Base	*1,512*	*60*	*192*	*524*	*736*	*946*	*266*	*268*	*207*	*205*

Hypertensive: for UKPDS subjects: systolic > 160 mmHg and/or diastolic > 90 mmHg; for general population: systolic > 160 mmHg and/or diastolic > 95 mmHg.

Sources: *The Hypertension in Diabetes Study Group (1992) Hypertension in Diabetes Study (HDS): 1. Prevalence of hypertension in newly presenting type 2 diabetic patients and the association with risk factors for cardiovascular and diabetic complications. Journal of Hypertension 11: 309-325;*

Office of Population Censuses and Surveys, Social Survey Division (1993) Health Survey for England, 1991. HMSO: London.

Table 4.2 Mean body weight as a percentage of ideal body weight for people with newly diagnosed diabetes by sex and age, around 1982, United Kingdom; compared with the general population, 1984, Great Britain

	UKPDS subjects					General population				
	All ages	25-35	36-45	46-55	56-65	All ages	25-35	36-45	46-55	56-65
	%	%	%	%	%	%	%	%	%	%
MEN	123	122	124	124	122	112	109	113	114	113
Base	*919*	*48*	*147*	*367*	*357*					
WOMEN	142	118	148	147	138	116	110	116	120	121
Base	*629*	*19*	*85*	*228*	*297*					

Source: *UK Prospective Diabetes Study Group (1988) UK Propsective Diabetes Study. IV. Characteristics of newly presenting Type 2 diabetic patients: male preponderance and obesity at different ages. Diabetic Medicine 5: 154-159.*

5. Treatment of diabetes and prevention of CVD in people with diabetes

General practice consultations

Statistics collected by GPs suggest that diabetes is managed at nearly 1% of all general practice consultations (Table 5.1).

However there is wide variation between practices in the proportion of people with diabetes who receive routine examinations and a wide variation in what tests GPs carry out during those examinations (Table 5.2).

Prevention of CVD should be a priority for people with diabetes but a survey of patients with diabetes carried out in 1995/96 found that only 38% of patients seen by GPs in England and Wales had their blood cholesterol tested within the last 12 months. Assessment of smoking and testing for raised blood pressure was somewhat better: 71% of patients had been assessed for whether they smoked or not and 88% had had their blood pressure tested. Only 62% of patients had had their diet reviewed in the last 12 months and the survey did not examine the extent to which patients were advised about physical activity (Table 5.2).

Just over a half of patients with diabetes are cared for by their GPs, about 20% are under the care of a hospital and about 30% receive shared care[1].

Hospitalisations

Hospital Episode Statistics suggests that there are about 70,000 hospitalisations each year in England where diabetes is the principal diagnosis (over 0.6% of all hospitalisations) leading to a total of over 350,000 days of in-patient care (Table 5.3).

When hospitalisations for diabetes as the principal diagnosis are combined with hospitalisations for complications of diabetes, the total number of hospitalisations due to diabetes rises to 266,000 and 1.1 million days of in-patient care (2% of all hospitalisations and 5% of all days of in-patient care) (Table 5.4).

CVD is the principal cause of all admissions due to diabetes. About 67% of all days spent in hospital due to diabetes are because of CVD (Table 5.4).

In the UK men are slightly more likely to be hospitalised for diabetes (as the principal diagnosis) than women (Table 5.3). Hospitalisations due to diabetes (as either the principal cause or because of complications of diabetes) increase steadily with age (Table 5.4).

1. *Khunti K, Baker R, Rumsey M, Lakhani M (1999) Quality of care of patients with diabetes: collation of data from multi-practice audits of diabetes in primary care. Family Practice 16: 54-59.*

Table 5.1 Consultations with a GP for selected diseases by sex and age, 1991/92, England and Wales

Rate per 10,000		All ages	0-4	5-15	16-24	25-44	45-64	65-74	75-84	85 & over
All conditions	Men	27,194	51,027	20,142	17,198	19,290	30,622	43,138	51,708	57,761
	Women	42,071	48,288	22,954	43,186	42,846	43,291	47,478	54,301	55,247
Coronary heart disease	Men	534	-	0	1	63	1,157	2,223	2,169	1,688
(410-414)	Women	326	1	-	0	24	461	1,191	1,513	1,241
Stroke	Men	133	-	1	3	5	163	577	1,066	1,587
(430-438)	Women	128	-	-	4	7	95	337	798	1,259
Diabetes	Men	292	1	12	55	113	544	1,053	1,164	778
(250)	Women	256	3	10	35	86	394	858	932	496

ICD (9th revision) codes in parentheses.

Source: 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 5. 2 Treatment of patients with diabetes in the previous 12 months, general practices, 1995/96, England and Wales

Checked within last 12 months	No. of groups using criterion	No. of patients	% compliance with criterion	Range between groups
HbA1c or fructosamine	16	22,633	73	25-89
Fundi	12	15,613	68	58-87
Urine	12	16,253	66	28-80
Blood pressure	11	20,912	88	77-97
Feet	11	17,183	68	40-91
Smoking	10	14,223	71	22-86
BMI	7	7,403	53	26-68
Weight	5	10,450	73	66-77
Visual acuity	7	7,622	63	52-74
Creatinine	5	4,814	49	40-67
Lipids	4	2,544	38	16-47
Blood sugar	3	4,764	84	81-90
Diet	3	3,402	62	48-92

17 audit groups were surveyed representing 495 general practices.

Source: Khunti K, Baker R, Rumsey M, Lakhani M (1999) Quality of care of patients with diabetes: collation of data from multi-practice audits of diabetes in primary care. Family Practice 16: 54-59.

Table 5.3 Inpatient cases by main diagnosis, sex and age, National Health Service hospitals, 1999/2000 England

	Admissions			Days in hospital
	Men	Women	Total	Total days
All diagnoses	5,262,807	6,904,767	12,167,574	49,419,319
All diseases of the circulatory system (I00-I99)	583580	473,919	1,057,499	6,966,985
Coronary heart disease (I20-I25)	234,403	129,765	364168	1,648,973
Angina pectoris (I20)	85,293	60,349	145,642	564,750
Acute myocardial infarction (I21)	56,662	33,449	90,111	546,357
Chronic coronary heart disease (I25)	81,707	30,714	112,421	446,080
Heart failure (I50)	54,870	55,497	110,367	1,018,253
Stroke (I60-I69)	68,012	76,209	144,221	2,326,501
Diabetes (E10-E14)	39,385	32,856	72,241	354,280
All cancer (C00-D48)	535,614	530,606	1,066,220	3,785,343
Colo-rectal cancer (C18-C21)	94,812	68,456	163,268	569,012
Lung cancer (C33-C34)	49,358	29,947	79,305	394,479
Breast cancer (C50)	751	135,354	136,105	288,171
Bladder cancer (C67)	61,635	21,206	82,841	211,026
All diseases of the nervous system (G00-G99)	107,606	123,449	231,055	1,738,488
All diseases of the respiratory system (J00-J99)	385,429	356,447	741,876	3,753,123
All diseases of the digestive system (K00-K93)	646,270	651,207	1,297,477	3,192,180
All diseases of the genitourinary system (N00-N99)	293,850	507,174	801,024	1,992,169
Complications of pregnancy and childbirth (O00-O99)	0	1,178,797	1,178,797	2,033,258
Injury and poisoning (S00-T98)	404,577	354,010	758,587	4,228,171
All other diagnoses	2,266,496	2,696,302	4,962,798	21,375,322

ICD codes (10th revision) in parentheses; ordinary admissions and day cases combined.

Source: Department of Health (2001) Hospital Episode Statistics. http://www.doh.gov.uk/hes/

Table 5.4 Estimates of numbers of inpatient cases and days in hospital due to diabetes by age, National Health Service hospitals, 1999/2000, England

		Admissions					Days in hospital
		Age group					
		0-14	15-59	60-74	75 & over	Total	Total days
All diseases and conditions		1,682,024	5,687,806	2,463,174	2,308,477	12,141,481	49,419,319
Diabetes as a direct cause (E10-E14)		5,116	30,622	23,089	13,392	72,219	354,280
Complications of diabetes due to:	Heart disease (I20-I25, I10-I15, I26-I28, I30-I52)	340	22,774	36,638	33,815	93,568	508,537
	Cerebrovascular disease (I60-I69)	60	2,834	6,288	10,856	20,038	323,384
	Peripheral vascular disease (I70-I79)	69	2,816	5,720	4,910	13,515	5,487
	Ophthalmic complications (H25-H28)	63	2,383	8,899	17,413	28,759	7,553
	Renal disease (N17-N19)	319	3,903	4,135	3,302	11,659	49,565
All diabetes (as a direct cause or complications due to diabetes)		5,967	65,332	84,770	83,689	239,757	1,248,806

The estimates for the numbers of admissions due to complications of diabetes (and days in hospital) were derived by multiplying the total numbers of admissions (or days in hospital) due to the complications (from Hospital episode statistics) by the percentages of admissions in diabetic patients (from the study by Currie et al).

Sources: *Department of Health (2001) Hospital Episode Statistics. http://www.doh.gov.uk/hes/*

Currie CJ, Williams DRR, Peters JR (1996) Patterns of in and out-patient activity for diabetes: a district survey. Diabetic Medicine 13: 273-280.

6. Prevalence of behavioural risk factors for Type 2 diabetes in the general population

6.1 *Overweight and obesity*

Overweight and obesity increase the risk of developing Type 2 diabetes. The risk increases continuously with Body Mass Index (BMI) and decreases with weight loss. It has been estimated that just under two-thirds of cases of Type 2 diabetes in men and three-quarters of cases in women could be prevented if everyone had a BMI under 25[1].

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

Overall prevalence

In England about 46% of men and 32% of women are overweight (a BMI of 25-30 kg/m^2), and an additional 17% of men and 21% of women are obese (a BMI of more than 30 kg/m^2) (Table 6.1). Central obesity (a waist-hip ratio of 0.95 and over in men and 0.85 and over in women) is also common among adults in England. Around 28% of men and 20% of women have central obesity (Table 6.2).

Age and sex differences

Overweight and obesity increase with age. About 28% of men and 27% of women aged 16-24 are overweight or obese but 76% of men and 68% of women aged 55-64 are

overweight or obese (Table 6.1). The prevalence of central obesity also increases with age, especially in men. About 7% of both men and women aged 16-34 have central obesity but 46% of men and 23% of women aged 55 and over have central obesity (Table 6.2).

The prevalence of obesity increases with age throughout childhood (Table 6.3). In 1996, around 13% of 8 year olds and 17% of 15 year olds in England were obese[2].

Temporal trends

Overweight and obesity are increasing. The percentage of adults who are obese has roughly doubled since the mid 1980's (Table 6.4 and Figure 6.4). The high levels of overweight and obesity among children are likely to exacerbate the trend towards overweight and obesity in the adult population: compared to thin children, obese children have a high risk of becoming overweight adults[3].

Socio-economic differences

Obesity is more common in adults employed in manual occupations, particularly women. A quarter of women working in unskilled manual occupations have a BMI of more than 30 kg/m^2 compared to one in seven of those employed in a professional role. Both men and women working in unskilled manual occupations are over four times as likely as those in professional employment to be classified as morbidly obese (a BMI over 40) (Table 6.5).

In both men and women, the prevalence of central obesity is higher in people from manual social classes (IIIM, IV and V) than from non-manual classes (I, II and IIINM). However, as in general obesity, the social class patterning of central obesity is more evident in women, in whom the prevalence of central obesity increases from 18% in social class I to 27% in social class V (Table 6.6).

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 general obesity are much lower in Pakistani, Indian, Chinese, and, most markedly, Bangladeshi men, who are three times less likely to be obese than men in the general population (Table 6.7). Despite low levels of general obesity, Pakistani, Indian and Bangladeshi men, have relatively high levels of raised waist to hip ratio, with 41% of Indian men classified as centrally obese compared to 28% of men in the general population. African Caribbean and Chinese men are less likely to have a raised waist hip ratio (Table 6.8).

Among women, obesity prevalence is high for African Caribbean and Pakistani women and low for Bangladeshi and Chinese women (Table 6.7). However, all female minority ethnic groups have levels of central obesity well above that of the general female population, with African Caribbean and Pakistani women two times, and Bangladeshi women over three times, as likely to have a raised waist to hip ratio as women in general (Table 6.8).

International differences

Data from national surveys of overweight and obesity collected by Professor Boyd Swinburn and his colleagues at Deakin University, Victoria, Australia show that the prevalence rates for overweight and obesity in the UK are some of the highest in the world. For example the prevalence of obesity is the eighth highest for men (out of 40 countries) and the eleventh highest for women (out of 41 countries) (Table 6.9 and Figure 6.9).

Levels of overweight and obesity are increasing in all countries – both developed and developing (Table 6.9).

6.2 Physical activity

People who are physically active have a much lower risk of developing Type 2 diabetes than sedentary people.

The Government recommendation on physical activity is 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[4].

Age and sex differences

Physical activity levels are low in the UK: only 37% of men and 25% of women meet the current guidelines (30 minutes moderate activity on five or more days a week) suggested by the government (Table 6.10). In addition, over one third of adults are currently inactive, that is do less than one occasion of 30 minutes of physical activity a week (Table 6.10).

Physical activity declines rapidly with age. Whereas 58% of men and 33% of women aged 16-24 are physically active for 30 minutes or more at least five days a week, this declines to 17% of men and 12% of women in the 65-74 age group (Table 6.10 and Figures 6.10a and 6.10b).

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[5]. In England, only 55% of boys and 39% of girls aged 2-15 are active for at least an hour on five or more days a week[6]. Participation rates decline with age after around 8-10 years, with the steepest decline in girls. By the age of 15, less than one in five girls reach the recommended level of activity[6].

Temporal trends

It is generally thought that over the last 20 years physical activity levels have declined in the UK[7]. Since 1994 the proportion meeting the current recommended level of physical activity has remained stable at 37% in men and increased slightly, from 22% to 25%, in women; but the proportion classified as sedentary (less than one occasion of physical activity of thirty minutes a week) has increased from 30% in 1994 to 35% in 1998 in men, and from 35% to 41% in women (Table 6.10).

Socio-economic differences

Socio-economic differences in physical activity are complex. In men, overall activity levels are greater in manual social classes than in non-manual classes: half of those working in unskilled manual jobs meet current recommended levels compared to just under a third

of those in professional jobs. In women, however, there is no clear pattern according to social class in the proportion meeting the recommended activity level[6].

The type of activity, however, does vary with social class in men and women, with a greater incidence of work related activity in manual (especially in men) and sports activity (especially in women) in non-manual classes[8].

Ethnic differences

Compared with the general population, South Asian and Chinese men and women are less likely to participate in physical activity, with the lowest levels found in the Bangladeshi community. Only 18% of Bangladeshi men and 7% of Bangladeshi women meet the current recommended physical activity levels (30 minutes activity on five or more days a week). African Caribbean men and woman are the most likely to be physically active at the recommended level[9].

International differences

Levels of activity vary across Europe, with levels of activity in the UK falling below the average for the European Union (Table 6.11 and Figure 6.11).

1. *World Health Organization (1998) Obesity. Preventing and Managing the Global Epidemic.*
2. *In children and adolescents, obesity and overweight cannot be classified in the same way as in adults, where age-independent body mass index cut off points are utilised (i.e. a BMI 25-30 for overweight and a BMI over 30 for obese). Due to growth spurts during development, BMI changes substantially with age in children and needs to be assessed using age-related reference curves. Because of these different classification systems for adults and children, Table 6.1 and Table 6.3 are not directly comparable.*
3. *Serdula M, Ivery D, Coates R, Freedman D, Williamson D, Byers T (1993) Do obese children become obese adults? A review of the literature. Preventive Medicine 22: 167-177.*
4. *Department of Health (1996) Strategy Statement on Physical Activity. DH: London. However it should be noted that the recommended activity levels for Northern Ireland, and Scotland are age-related and combine the guidelines on vigorous and moderate intensity activity.*
5. *Biddle S, Sallis J, Cavill N (eds) (1998) Young and Active? Young people and health enhancing physical activity – evidence and implications. Health Education Authority: London.*
6. *Petersen S, Rayner M, Press V (2000) Coronary heart disease statistics. British Heart Foundation: London.*
7. *Prentice AM, Jebb SA (1995) Obesity in Britain: gluttony or sloth? British Medical Journal 311: 437-9.*
8. *Joint Health Surveys Unit (1999) Health Survey for England 1998. The Stationery Office: London.*
9. *Petersen S, Rayner M (in press) Coronary heart disease statistics 2002. British Heart Foundation: London.*

Table 6.1 Body Mass Index by sex and age, 1998, England

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
Body mass index (kg/m²)	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
MEN								
20 or less	4	14	3	2	2	1	2	4
Over 20-25	34	59	41	33	25	24	22	32
Over 25-30	46	23	40	48	52	52	55	48
Over 30-40	17	5	15	16	20	22	20	16
Over 40	1	0	1	1	1	1	1	0
All over 30 (obese)	**17**	**5**	**16**	**17**	**21**	**23**	**21**	**16**
Base	*6,600*	*825*	*1,261*	*1,229*	*1,197*	*910*	*745*	*433*
WOMEN								
20 or less	7	19	8	4	4	3	5	7
Over 20-25	40	54	49	45	36	29	25	35
Over 25-30	32	17	27	30	36	39	41	37
Over 30-40	19	10	15	18	22	26	27	20
Over 40	2	1	2	3	2	2	2	1
All over 30 (obese)	**21**	**11**	**16**	**21**	**24**	**29**	**29**	**21**
Base	*7,730*	*903*	*1,433*	*1,449*	*1,373*	*1,043*	*853*	*676*

Source: Joint Health Surveys Unit (1999) Health Survey for England. 1998. The Stationery Office: London.

Table 6.2 Prevalence of a raised waist-hip ratio by sex and age, 1998, England

	All ages	16-34	35-54	55 & over
	%	**%**	**%**	**%**
MEN	28	7	27	46
Base	*7,193*	*2,213*	*2,594*	*2,386*
WOMEN	20	7	17	34
Base	*8,715*	*2,636*	*3,057*	*3,022*

A raised waist-hip ratio for men is defined as 0.95 and over and for women is 0.85 and over.

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

Table 6.3 Prevalence of obesity and overweight in children by sex and age, 1996, England

	Age (years)									
	6	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
BOYS										
% overweight	22	26	24	25	23	25	28	25	30	33
% obese	12	9	12	13	10	14	12	12	14	16
Base	*154*	*144*	*136*	*131*	*135*	*122*	*126*	*131*	*136*	*140*
GIRLS										
% overweight	22	18	21	19	24	24	28	28	29	29
% obese	9	12	13	10	11	11	18	16	13	17
Base	*144*	*136*	*159*	*116*	*117*	*134*	*120*	*132*	*113*	*104*
BOTH										
% overweight	22	22	22	22	23	25	28	27	30	31
% obese	10	10	13	11	10	13	15	14	15	17
Base	*298*	*280*	*295*	*247*	*252*	*256*	*246*	*263*	*249*	*244*

Health Survey for England 1996 data. Children were defined as overweight if their BMI was above the 85th centile of the 1990 Body Mass Index reference curves for the UK, and obese if above the 95th centile.

Source: Reilly J, Dorosty A (1999) Epidemic of obesity in UK children. Lancet; 354:1874-75.

Table 6.4 Body Mass Index by sex, 1986/87-1999, England

Body mass index (kg/m2)	1986/87 %	1991/92 %	1993 %	1994 %	1995 %	1996 %	1997 %	1998 %	1999 %
MEN									
20 or less	6	6	5	5	5	5	4	4	5
Over 20-25	49	41	39	39	38	36	35	35	34
Over 25-30	38	40	43	43	43	43	43	44	42
More than 30	7	13	13	13	15	16	17	17	18
Bases	*n/a*	*n/a*	*5,998*	*5,597*	*5,471*	*5,731*	*3,078*	*5,422*	*2,626*
WOMEN									
20 or less	11	9	8	8	7	7	7	5	8
Over 20-25	53	50	47	47	46	44	43	41	41
Over 25-30	24	26	30	29	30	31	30	33	31
More than 30	12	15	16	16	17	17	19	22	20
Bases	*n/a*	*n/a*	*6,389*	*6,147*	*6,180*	*6,401*	*3,424*	*6,201*	*3,004*

Adults aged 16–64.

Sources: *From 1993 , Health Survey for England. See Department of Health. Website: http://www.doh.gov.uk/public/summary1.htm Earlier figures, Central Health Monitoring Unit, Department of Health, personal communication.*

Figure 6.4 Prevalence of overweight and obesity amongst adults aged 16-64, 1986/87-1999, England

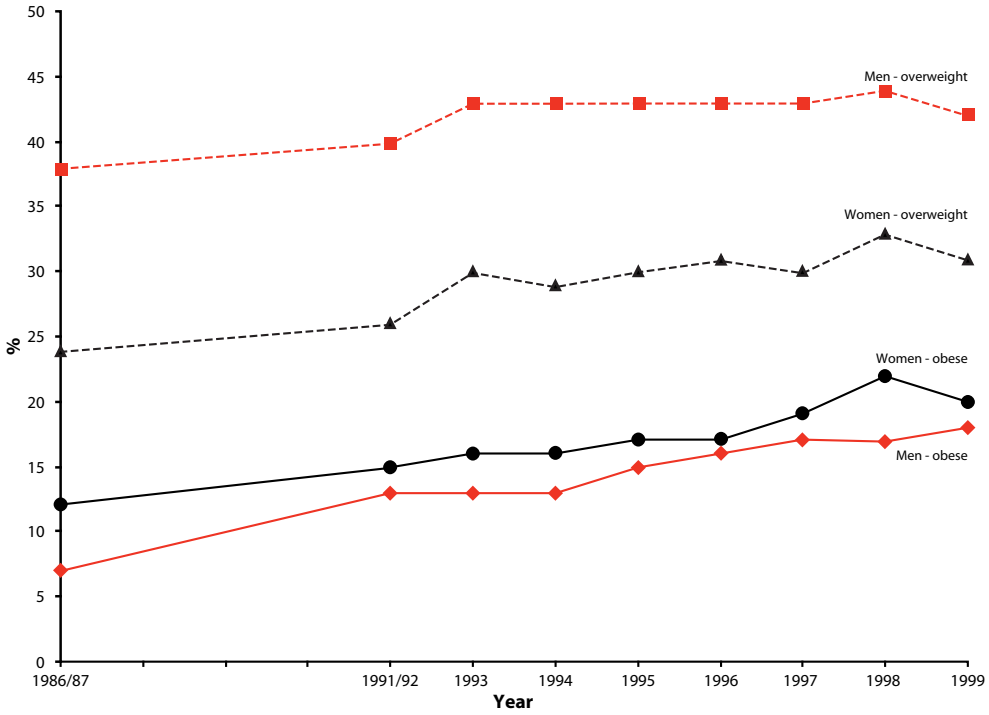


Table 6.5 Prevalence of morbid obesity, obesity and overweight by sex and social class, 1998, England

Body mass index (kg/m²)	I Professional	II Intermediate	IIIN Skilled non-manual	IIIM Skilled manual	IV Partly skilled manual	V Unskilled manual
	%	%	%	%	%	%
MEN						
25-30 (overweight)	46	47	43	44	44	40
Over 30 (obese)	12	16	16	20	16	18
Over 40 (morbid obesity)	0	1	0	1	1	2
Base	*461*	*2,031*	*662*	*2,072*	*938*	*301*
WOMEN						
25-30 (overweight)	30	33	31	32	32	32
Over 30 (obese)	14	18	18	24	25	28
Over 40 (morbid obesity)	1	2	1	2	3	3
Base	*471*	*2,231*	*1193*	*1,983*	*1,201*	*429*

Adults aged 16 and over.

Age-standardised percentages; see source for method of age-standardisation.

Source: Joint Health Surveys Unit (1999) Health Survey for England 1998. The Stationery Office: London.

Table 6.6 Prevalence of a raised waist-hip ratio by sex and social class, England, 1998

	Social class of head of household					
	I Professional	II Intermediate	IIIN Skilled non-manual	IIIM Skilled manual	IV Partly skilled manual	V Unskilled manual
	%	%	%	%	%	%
MEN						
	20	24	23	31	28	29
Base	*418*	*1,896*	*601*	*1,926*	*863*	*27*
WOMEN						
	18	18	18	22	24	27
Base	*432*	*2,062*	*1,098*	*1,836*	*1,117*	*390*

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: Joint Health Surveys Unit (1999) Health Survey for England 1998. The Stationery Office: London.

Table 6.7 Prevalence of obesity by sex and ethnic group, 1999, England

	General population	Black Caribbean	Indian	Pakistani	Bangladeshi	Chinese	Irish
	%	%	%	%	%	%	%
MEN	19	19	12	14	6	7	20
Base	*3,204*	*466*	*527*	*556*	*409*	*284*	*481*
WOMEN	21	33	21	34	13	4	22
Base	*3,699*	*618*	*572*	*550*	*408*	*339*	*631*

Adults aged 16 and over.

Obesity: a BMI of over 30; age-standardised percentages; see source for method of age-standardisation.

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

Table 6.8 Prevalence of a raised waist-hip ratio by sex and ethnic group, 1999, England

	General population	Black Caribbean	Indian	Pakistani	Bangladeshi	Chinese	Irish
	%	%	%	%	%	%	%
MEN	28	17	41	42	37	21	32
Base	*6,095*	*363*	*467*	*387*	*273*	*196*	*408*
WOMEN	20	42	34	56	72	36	27
Base	*7,135*	*513*	*461*	*403*	*288*	*249*	*540*

Adults aged 16 and over.

A raised waist-hip ratio for men is defined as 0.95 and over and for women is 0.85 and over; age-standardised percentages; see source for method of age-standardisation.

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

Table 6.9 Body Mass Index by sex, 1960-1999, all available countries

Country	Year	Base	Age (y)	BMI - Men Mean (kg/m²)	BMI - Men ≥25 (%)	BMI - Men ≥30 (%)	BMI - Women Mean (kg/m²)	BMI - Women ≥25 (%)	BMI - Women ≥30 (%)	Notes
Australia	1980	5603	25-64	25.3	49.9	9.3	23.7	28.2	8.0	6 main cities
	1983	7615	25-64	25.3	49.1	9.1	24.1	32.5	10.5	6 main cities
	1989	6097	25-64	25.7	55.6	11.5	24.7	38.3	13.2	6 main cities
	1995	10652	19+	26.7	64.5	17.9	26.0	49.2	16.7	
Austria	1991	NR	20+	25.0		8.3	24.1		9.0	8 regions
Belgium	1979-84	11302	25-74	25.9	58.6	12.1	26.0	53.6	18.4	
Brazil	1974-5	95062	20+	22.3		2.4	22.8		7.0	NE & SE regions
	1989	15585	20+	23.3		4.7	24.3		12.0	NE & SE regions
	1996-97	10680	20+	24.3	42.5	6.9	24.6	51.3	12.5	NE & SE regions
Canada	1981	10911	20-69	25.3	47.9	9.4	23.8	40.6	12.1	
	1985	9241	20-69	24.6	37.4	6.1	23.1	36.7	8.1	
	1988	1269	19-69	23.2		9.0	24.8		9.2	
	1986-90	17858	18-74	26.0	56.0	15.0	25.0	38.0	15.0	
	1994	12318	20-64	26.1		13.5	24.8		15.7	
	1996	NR	20-64	26.2	59.2	13.3	24.5	37.2	11.8	
	1998-9	NR	15+	25.9	56.0		24.6	38.0		
China	1989	3981	20-45	20.4	6.4	0.3	20.9	11.7	0.9	8 provinces (same
	1991	3981	22-47	21.4	8.9	0.4	21.9	13.1	0.9	people in 1989 & 1991)
	1992	54006	20+	21.4	11.9		21.7	17.0		
	1993	4920	20-45	20.9	9.0	0.7	20.9	12.0	0.7	
Cuba	1982	30063	20-59	23.7	31.5		24.7	39.4		Parents from children's survey
Denmark	1994	4668	16+	24.9	44.2	8.2	23.3	28.0	7.0	
Egypt	1993	5812	15+				28.5	71.9	35.1	
Finland	1966-72	17294	15+	24.6		8.3	25.3		17.4	
	1978-80	4225	15-64	24.7	42.0		24.3	36.0		
	1982	9111	25-64	26.3	61.0	15.4	25.8	50.0	16.6	3 regions
	1985-7	4125	15-64	24.8	43.0		24.3	36.0		
	1987	6025	25-64	26.7	65.4	17.5	26.2	52.3	20.3	3 regions
	1988-90	3850	15-64	25.0	45.0		24.5	38.0		
	1992	4618	25-64	26.8	64.9	19.9	26.1	51.9	20.0	3 regions
	1994-6	3575	15-64	25.4	50.0		25.1	43.0		
	1997	4329	25-64	27.1	67.4	20.1	26.2	52.4	19.2	3 regions
	1999	3371	15-64	25.4	50.0		25.0	42.0		
France	1980-81	13942	20+	24.6	39.4	6.4	23.2	26.8	6.3	
	1988	1941	16-50	23.5			22.1			1272 men, 669 women
	1991-2	15106	20+	24.7	40.8	6.5	23.3	27.5	7.0	
Germany	1984-5	4790	25-69	26.5		15.1	25.8		16.5	
	1987-8	5335	25-69	26.5		14.7	25.8		17.2	
	1990-1	5311	25-69	26.8		17.2	26.2		19.3	
	1992	7410	25-69	26.8			26.3			
	1998	7124	18-79	26.9			26.3			
Ghana	1987-9	9215	20-65	20.8	5.3	0.6	22.1	18.1	6.1	Uncertain sampling methods
Greece	1993-9	14281	30-82	27.9			28.0			Baseline of cohort study
Hong Kong	1995-6	2875	25-74	24.3	38.0	5.0	24.0	34.0	7.0	
Hungary	1986-8	16113	18+	26.0	57.2	16.5	27.3	61.7	19.6	
India	1974-9	39143	18+	18.6	2.3	0.2	18.8	3.4	0.5	Mainly rural areas
	1988-90	21361	18+	18.9	2.7	0.2	19.0	4.1	0.5	Mainly rural areas
	1995-6	177841	18+	19.8	4.3	0.3	19.4	4.6	0.6	Uncertain sampling methods
Italy	1983	72284	15+	24.6	41.2	7.1	23.4	28.9	7.6	
	1978-87	63046	20-69	26.3			26.4			9 surveys pooled
	1991	50692	15+	25.1	46.2	7.0	23.6	30.6	6.1	
	1994	13048	15+	25.1	46.1	6.5	23.7	31.3	6.3	
Japan	1976	NR	20+	21.0		0.7	22.0		2.8	
	1980	17858	30-69	22.7			22.8			
	1982	NR	20+	21.4		0.9	21.9		2.6	
	1983	16195	30-69	22.9			22.9			
	1986	16822	30-69	22.9			22.8			
	1987	NR	20+	22.0		1.3	22.0		2.8	
	1989	16210	30-69	23.0			22.6			
	1990-4	52307	15-84	22.8	22.1	1.8	22.5	20.6	2.6	
	1993	NR	20+	22.5		1.8	21.9		2.6	
Jordan	1994-6	2836	25+	27.1		32.7	30.6		59.8	Uncertain sampling methods
Korea	1990	22354	30+	22.8	22.6		23.4	30.2		
	1995	6480	15+	22.6			21.7			
Kuwait	1980	2067	18+	25.0	45.7	14.9	27.5	57.0	30.3	From randomly
	1993	3435	18+	27.5	67.5	32.3	29.0	72.9	40.6	selected clinics
Kyrgyzstan	1993	4053	18-59	23.6	30.6	4.2	24.2	35.0	10.7	
Malaysia	1990	4747	18-64	23.4	28.7	4.7	23.0	26.0	7.9	Mixed ethnic groups
	1996	28737	20+	22.7	24.1	4.0	23.1	29.0	7.6	Mixed ethnic groups
Mauritius	1987	5021	25-74	22.8	26.1	3.4	24.2	37.9	10.4	Mixed ethnic groups
	1992	5111	25-74	24.1	35.7	5.3	25.7	47.7	15.1	Mixed ethnic groups
Mexico	1988	19022	Adults				22.9	25.0		Uncertain sampling methods
	1995	2042	Adults	25.4	50.0	11.0	26.9	58.0	23.0	
Morocco	1984	NR	20+	22.9		2.3	25.2		14.6	

Country	Year	Base	Age (y)	BMI - Men Mean (kg/m²)	≥25 (%)	≥30 (%)	BMI - Women Mean (kg/m²)	≥25 (%)	≥30 (%)	Notes
Netherlands	1981	~9000	20+	23.7		3.9	23.4		6.2	
	1982	~9000	20+	23.6		3.5	23.3		5.9	
	1982-4	~9000	20+	24.3	37.0	3.7	23.5	29.4	6.0	
	1984	~9000	20+	23.7		3.9	23.4		6.2	
	1985	~9000	20+	23.6		3.6	23.3		6.0	
	1985-7	~9000	20+	24.3	38.3	3.8	23.6	30.0	6.3	
	1987	~9000	20+	23.8		4.1	23.4		6.3	
	1988	~9000	20+	24.0		4.6	23.5		6.8	
	1987-91	36266	20-59	24.9		7.4	24.3		9.0	3 municipalities
	1989-91	~9000	20+	24.5	39.3	5.1	23.8	31.3	7.1	
	1993-5	12905	20-59	25.8		8.0	25.0		10.0	3 municipalities
	1993-5	~9000	20+	24.7	42.0	5.9	24.0	33.3	7.4	
	1995	4601	20-59	25.5	53.3	10.0	24.8	38.9	10.3	3 municipalities
	1996-8	21764	20+	24.8	43.5	6.5	24.3	36.5	9.1	
Neth Antilles	1993-4	2248	18+	26.0		18.7	28.3		36.2	Curacao
New Caledonia	1992-4	6503	30-59	27.1			28.6	70.4		Mixed ethnic groups
New Zealand	1989	3204	15+	25.3	53.0	10.0	24.7	40.0	13.0	Mixed ethnic groups
	1997	4636	15+	26.2	55.1	14.7	26.1	49.3	19.2	Mixed ethnic groups
Norway	1994	3144	16-79	24.6	42.0	5.0	23.4	26.0	5.0	
Pakistan	1995	1404	25+	22.1			23.9	35.9		1 urban, 1 rural area
Philippines	1993	9585	20+	21.5	12.7	1.7	21.5	15.2	3.4	
Samoa	1978	1484	25-74	27.1		27.5	29.1	74.8	48.5	3 regions
	1991	1729	25-74	30.5		46.8	33.2		66.1	3 regions
Saudi Arabia	1990-3	10165	20+	25.6	50.9	17.8	26.9	56.0	26.6	
Seychelles	1987	1078	25-64	23.9		4.2	26.2		20.9	Mahe, mixed ethnic groups
	1994	806	35-64	24.5			28.0			Mahe, mixed ethnic groups
Singapore	1982-5	2143	18-69	22.5	17.4		23.1	30.4		Mixed ethnic groups
	1992	3568	18-69	23.0	27.5		22.6	24.9		Mixed ethnic groups
South Africa	1979	7187	15-64	26.0	56.6	14.7	25.8		18.0	Whites, SW Cape
	1998	13827	15+	23.4	28.5	9.1	26.5	54.9	29.4	
Spain	1989-94	5388	25-60	25.6		11.5	25.3		15.2	4 regions
Sweden	1980-1	14474	16-84	24.2	35.7	4.7	23.4	27.6	5.4	
	1988-9	12387	16-84	24.4	38.2	5.2	23.4	27.9	5.6	
	1996-7	11417	16-84	25.0	45.9	6.8	24.0	33.6	7.2	
Switzerland	1992-3	15288	15+	24.5	39.2	6.1	22.4	21.8	4.7	
	1997	79311	15+	24.7	42.1	6.7	23.3	28.0	6.9	
Togo	1986	4443	Adults	22.0	14.6	2.6	23.0	22.8	3.5	Urban
Tunisia	1976-81	5613	20+	23.2			25.2			1 urban, 1 rural region
	1990	NR	Adults	22.8	22.4	2.4	24.9	41.0	8.3	
Turkey	1990	3689	20+	25.1		9.0	26.3		21.7	
United Kingdom	1980	8434	20-64	24.8	43.0	8.0	24.0	34.0	9.0	
	1986	2319	16-64	24.9	45.0	8.0	24.6	36.0	12.0	
	1988	1747	16-50	23.8			23.2			Men oversampled
	1991	NR	16-64	25.7		12.7	25.3		15.0	
	1993	15284	16+	25.9	57.6	13.2	25.7	48.6	16.4	
	1994	14679	16+	26.0	58.1	13.8	25.8	48.7	17.3	
	1995	14436	16+	26.1	59.3	15.3	25.9	50.4	17.5	
	1996	15061	16+	26.3	61.0	16.4	26.0	52.0	18.4	
	1997	7939	16+	26.5	62.2	17.0	26.2	52.5	19.7	
	1998	14330	16+	26.5	62.8	17.3	26.4	53.3	21.2	
United States	1960-2	~7800	20-74	25.2	48.2	10.4	24.6	38.6	15.0	NHES I
	1971-4	~28000	20-74	25.6	52.9	11.8	24.7	39.8	16.2	NHANES I
	1976-80	20325	20-74	25.5	51.4	12.3	25.1	40.8	16.5	NHANES II
	1982-7	14407	25-74	25.6			27.8			
	1988	1892	16-50	24.9			24.1			
	1987-91	114954	25-74	26.0			26.9			
	1988-94	~40000	20-74	26.3	59.4	20.0	26.1	49.8	24.9	NHANES III
Uruguay	1998	900	18+	26.0	57.0	17.0	25.9	49.0	19.0	Montevideo
Vietnam	1981-5	12800	18+	19.1			19.1			10 rural areas
	1987-9	12442	18+	19.3			19.2			Urban, rural

For references to the original studies from which these data are extracted contact the authors of this supplement or Professor Boyd Swinburn (swinburn@deakin.edu.au)

Source: Professor Boyd Swinburn, Deakin University, Victoria, Australia, personal communication.

Figure 6.9 Prevalence of obesity, latest available data, all available countries

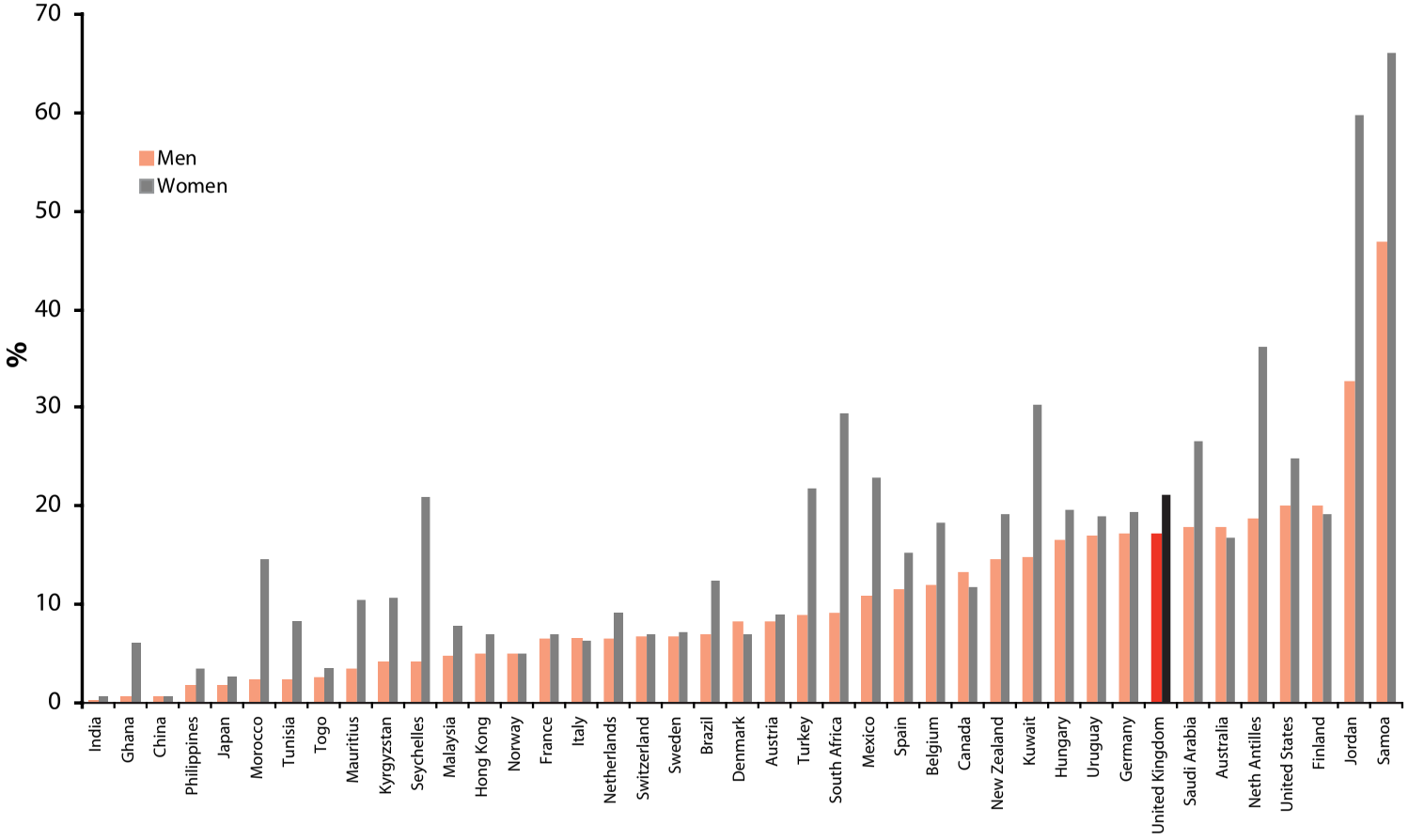


Table 6.10 Physical activity level by sex and age, 1994 and 1998, England

		Summary activity level*							
		All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
		%	%	%	%	%	%	%	%
MEN									
1994									
Group 1 - Low		30	17	19	24	28	37	46	67
Group 2 - Medium		34	33	36	33	32	33	38	26
Group 3 - High		37	50	45	43	40	30	16	7
1998									
Group 1 - Low		35	16	22	28	33	44	52	72
Group 2 - Medium		28	26	30	29	31	24	31	21
Group 3 - High		37	58	48	43	36	32	17	7
Bases	*1994*	*7,177*	*968*	*1,434*	*1,329*	*1,127*	*1,001*	*877*	*441*
	1998	*7,193*	*875*	*1,338*	*1,305*	*1,289*	*987*	*837*	*562*
WOMEN									
1994									
Group 1 - Low		35	27	24	25	27	37	51	75
Group 2 - Medium		43	44	49	49	46	43	39	21
Group 3 - High		22	29	28	27	27	21	10	5
1998									
Group 1 - Low		41	33	28	29	34	42	61	82
Group 2 - Medium		34	35	41	39	37	37	28	14
Group 3 - High		25	32	31	32	30	21	12	4
Bases	*1994*	*8,627*	*1,080*	*1,723*	*1,520*	*1,300*	*1,059*	*1,120*	*825*
	1998	*8,715*	*1,006*	*1,630*	*1,573*	*1,484*	*1,148*	*967*	*907*

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= less than one occasion of 30 minutes a week.*

Source: Joint Health Surveys Unit (1999) Health Survey for England 1998 The Stationery Office: London.

Figure 6.10a Physical activity levels, men, 1998, England

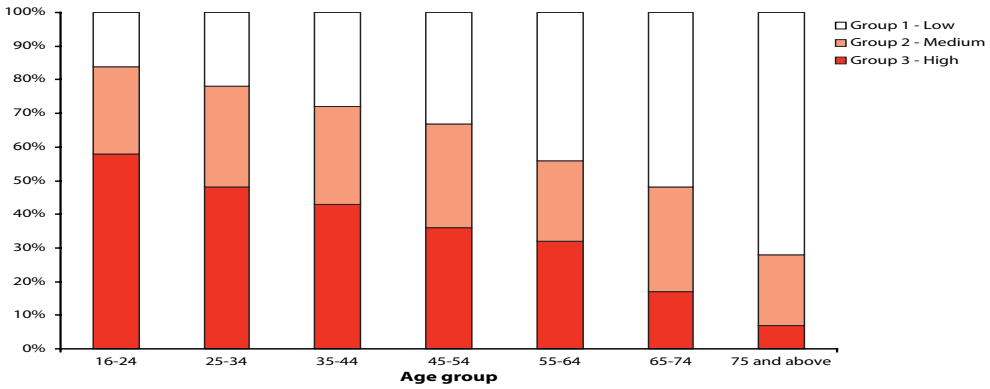


Figure 6.10b Physical activity levels, women, 1998, England

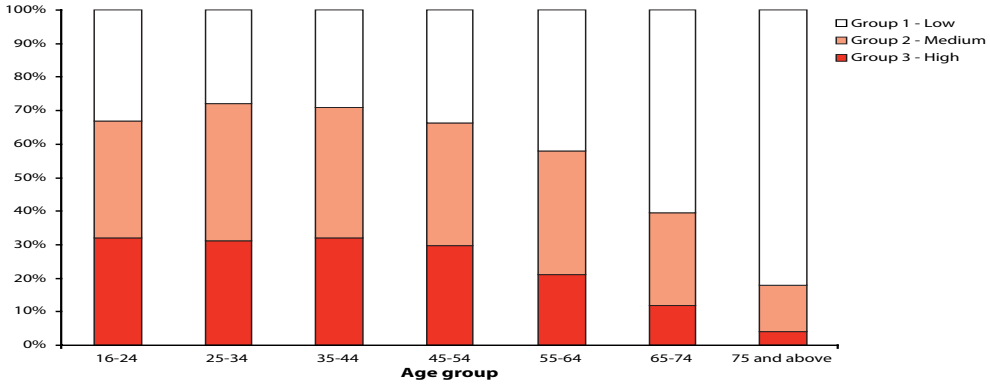


Table 6.11 Number of hours spent participating in various physical activities in a typical week, 1997, European Union countries

	None	<1hour	1-3 hours	3-5 hours	> 5hours
	%	%	%	%	%
Austria	16	4	18	20	42
Belgium	42	7	18	15	14
Denmark	24	6	16	22	30
Finland	10	5	18	26	41
France	36	7	20	20	16
Germany	31	6	19	19	24
Greece	40	4	18	22	16
Ireland	14	5	16	28	37
Italy	39	7	20	19	14
Luxembourg	20	8	19	21	30
Netherlands	19	6	18	18	38
Portugal	61	7	15	11	5
Spain	37	11	17	21	12
Sweden	12	4	16	23	45
United Kingdom	24	7	17	25	27
EU average*	32	7	18	21	21

Adults aged 15 and over.

** weighted according to population size*

Source: *Institute of European Food Studies, Trinity College, Dublin (1999) A Pan-EU Survey on Consumer Attitudes to Physical Activity, Body-weight and Health. IEFS: Dublin.*

Figure 6.11 Percentage of adults aged 15 and over who do no physical activity in a typical week, 1997, European Union countries