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Diabetes mellitus in the United Kingdom

Questions this chapter will help you answer

- What is the prevalence of diabetes in the UK?
- Which ethnic groups are more affected?
- How is diabetes care organised in the UK?
- What role do specialists outside the practice play?
- How does Diabetes UK help?

... few professionals in the field doubt that effective prevention, management and early detection of problems is cost-effective in the long run.

Audit Commission (2000)

Physically active people have a 20–30% reduced risk of premature death and up to a 50% reduced risk of major chronic disease such as coronary heart disease, stroke, diabetes and cancer.

Prevalence and incidence

The prevalence of diabetes in the UK (Figure 1.1) suggested by most authorities is now well over 3%, and undiagnosed diabetes existing in the population may account for a further 2%. The prevalence of diabetes is considerably increased in certain ethnic groups (South Asians, i.e. Asians from the Indian subcontinent, and those of African/Caribbean descent) and is higher in the older age range of all groups. Over the age of 75 years, this figure may increase to as much as 10% of the population. The increase in prevalence of diabetes in the UK population relating to age is shown in Figure 1.2.

Figures available for the prevalence of diabetes in children and young people show that this condition has become more common over the

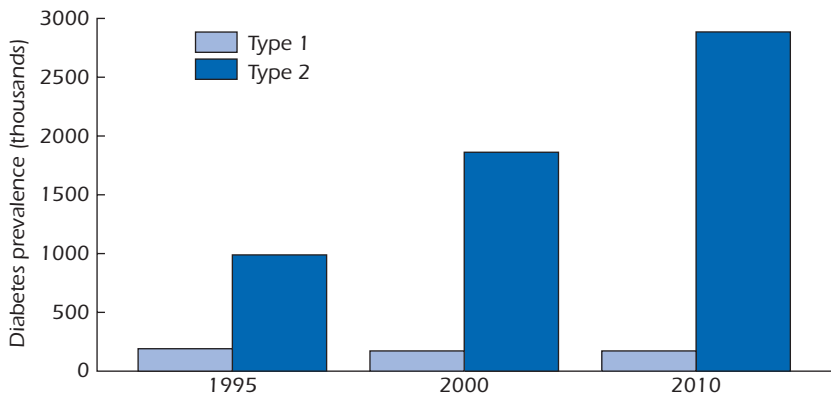


Figure 1.1 Prevalence of diabetes in the UK
 (Data from Amos et al, *Diabetes Med* 1997 14 [Suppl. 5], S1–S85)

past 20 years and that the increase is mainly in social classes I and II. The prevalence of type 1 (previously known as insulin-dependent) diabetes in people under the age of 20 years is 0.14% (1.4 per 1000), which means that there are probably more than 20 000 young people with diabetes in the UK. There is a rising trend in the incidence of diabetes in this age group.

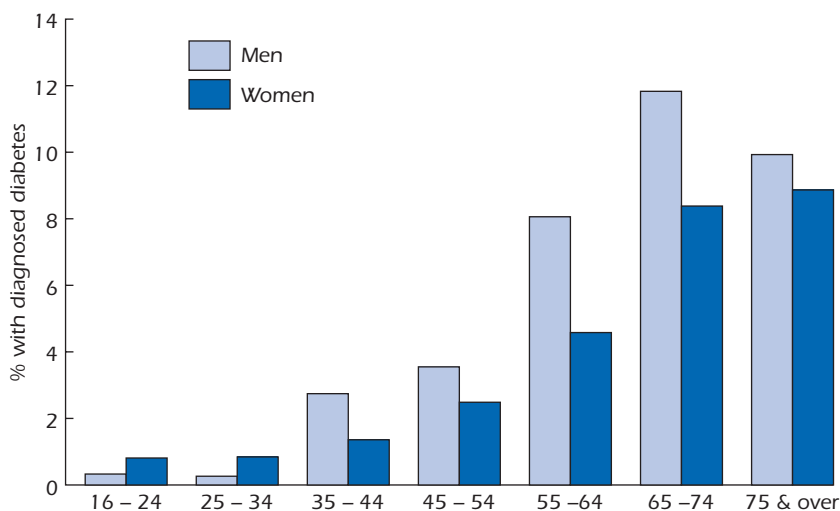


Figure 1.2 Prevalence of diagnosed diabetes by sex and age, England, 2003

(From Joint Health Surveys Unit, 2004, with permission)

People with type 2 (previously known as non-insulin-dependent) diabetes may remain undiagnosed for months or years. The condition may be recognised only by coincidence, after routine screening (e.g. at a medical examination, a routine outpatient visit or before surgery) or during a hospital admission.

Type 2 diabetes is thought of as a condition of the older person. However, in the age range 15–44 years, almost 100 000 people in the UK have type 2 diabetes. This is due to changes in lifestyle with decreasing activity and increasing waistlines. If a woman has a waistline of over 35 inches (89 cm), she is at risk of type 2 diabetes. For a man, the corresponding figure is 40 inches (102 cm).

Type 2 diabetes is said to be a time bomb in terms of coronary heart disease. People are living longer, becoming less active and eating a diet higher in saturated fat than in previous decades. Men with type 2 diabetes have a 2–4 times greater annual risk of coronary heart disease, whereas women fare even less well, especially after the menopause when they lose their cardioprotection. This gives them a 3–5 times increased risk. Guidelines to assess the 10-year risk have been published in the journal *Heart* (Wood et al, 1998), but this has largely been superseded by the Joint British Societies (2005) guidance on the prevention of cardiovascular disease in clinical practice, which considers that all people with diabetes should be treated as though they have already suffered a coronary event (see Chapter 24).

Type 2 diabetes is only one part of the metabolic syndrome of dyslipidaemia, hypertension and obesity. All of these need tackling if we are to avoid an escalation in mortality through diabetes. By the time they are diagnosed with type 2 diabetes, 50% of people have evidence of complications (Diabetes UK, 2004).

In the UK, there are over 2 million adults with known diabetes; most of these (75–90%) have type 2 diabetes mellitus. It is estimated that there are another million people with undiagnosed diabetes in the UK.

Type 2 diabetes is associated with insulin resistance (see Chapter 7).

Ethnic variations

In contrast to the 3% prevalence of diabetes in the general population, the condition affects about 20% of the South Asian community and 17% of the African/Caribbean community (Table 1.1). As in the general population, the prevalence rises with age, and significant increases are seen in older people of certain ethnic groups. Both these populations are more at risk of cardiovascular disease.

The consequences of diabetes: microvascular complications

These include retinopathy, nephropathy, neuropathy and peripheral vascular disease.

Retinopathy

Damage to the eye is caused when the blood vessels in the retina become blocked or leaky, or grow haphazardly. This may not affect the eyesight

Table 1.1 Prevalence of diagnosed diabetes by sex and ethnic group in England, 1999

Age	16–34 years (%)	35–54 years (%)	55 years and over (%)	All ages (%)
Men				
Bangladeshi	19.0	2.4	10.6	30.6
Black Caribbean	8.3	1.9	3.2	17.6
Chinese	4.8	–	2.2	16.1
Indian	9.8	0.7	8.0	19.2
Irish	4.5	1.6	0.8	11.8
Pakistani	17.9	0.8	9.6	39.0
General population	3.3	0.5	2.2	6.9
Women				
Bangladeshi	14.6	0.4	12.1	26.0
Black Caribbean	10.5	0.4	3.9	25.7
Chinese	5.3	1.6	0.7	11.8
Indian	7.2	0.6	4.4	15.3
Irish	2.6	–	1.9	5.9
Pakistani	14.0	1.1	7.4	28.3
General population	2.5	1.3	3.4	5.3

Data from the 1999 Health Survey for England (2001)

until it has become advanced, and only early screening will pick up potential problems in time to save the individual's sight.

A key target of the National Service Framework for Diabetes (Department of Health, 2001) is that, by 2006, a minimum of 80% of people with diabetes are to be offered screening for the early detection and treatment of diabetic retinopathy, rising to 100% by the end of 2007. A position statement from Diabetes UK (2005) suggests, however, that this target is unlikely to be met in many areas. Funding has been made available for digital cameras, and a quality assurance scheme has to be in place to ensure an effective service.

- Diabetes is the leading cause of blindness in people of working age in the UK (Kohner et al, 1996).
- People with diabetes are up to 20 times more likely to go blind than people without diabetes (Hamilton et al, 1996).
- Treatment can prevent blindness in 90% of those at risk if applied early and adequately (Department of Health/British Diabetic Association, 1995).
- Twenty years after diagnosis, nearly all people with type 1 diabetes will have some form of retinopathy (Campbell and Lebowitz, 1996). Blindness is more prevalent in people who have type 1 diabetes than in the population at large (Krentz, 2000).
- Twenty years after diagnosis, 60% of those with type 2 diabetes will have some degree of retinopathy (Department of Health/British Diabetic Association, 1995).

Appropriate interventions including lifestyle changes and the control of blood pressure and blood glucose, as well as specific treatment through eye clinics, may prevent 60–70% of individuals with maculopathy and 90% of those with proliferative retinopathy going blind in at least one eye. The cost of introducing effective eye screening is high, but the National Screening Committee accepts that the cost in terms of disability and social care, not to mention individual suffering, outweighs this. Lack of screening may also result in costly compensation claims. Scotland introduced a national eye screening programme in 2002.

Nephropathy

Nephropathy is a major cause of kidney failure and death, yet Diabetes UK found that almost half of local health services do not ensure access to jointly run diabetes and renal clinics. Nephropathy is caused by

protracted poor glycaemic and blood pressure control. Good communication between renal and diabetes teams enhances care.

- Diabetic nephropathy (diabetic kidney disease) develops in about one third of people with diabetes (International Diabetes Federation, 2003).
- Diabetes is now the leading cause of end stage renal failure (Harvey, 2003).
- Approximately 20% of people with type 1 diabetes will reach end stage kidney disease (Krentz, 2000).
- The risk of kidney damage increases with the duration of diabetes. Twenty-five years after diagnosis, the risk is 40–50% for both types of diabetes (Hasslacher and Bohm, 2004).
- Approximately 1000 people in the UK go onto dialysis each year because of their diabetes (UK Renal Registry, 2002).

Neuropathy and peripheral vascular disease

Foot ulceration is at least 50 times more common in people with diabetes than in those without. If the ulceration is the result of peripheral vascular disease, amputation is often the outcome. In the UK, diabetes is the second most common cause of lower limb amputation and the most common cause of non-traumatic amputation (Department of Health, 2001).

- The rate of lower limb amputation in people with diabetes is 15 times higher than in people without diabetes (Williams and Pickup, 2004).
- 15% of foot ulcers will lead to amputation (Defronzo et al, 2004).
- 5% of, or around 90 000, people with diabetes may develop a foot ulcer in 1 year (National Institute for Health and Clinical Excellence, 2004).
- Uncontrolled studies have shown that the rate of amputation may be reduced by 40% or more through screening, education and the development of multidisciplinary diabetes foot care teams (Ross and Gadsby, 2004).

Evidence of neuropathy may be found in up to 40% of people with diabetes (30% of those in hospital studies but over 50% of patients

with type 2 diabetes), causing problems for about one third of them. One of the most distressing and often hidden problems is that of male impotence: varying degrees of erectile dysfunction can affect one in two men with diabetes.

The consequences of diabetes: macrovascular complications

Heart disease and stroke

Cardiovascular disease includes coronary heart disease and stroke. It is the major contributory factor in the mortality of type 2 diabetes: 80% of people with diabetes will die from cardiovascular complications (Barnett and O’Gara, 2003).

Diabetes, hypertension and heart disease (all part of the metabolic syndrome) are the most frequent cause of stroke. As obesity and physical inactivity increase, so does the incidence of stroke – and it is affecting an increasingly younger age group.

As mentioned above, 50% of people with type 2 diabetes will have complications at diagnosis. Most of these will have evidence of cardiovascular disease as well as other problems. Over 3% of the population are diagnosed with diabetes, yet they account for between 10% and 15% of those admitted to hospital with a heart attack and 20% of those who die from one.

- People with diabetes have up to a fivefold increased risk of developing cardiovascular disease.
- Middle-aged men with diabetes are five times more likely to die of cardiovascular disease than men without diabetes (Laing et al, 1999).
- Women with diabetes are eight times more likely to die of cardiovascular disease than women without diabetes (Laing et al, 1999).
- Cardiovascular disease is rare in people with type 1 diabetes in the 30 years following diagnosis. At 40 years after diagnosis, however, cardiovascular disease accounts for 30% of deaths in this group (British Medical Association, 2004).
- People with diabetes are five times more likely to suffer heart failure (Yudkin et al, 1996).