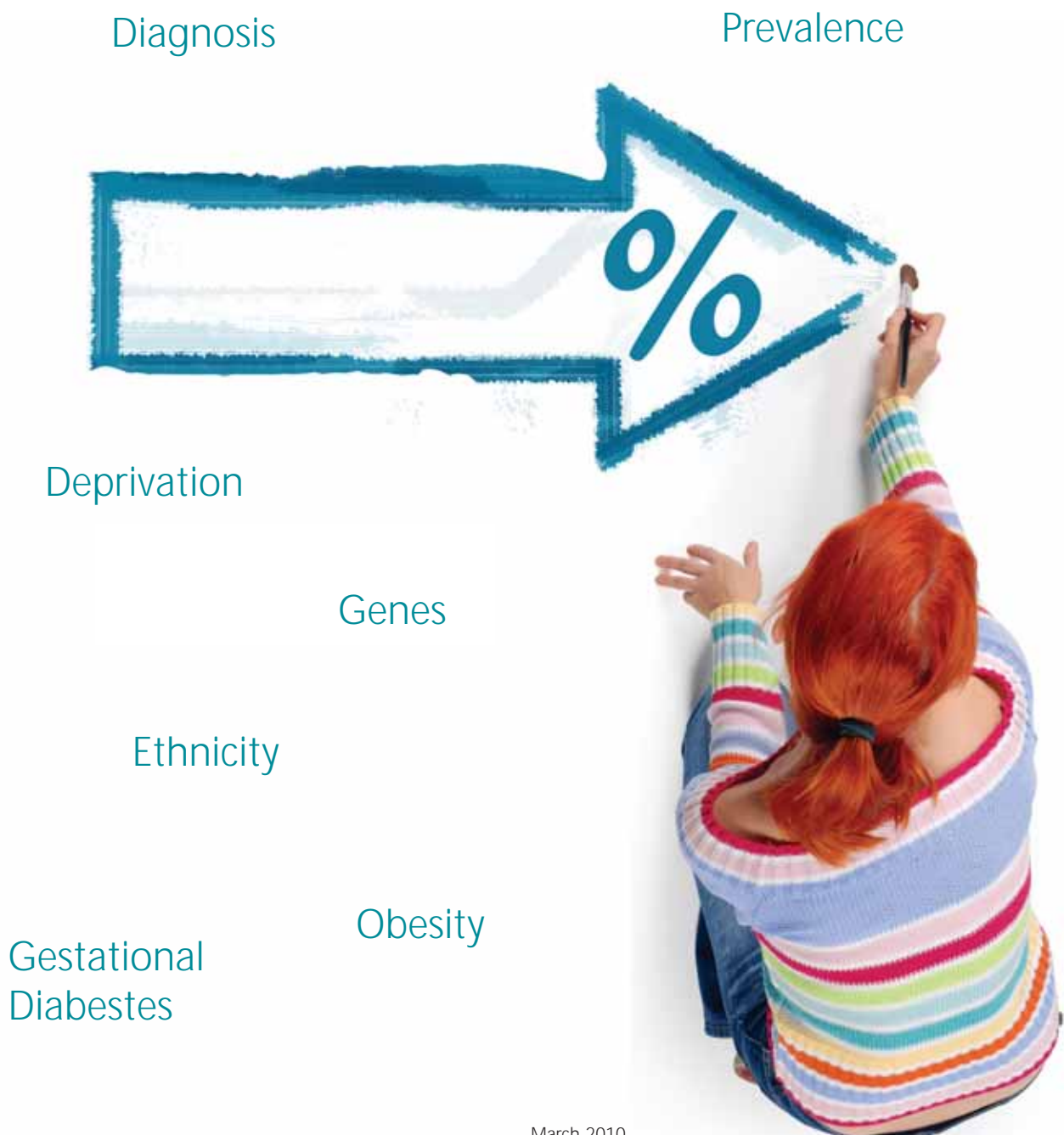


Diabetes in the UK 2010: Key statistics on diabetes



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Introduction

This report looks at diabetes in the UK today. It contains statistics about who is affected and how. Diabetes is serious. If left untreated, it can lead to heart disease, stroke, blindness, and kidney failure.

Diabetes mellitus is a condition in which the amount of glucose (sugar) in the blood is too high because the body cannot use it properly. There are two main types of diabetes.

Type 1 diabetes develops if the body cannot produce any insulin. Insulin is a hormone which helps the glucose to enter the cells where it is used as fuel by the body. Type 1 diabetes usually appears before the age of 40. It is the least common of the two main types and accounts for around 10 per cent of all people with diabetes.

Type 2 diabetes develops when the body can still make some insulin, but not enough, or when the insulin that is produced does not work properly (known as insulin resistance). In most cases this is linked with being overweight. This type of diabetes usually appears in people over the age of 40, though in South Asian and African-Caribbean people, it often appears after the age of 25. However, recently, more children are being diagnosed with the condition, some as young as seven. Type 2 diabetes is the more common of the two main types and accounts for around 90 per cent of people with diabetes.

Most health experts agree that the UK is facing a huge increase in the number of people with diabetes. Since 1996 the number of people diagnosed with diabetes has increased from 1.4 million to 2.6 million. By 2025 it is estimated that over four million people will have diabetes. Most of these cases will be Type 2 diabetes, because of our ageing population and rapidly rising numbers of overweight and obese people.

The figures are alarming and confirm that diabetes is one of the biggest health challenges facing the UK today. If we are to curb this growing health crisis and see a reduction in the number of people dying from diabetes and its complications, we need to increase awareness of the risks, bring about wholesale changes in lifestyle, improve self-management among people with diabetes and improve access to integrated diabetes care services.

How common is diabetes?

Globally

- The estimated diabetes prevalence for 2010 is 285 million and is expected to affect 438 million people by 2030.
- The International Diabetes Federation (IDF) estimates that in 2010 the five countries with the largest numbers of people with diabetes are India, China, the United States, Russia and Brazil.
- The IDF also reported that in 2010 the five countries with the highest diabetes prevalence in the adult population are Nauru, the United Arab Emirates, Saudi Arabia, Mauritius and Bahrain.
- Low and middle income countries face the greatest burden of diabetes.¹

UK

Diagnosed

- There are 2.6 million people who have been diagnosed with diabetes in the UK (2009).²
- By 2025, there will be more than four million people with diabetes in the UK.³
- In 2008 145,000 people were diagnosed with diabetes in the UK. To put this into context, this is more than the population of Middlesbrough.
- It is equivalent to:
 - around 400 people every day
 - almost 17 people every hour
 - three people every ten minutes.⁴

Undiagnosed

It is estimated that there are up to half a million more people in the UK who have diabetes but have not been diagnosed.⁵

It is estimated that up to one in 20 people in England has diabetes (diagnosed and undiagnosed). UK-wide, it is not quite one in 20.

Prevalence

- In 2009, the prevalence of diabetes in the adult population across the UK was as follows:

Country	Prevalence	Number of people
England	5.1%	2,213,138
Northern Ireland	4.5%	65,066
Wales	4.6%	146,173
Scotland	3.9%	209,886

- This gives a UK average prevalence of 4 per cent.⁶
- To find the prevalence for your primary care trust (PCT), please use the following website: www.gpcontract.co.uk/index.php?year=7.

Use Diabetes UK's Infobank to find information on diabetes healthcare services in your area. This includes comparisons with other areas and measures progress towards meeting National Service Framework targets: www.diabetes.org.uk/InfoBankUK/.

Type 1 and Type 2

For adults in the UK, we estimate that:

- 10 per cent of people with diabetes have Type 1 diabetes.
- 90 per cent of people with diabetes have Type 2.⁷

If we include children, we estimate that:

- 15 per cent of people with diabetes have Type 1.
- 85 per cent of people with diabetes have Type 2.⁸

Adults: England

- Prevalence of diabetes by age group in England (2006):⁹

Age	Men	Women
16–24	0.8%	0.9%
25–34	1.2%	1.2%
35–44	2.4%	1.2%
45–54	6.0%	3.6%
55–64	8.5%	6.0%
65–74	15.7%	10.4%
75+	13.5%	10.6%

- In 2001, one in five people over the age of 85 had diabetes. Around one in four people in care homes (27 per cent) had diabetes which is a higher prevalence than in the comparable general population. The figures may have increased since 2001.¹⁰

Adults: Scotland

- More men than women have been diagnosed with diabetes. 54.5 per cent of people with diabetes in Scotland are male; 45.5 per cent are female.¹¹

- Distribution of diabetes by age group in Scotland (2008)*:

Age	Percentage
15–44	11%
45–64	38%
65–84	46%
85+	4%

Adults: Wales

- In a self-completed questionnaire, 6 per cent of adults surveyed for the Welsh Health Survey reported having diabetes.¹²
- Prevalence of diabetes by age group in Wales (2008):

Age	Percentage
16–24	0%
25–34	1%
35–44	2%
45–54	6%
55–64	9%
65–74	15%
75+	17%

Adults: Northern Ireland

- In a survey in Northern Ireland (2005/2006), 46 per cent of people who had diabetes were men and 54 per cent were women.¹³
- Distribution of diabetes by age group in Northern Ireland*:

Age	Percentage
16–24	0.5%
25–34	2.8%
35–44	5.6%
45–54	12.4%
55–64	22.6%
65–74	30%
75+	26%

- The Northern Ireland Wellbeing survey splits those people surveyed with diabetes into age groups.

* This is not prevalence, but distribution across the age groups.

Children

Type 1

- The current estimate of prevalence of Type 1 diabetes in children in the UK is one per 700–1,000. This gives a total population of 25,000 under-25s with Type 1 diabetes.
- That means that local authorities and primary care trusts (PCTs) can expect between 100 and 150 children with diabetes to live in their area.
- The peak age for diagnosis is between 10 and 14 years of age.¹⁴

Type 2

- Prevalence figures for children are limited but as many as 1,400 children may have Type 2 diabetes in the UK.¹⁵
- In 2000, the first cases of Type 2 diabetes in children were diagnosed in overweight girls aged nine to 16 of Pakistani, Indian or Arabic origin. It was first reported in white adolescents in 2002.¹⁶
- In 2004, children of South Asian origin were more than 13 times more likely to have Type 2 diabetes than white children.¹⁷

Total children with diabetes

- There are over 22,000 people under the age of 17 with diabetes in England. 97 per cent have Type 1 diabetes, 1.5 per cent have Type 2 and 1.5 per cent have another type of diabetes.

Please see the table below for an age breakdown:¹⁸

Age	Percentage of Type 1	Percentage of Type 2	Percentage of other
0–4	4%	0%	9.7%
5–9	19.1%	1.8%	10.6%
10–14	42.5%	39.1%	35.6%
15	11.4%	22.0%	14.1%
16	12.2%	21.7%	15.9%
17	10.7%	15.6%	14.1%

Who is at risk of diabetes?

Diabetes is a common health condition. The chances of developing it may depend on a mix of genes, lifestyle and environmental factors.

The risk factors are different for Type 1 and Type 2 diabetes. Type 1 diabetes develops when the insulin-producing cells in the pancreas have been destroyed. No one knows for certain why these cells have been damaged, but the most likely cause is the body having an abnormal reaction to the cells. This may be triggered by a viral or other infection.

Type 2 diabetes usually appears in middle-aged or older people, although more frequently it is being diagnosed in younger overweight people, and it is known to affect Black and South Asian people at a younger age. Type 2 diabetes occurs when the body is not making enough insulin, or the insulin it is making is not being used properly. The risk of developing Type 2 diabetes can be reduced by changes in lifestyle.¹⁹

Some of the risk factors are provided in more detail below:

Genes

Type 1 diabetes

On average:

- if a mother has the condition, the risk of developing it is about 2 per cent
- If a father has the condition, the risk of developing it is about 8 per cent
- if both parents have the condition, the risk of developing it is up to 30 per cent
- if a brother or sister develops the condition, the risk of developing it is 10 per cent (rising to 15 per cent for a non-identical twin and 40 per cent for an identical twin).

Type 2 diabetes

On average:

- if either parent has the condition, the risk of developing it is 15 per cent
- if both parents have the condition, the risk of developing it is 75 per cent
- if a non-identical twin has the condition, the risk of developing it is 10 per cent
- if an identical twin has the condition, the risk of developing it is 90 per cent.²⁰

Ethnicity

- Type 2 diabetes is up to six times more common in people of South Asian descent and up to three times more common among people of African and African-Caribbean origin.²¹
- According to the *Health Survey for England 2004*, doctor-diagnosed diabetes is almost four times as prevalent in Bangladeshi men, and almost three times as prevalent in Pakistani and Indian men compared with men in the general population.
- Among women, diabetes is more than five times as likely among Pakistani women, at least three times as likely in Bangladeshi and Black Caribbean women, and two-and-a-half times as likely in Indian women, compared with women in the general population.

- In the same survey, diabetes was generally rare among those aged 16–34, but was highest among Indian men (2 per cent), Black African men (1.7 per cent) and Irish women (1.7 per cent).²²
- Prevalence of self-reported, doctor-diagnosed diabetes in England by minority ethnic group and sex:²³

Minority ethnic group	Men	Women
Bangladeshi	8.2%	5.2%
Black African	5%	2.1%
Black Caribbean	10%	8.4%
Chinese	3.8%	3.3%
Indian	10.1%	5.9%
Irish	3.6%	2.3%
Pakistani	7.3%	8.6%
General population	4.3%	3.4%

Obesity

Of all serious diseases, Type 2 diabetes has the strongest association with obesity.²⁴

- Almost two in every three people in the UK are overweight or obese (61.9 per cent of women and 65.7 per cent of men).²⁵
- In 2006, almost one in four children in England measured in reception year were overweight or obese. In Year 6 in England, the rate was nearly one in three.²⁷
- The Department of Health recommends that everyone has at least 30 minutes moderate intensity physical activity a day on five or more days a week.²⁸
- More men in the UK meet recommended physical activity levels than women.
- About a third of men over 45 and a quarter of women over 45 are meeting recommended physical activity levels.²⁹

Deprivation

Deprivation is strongly associated with higher levels of obesity, physical inactivity, unhealthy diet, smoking and poor blood pressure control. All these factors are inextricably linked to the risk of diabetes or the risk of developing serious complications for those already diagnosed.³⁰

The statistics on deprivation shown here are taken from three different health surveys.^{31 32 33} Statistics for England and Scotland are broken down into five household income groups. Statistics for Wales are broken down into eight socio-economic groups so it is not always possible to make direct comparisons.

- The most deprived people in the UK are two-and-a-half times more likely than the average to have diabetes at any given age.³⁴
- Women in England who live in homes with the lowest income are more than four times as likely to get diabetes as those who live in homes with the highest income.
- The prevalence of diabetes among men in England is highest in those who live in homes with the lowest income (7 per cent) and the highest income (6.8 per cent).
- Diabetes in Wales is almost twice as high in the most deprived areas compared to the least deprived.
- In Scotland, the odds of developing Type 2 diabetes are 77 per cent higher for people from the most deprived areas compared to those in the most affluent area.

Gestational diabetes

Gestational diabetes is a type of diabetes that arises during pregnancy (usually during the second or third trimester). In some women, it occurs because the body cannot produce enough insulin to meet the extra needs of pregnancy. In other women, it may be found during the first trimester of pregnancy, and in these women, the condition most likely existed before the pregnancy.

- Gestational diabetes affects up to 5 per cent of all pregnancies.³⁵
- Women who are overweight or obese are at a higher risk of gestational diabetes.
- The lifetime risk of developing Type 2 diabetes after gestational diabetes is 30 per cent.³⁶

The impact

Good diabetes management has been shown to reduce the risk of complications.³⁷ But when diabetes is not well managed, it is associated with serious complications including heart disease, stroke, blindness, kidney disease, nerve damage and amputations leading to disability and premature mortality. There is also a substantial financial cost to diabetes care as well as costs to the lives of people with diabetes.

- By the time they are diagnosed, half of the people with Type 2 diabetes show signs of complications.³⁸
- Complications may begin five to six years before diagnosis and the actual onset of diabetes may be ten years or more before clinical diagnosis.³⁹

Cardiovascular disease

The term cardiovascular disease (CVD) includes heart disease, stroke and all other diseases of the heart and circulation, such as hardening and narrowing of the arteries supplying blood to the legs, which is known as peripheral vascular disease (PVD). People with diabetes have an increased risk of CVD compared with those without diabetes. The reason is prolonged, poorly controlled blood glucose levels, which increases the likelihood of furring up of the vessels leading to CVD. Research shows that you can reduce the overall chance of developing CVD by improving dietary habits, managing weight and keeping active. Using medication where required will also help to control risk factors such as diabetes, high cholesterol, triglyceride levels and high blood pressure.⁴⁰

- Cardiovascular disease is a major cause of death and disability in people with diabetes, accounting for 44 per cent of fatalities in people with Type 1 diabetes and 52 per cent in people with Type 2.⁴¹
- The cardiovascular risk is the same for people with diabetes as people without who have had a previous heart attack.⁴²
- The risk of death from coronary heart disease associated with Type 2 diabetes is about 50 per cent greater in women than it is in men.⁴³
- People with Type 2 diabetes have a two-fold increased risk of stroke within the first five years of diagnosis compared with the general population.⁴⁴

Kidney disease

Kidney disease can happen to anyone but it is much more common in people with diabetes and people with high blood pressure. The kidneys are the organs that filter and clean the blood and get rid of any waste products by making urine. They regulate the amount of fluid and various salts in the body, helping to control blood pressure. They also release several hormones. Kidney disease (or nephropathy) is caused by damage to small blood vessels making the kidneys work less efficiently and this can cause the kidneys to start to fail. Keeping blood glucose levels as near normal as possible and blood pressure well controlled can greatly reduce the risk of kidney disease developing as well as other diabetes complications.⁴⁵

- Almost one in three people with Type 2 diabetes develops overt kidney disease.⁴⁶
- Diabetes is the single most common cause of end stage renal disease.⁴⁷
- Kidney disease accounts for 21 per cent of deaths in Type 1 diabetes and 11 per cent of deaths in Type 2.⁴⁸

Eye disease

People with diabetes are at risk of developing a complication called retinopathy. Retinopathy affects the blood vessels supplying the retina – the seeing part of the eye. Blood vessels in the retina of the eye can become blocked, leaky or grow haphazardly. This damage gets in the way of the light passing through to the retina and if left untreated can damage vision. Keeping blood glucose, blood pressure and blood fat levels under control will help to reduce the risk of developing retinopathy.⁴⁹ For protection against retinopathy, it is best to have eyes screened with a digital camera when first diagnosed and then every year, to identify and then treat eye problems early.

- People with diabetes are 10 to 20 times more likely to go blind than people without.⁵⁰
- Diabetes is the leading cause of blindness in people of working age in the UK.⁵¹ It is estimated that there are 4,200 people in England who are blind due to diabetic retinopathy. This increases by 1,280 each year.⁵²
- Within 20 years of diagnosis nearly all people with Type 1 and almost two thirds of people with Type 2 diabetes (60 per cent) have some degree of retinopathy.⁵³
- People with diabetes are twice as likely to suffer from cataracts or glaucoma than the general population.⁵⁴

Amputation

Foot problems can affect anyone who has diabetes. Diabetes, particularly if it is poorly controlled, can damage your nerves, muscles, sweat glands and circulation in the feet and legs leading to amputations. Reviewing the feet of people with diabetes regularly and keeping blood glucose levels, blood fats and blood pressure under control can prevent some of the complications associated with the feet.⁵⁹

- Diabetes is the most common cause of lower limb amputations.⁶⁰
- 100 people a week lose a toe, foot or lower limb due to diabetes.⁶¹
- Around one in twenty people with diabetes will develop a foot ulcer in one year.⁶² More than one in ten foot ulcers result in the amputation of a foot or a leg.⁶³
- The rate of leg amputations in people with diabetes is over 15 times higher than in people without.⁶⁴
- Up to 70 per cent of people die within five years of having an amputation as a result of diabetes.⁶⁵

Depression

The emotional well being of people with diabetes is important and is integral to the overall health of an individual, particularly for people with long-term conditions such as diabetes. People with diabetes may have emotional or psychological support needs resulting from living with diabetes or due to causes external to the condition.

Coming to terms with diagnosis, the development of a complication, the side effects of medication, or dealing with the daily responsibility of self managing diabetes can take their toll on emotional well being. In some cases this can lead to depression, anxiety, eating disorders, or phobias.

- The prevalence of depression is approximately twice as high in people with diabetes as it is in the general population.⁶⁶

Neuropathy

Neuropathy causes damage to the nerves that transmit impulses to and from the brain and spinal cord, to the muscles, skin, blood vessels and other organs. This can cause erectile dysfunction. The best way to reduce the risk of developing neuropathy, or prevent it from becoming worse, is to control blood glucose levels.⁵⁵ Following a healthy, balanced diet, making sure that prescribed medication is taken properly, and having some form of regular exercise are all important factors that help maintain good control of blood glucose levels.⁵⁶

- Neuropathies (or nerve damage) may affect up to 50 per cent of patients with diabetes.⁵⁷
- Chronic painful neuropathy is estimated to affect about one in six (16.2 per cent) of people with diabetes, compared with one in 20 (4.9 per cent) in the age and sex matched control group.⁵⁸

Sexual dysfunction

Erectile dysfunction (ED) or impotence (the inability to achieve or maintain an erection for sexual intercourse) is one of the most common sexual problems experienced by men.

- There are no studies giving the prevalence of erectile dysfunction in men in the UK. A study in men over 40 in Kuwait found that about a third of men newly diagnosed with diabetes have erectile dysfunction.⁶⁷
- One study found that 27 per cent of women with Type 1 diabetes reported sexual dysfunction. However, this is an under-researched area.⁶⁸

Complications in pregnancy

Pregnancy poses additional risks for women with diabetes. The chances of having difficulties are greatly reduced through tight blood glucose control before and during pregnancy.⁶⁹

- Babies of women with diabetes are:
 - five times as likely to be stillborn
 - three times as likely to die in their first months of life
 - twice as likely to have a major congenital anomaly. This number could be higher as this figure is not adjusted for the higher rate of abortions in women where congenital abnormalities are found.
- Two in three mothers with pre-existing diabetes have Type 1 diabetes.⁷⁰
- The proportion of births to women with diabetes is rising due to an increased prevalence of Type 2 diabetes in young people.

Life expectancy and mortality

- Diabetes is the fifth most common cause of death in the world.⁷¹
- More than one in ten (11.6 per cent) deaths among 20 to 79-year-olds in England can be attributed to diabetes. If current trends continue, one in eight (12.2 per cent) deaths among 20 to 79-year-olds will be attributable to the condition by 2010.⁷²
- Life expectancy is reduced, on average, by:
 - more than 20 years in people with Type 1 diabetes
 - up to 10 years in people with Type 2 diabetes.⁷³

Financial costs

- It is currently estimated that 10 per cent of the NHS budget is spent on diabetes.⁷⁴ This works out at around £9 billion a year (based on 2007/2008 budget for the NHS of approximately £90.7 billion).⁷⁵ Or:
 - £173 million a week
 - £25 million a day
 - £1 million an hour
 - £17,000 a minute
 - £286 a second.
- One in ten people admitted to hospital has diabetes. In some age groups, it is as many as one in five. This could be one in three coronary care admissions.
- Complications of diabetes make up around one in five of all CHD, foot and renal admissions.⁷⁶
- In 2006, 28.4 million items to treat diabetes were prescribed at a cost of £561.4 million. Diabetes prescribing now accounts for 7 per cent of all prescription costs.⁷⁷

Diabetes also has a significant impact on health and social services.

- People with diabetes are twice as likely to be admitted to hospital. At least one in ten people in hospital has diabetes at any moment in time.⁷⁸
- People with diabetes experience prolonged stays in hospital. This results in about 80,000 bed days per year.⁷⁹
- The presence of diabetic complications increases NHS costs more than five-fold, and increases by five the chance of a person needing hospital admission.
- One in 20 people with diabetes incurs social services costs. More than three-quarters of these costs were associated with residential and nursing care, while home help services accounted for a further one-fifth. The presence of complications increases social services costs four-fold.⁸⁰

Notes

- 1 International Diabetes Federation (2009). Diabetes atlas, fourth edition: www.diabetesatlas.org
Note: These figures are based on what counties report, and the figures will depend on screening strategies.
- 2 *Quality and Outcomes Framework (QOF) 2009*:
England: <http://www.ic.nhs.uk/statistics-and-data-collections/supporting-information/audits-and-performance/the-quality-and-outcomes-framework/qof-2008/09/data-tables/prevalence-data-tables>
Scotland: http://www.isdscotland.org/isd/servlet/FileBuffer?namedFile=QOF_Scot_200809_Boards_all_prevalence.xls&pContentDispositionType=attachment
Wales: <http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=4111>
Northern Ireland: http://www.dhsspsni.gov.uk/diabetes_indicators_by_board3.pdf
- 3 Figures based on PBS diabetes prevalence model phase 3: key findings, Yorkshire and Humber Public Health Observatory, May 2008. The PBS model estimates that by 2025 there will be 3.6 million people with diabetes in England and that the diabetes prevalence will be 6.48 per cent of the population in England. The total UK figures have been calculated by including forecasts for the population of Wales, Scotland and Northern Ireland which gives a total of 4.2 million people with diabetes by 2025.
- 4 This figure was worked out using the diagnosed figure from the *2008 Quality and outcomes framework* with figures from the *2009 Quality and outcomes framework*:
Quality and outcomes framework (QOF) 2008:
Scotland: www.isdscotland.org/isd/servlet/FileBuffer?namedFile=QOF_Scot_200708_Boards_all_prevalence.xls
England: <http://www.ic.nhs.uk/webfiles/QOF/2007-08/NewFilesGS/National%20QOF%20tables%202007-08%20-%20prevalence.xls>
Northern Ireland: www.dhsspsni.gov.uk/diabetes_indicators_by_board-2.pdf
Wales: www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=4111
- 5 A study by Dr Tim Holt, found that 0.1 per cent of those people on 3.6 million patients' records met the criteria for diabetes and 1 per cent potentially had diabetes or were 'borderline' but undiagnosed. This research is based on people who have a glucose measurement on file. Not everyone will have this. However, if the figures were applied to the UK population, then 60,000 people have undiagnosed diabetes and 600,000 have undiagnosed borderline diabetes. Holt TA, Stables D, Hippisley-Cox, J, et al (2008). Identifying undiagnosed diabetes: cross-sectional survey of 3.6 million patients' electronic records, *Br J Gen Pract* 58; 192-196.

With the high number of people diagnosed with diabetes in 2008, this figure is more likely to be half a million people undiagnosed across the UK.

In the Yorkshire & Humber Public Health Observatory key facts document, they estimate that 4.67 per cent of people in England have diabetes. This is made up of diagnosed and undiagnosed cases. We know there is a prevalence of 3.9 per cent of diagnosed cases in England. This would give a figure of around 0.8 per cent undiagnosed which ties in with an estimate of up to half a million. www.yhpho.org.uk/resource/item.aspx?RID=8872
- 6 *Quality and outcomes framework (QOF) 2009*
- 7 Department of Health (2007). *About diabetes*
www.dh.gov.uk/en/Healthcare/NationalServiceFrameworks/Diabetes/DH_074762

- 8 Department of Health (2001). *National service framework for diabetes*
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_4096591
- 9 The Information Centre (2008). *Health Survey for England 2006*
www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf
- 10 Sinclair AJ, Gadsby R, Penfold S et al (2001). Prevalence of diabetes in care home residents. *Diabetes Care* 24; 1066–1068
- 11 NHS Scotland (2009). *Scottish Diabetes Survey 2008*
www.diabetesinscotland.org.uk/Publications/Scottish%20Diabetes%20Survey%202008.pdf
- 12 This breakdown of statistics can be applied to the population of Wales with caution. As it is a self-completed questionnaire it does have biases. *Welsh Health Survey 2008*
<http://wales.gov.uk/topics/statistics/publications/healthsurvey2008/?lang=en>
- 13 This data is based on interviews so the answers are not directly comparable with either the England or Wales data. *Northern Ireland Health and Social Wellbeing Survey 2005/06*
www.csu.nisra.gov.uk/general%20health.pdf
- 14 NHS (2007). *Making every young person matter*. Department of Health
www.diabetes.org.uk/Documents/Reports/MakingEveryYoungPersonMatter.pdf
- 15 Ehtisham S, Hattersley AT, Dunger DB et al (2004). First UK survey of paediatric Type 2 diabetes and MODY. *Archives of Disease in Childhood*, 89 (6); 526–529
- 16 Ehitisham S, Barrett TG, Shaw NJ (2000). Type 2 diabetes mellitus in UK children and emerging problem. *Diabetic Medicine* 17 (12); 867–871
- 17 Drake AJ, Smith A, Betts PR et al (2002). Type 2 diabetes in obese white children. *Archives of Disease in Childhood* 86; 207–208
- 18 Royal College of Paediatrics and Child Health (2009). *Growing up with diabetes: children and young people with diabetes in England*
www.rcpch.ac.uk/doc.aspx?id_Resource=4817
- 19 Tuomilehto J, Lindström J, Eriksson JG et al (2001). Prevention of Type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med* 344(18); 1343–1350
- 20 David, R & Leslie, G (2003). Genetic counselling in diabetes mellitus, in Pickup J.C and Williams G (ed.) *Textbook of diabetes*, 3rd edition Oxford: Blackwell Science
- 21 Department of Health (2001). *National service framework for diabetes*
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_4096591
- 22 The Information Centre (2006). *Health Survey for England 2004: health of ethnic minorities*:
www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england/health-survey-for-england-2004:-health-of-ethnic-minorities--full-report
- 23 As above – 22.
- 24 Williams, G and Pickup, JC (2004). *Handbook of diabetes*, (3rd edition) Blackwell Publishing
- 25 World Health Organisation (2005). *What is the scale of the obesity problem in your country?*
www.who.int/infobase/report.aspx?rid=114&iso=GBR&ind=BMI

- 26 Zaninotto P et al (2008). Trends in obesity among adults in England from 1993 to 2004 by age and social class and projections of prevalence to 2012. *Journal of Epidemiology and Community Health*. Published online first: 11 December 2008
- 27 NHS Information Centre (2005). National child measurement programme
www.ncmp.ic.nhs.uk
- 28 Department of Health (2004). *At least five a week*
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4080994
- 29 Office for National Statistics (2008). *United Kingdom health statistics* no 3
- 30 All Party Parliamentary Group for Diabetes and Diabetes UK (2006). *Diabetes and the disadvantaged: reducing health inequalities in the UK*: World Diabetes Day 14 November 2006
www.diabetes.org.uk/Documents/Reports/Diabetes_disadvantaged_Nov2006.pdf
- 31 The Information Centre (2008). *Health Survey for England 2006*
www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf
- 32 National Statistics (2008). *Welsh Health Survey 2008*
<http://wales.gov.uk/topics/statistics/publications/healthsurvey2008/?lang=en>
- 33 NHS Scotland (2009). *Scottish Diabetes Survey 2008*
www.diabetesinscotland.org.uk/Publications/Scottish%20Diabetes%20Survey%202008.pdf
- 34 The Information Centre (2006). *Health Survey for England 2004: health of ethnic minorities*:
www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england/health-survey-for-england-2004:-health-of-ethnic-minorities--full-report
- 35 Lancet (2008). The global challenge of diabetes. *The Lancet* 371 9626; 1723
- 36 Girling J & Dornhorst A (2004). Pregnancy and diabetes mellitus, in Pickup JC and Williams G (ed.) *Textbook of Diabetes*, (3rd edition). Oxford: Blackwell Science
- 37 Stratton IM, Adler AI, Neil HAW et al (2000). Association of glycaemia with macrovascular and microvascular complications of Type 2 diabetes (UKPDS 35): prospective observational study. *BMJ* 321; 405–412
- 38 UKPDS Group: UK Prospective Diabetes Study VIII: study design, progress and performance. *Diabetologia* (1991) 34; 877-90
This is a population diagnosed on average in 1988. However, the UKPDS is still the largest clinical research study of Type 2 diabetes ever conducted. Figures may not be the same now due to greater awareness of diabetes and screening. Numbers may still be high, as the UKPDS was not based on a random sample and excluded those with serious complications.
- 39 Harris MI, Klein R, Welborn TA et al (1992). Onset of NIDDM occurs at least 4-7 years before clinical diagnosis. *Diabetes Care* 15 (7); 815–819
- 40 UK Prospective Diabetes Study (UKPDS) Group (1998). Tight blood pressure control and risk of macrovascular and microvascular complications in Type 2 diabetes: (UKPDS 38). *BMJ* 317; 703–713
Colhoun HM et al (2004). Primary prevention of cardiovascular disease with atorvastatin in Type 2 diabetes in the Collaborative Atorvastatin Diabetes Study (CARDS): multicentre randomised placebo-controlled trial. *Lancet* 364; 685–696
UK Prospective Diabetes Study (UKPDS) Group (1998). Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk complications in patients with Type 2 diabetes (UKPDS 33). *Lancet* 352; 837–853

- 41 Morrish NJ, Wang SL, Stevens LK et al (2001). Mortality and causes of death in the WHO multinational study of vascular disease in diabetes. *Diabetologia* 44 suppl 2; s14–s21
Data from the American Diabetes Association suggest that deaths from cardiovascular disease are higher in people with diabetes in America accounting for 65 per cent of diabetes deaths: www.aafp.org/afp/20031015/1569.html
- 42 Schramm TK, Gislason GH, Kober L et al (2008). Diabetes patients requiring glucose lowering therapy and nondiabetics with a prior myocardial infarction carry the same cardiovascular risk: a population study of 3.3 million people. *Circulation* 117 (15); 1945–54
This is a study of people with diabetes over the age of 30.
- 43 Huxley R, Barzi F, Woodward M (2006). Excess risk of fatal coronary heart disease associated with diabetes in men and women: meta-analysis of 37 prospective cohort studies. *BMJ* 332;73–76
- 44 Jeerakathil T, Johnson JA, Simpson SH et al (2007). Short-term risk for stroke is doubled in persons with newly treated Type 2 diabetes compared with persons without diabetes: a population based cohort study. *Stroke* 38 (6); 1739–1743
- 45 Stratton IM, Adler AI, Neil HAW, et al (2000). Association of glycaemia with macrovascular and microvascular complications of Type 2 diabetes (UKPDS 35): prospective observational study. *BMJ* 321; 405–412
- 46 Department of Health (2006). *Turning the corner: improving diabetes care*
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4136141
- 47 Department of Health (2007). *Improving diabetes services: the NSF four years on*
www.dvh.nhs.uk/downloads/documents/B81F82BI76_the_way_ahead_the_local_challenge.pdf
- 48 Morrish NJ, Wang SL, Stevens LK et al (2001). Mortality and causes of death in the WHO multinational study of vascular disease in diabetes. *Diabetologia* 44, suppl 2; s14–s21
- 49 Stratton IM, Adler AI, Neil HAW, et al (2000). Association of glycaemia with macrovascular and microvascular complications of Type 2 diabetes (UKPDS 35): prospective observational study. *BMJ* 321; 405–412
- 50 Hamilton AMP, Ulbig MW, Polkinghorne P (1996). *Management of diabetic retinopathy*, London: BMJ Publishing
There is a lack of current data on blindness and diabetic retinopathy. As screening improves, the number of people going blind due to retinopathy may have reduced.
- 51 Kohner E, Allwinkle J, Andrews J et al (1996). Saint Vincent and improving diabetes care: report of the Visual Handicap Group. *Diabetic Medicine* 13, suppl 4; s13–s26. There is a lack of current data. The figure may have reduced with better screening.
Arun CS, Ngugi N, Lovelock L et al (2003). Effectiveness of screening and preventing blindness due to diabetic retinopathy. *Diabetic Medicine* 20 (3); 186–190
- 52 Scanlon P.H (2008). The English national screening programme for sight threatening diabetic retinopathy. *Journal of Medical Screening* 15 (1); 1–4
- 53 As above - 52
- 54 Petit, WA and Adamec, C (2002). *The encyclopedia of diabetes*. New York: Facts on File.
- 55 Stratton IM, Adler AI, Neil HAW, et al (2000). Association of glycaemia with macrovascular and microvascular complications of Type 2 diabetes (UKPDS 35): prospective observational study. *BMJ* 321; 405–412

- 56 Boule NG, Haddad E, Kenny GP et al (2001). Effects of exercise on glycaemic control and body mass in Type 2 diabetes: a meta analysis of controlled clinical trials. *JAMA* 286; 1218–1227
- Connor H, Annan F, Bunn E et al (2003). The implementation for nutritional advice for people with diabetes. *Diabetic Medicine* 20; 786–807
- 57 Boulton AJM (2005). Management of diabetic peripheral neuropathy. *Clinical Diabetes* 23; 9–15. This figure is based on four different studies in which estimates of neuropathy range from 66 per cent in people with Type 1 diabetes over 60 years of age to 41.6 per cent in people who been diagnosed for over seven years.
- 58 Daousi C et al (2004). Chronic painful peripheral neuropathy in an urban community: a controlled comparison of people with and without diabetes. *Diabetic Medicine* 21 (9); 976–982
- 59 International Working Group on the Diabetic Foot (2005). *Diabetes and foot care*, International Diabetes Federation
- Stratton IM, Adler AI, Neil HAW, et al (2000). Association of glycaemia with macrovascular and microvascular complications of Type 2 diabetes (UKPDS 35): prospective observational study. *BMJ* 321; 405–412
- 60 Amputee Statistical Database for the United Kingdom (2007). Lower limb amputations www.nasdab.co.uk/pdf.pl?file=nasdab/news/Final_2006_07.pdf
- 61 National Diabetes Support Team (2006). *Diabetic foot guide* www.diabetes.nhs.uk/document.php?o=219
- 62 Abbott CA, Vileikyte L, Williamson S et al (1998). Multicenter study of the incidence of and predictive risk factors for diabetic neuropathic foot ulceration. *Diabetes Care* 21 (7); 1071–1075
- 63 National Diabetes Support Team (2006). *Diabetic foot guide* www.diabetes.nhs.uk/document.php?o=219
- 64 Williams, G and Pickup, JC (2004). *Handbook of diabetes*. Oxford: Blackwell.
- 65 Singh, B et al (2006). Research presented at the Diabetes UK Annual Professional Conference. This matches figures found in US studies:
- Schofield CJ, Libby G, Brennan GM et al (2006). Mortality and hospitalization in patients, after amputation: a comparison between patients with and without diabetes. *Diabetes Care* 29 (10); 2252–2256
- 66 Katon W, von Korff M, Ciechanowski P et al (2004). Behavioral and clinical factors associated with depression among individuals with diabetes. *Diabetes Care* 27; 914–920
- This study was conducted on a population in Washington State.
- 67 Al-Hunayan J, Al-Mutar M, Kehinde EO et al (2007). The prevalence and predictions of erectile dysfunction in men newly diagnosed with Type 2 diabetes mellitus. *BJU International* 99 (1); 130–134
- 68 Enzlin P, Mathieu C, Van den Bruel A et al (2003). Prevalence and predictions of sexual dysfunction in patients with Type 1 diabetes. *Diabetes Care* 26; 409–414
- 69 CEMACH (2004). *Pregnancy in women with Type 1 and Type 2 diabetes* www.cemach.org.uk/getattachment/8940bb02-7d42-4067-9aed-92bbecd144ea/Pregnancy-in-women-with-type-1-and-type-2-diabetes.aspx

- 70 CEMACH (2004). *Maternity services in 2002 for women with Type 1 and Type 2 diabetes*
www.cemach.org.uk/getdoc/914cb307-b3ca-406d-a323-636ad76df391/Diabetes-Organisational-Survey.aspx
- CEMACH (2005). *Pregnancy in women with Type 1 and Type 2 diabetes in 2002-2003, England, Wales and Northern Ireland*:
www.cemach.org.uk/getdoc/dea8d48b-3dc1-4185-8a57-e7a6efad663f/Pregnancy-in-women-with-type-1-and-type-2-diabetes.aspx
- CEMACH (2007). *Diabetes in pregnancy: are we providing the best care? Findings of a national enquiry*
www.cemach.org.uk/getdoc/f4ec2aca-963b-4997-be80-ac17a4492ea4/Diabetes-inPregnancy.aspx
- 71 Roglic G, Unwin N, Bennett PH et al (2005). The burden of mortality attributable to diabetes: realistic estimates for the year 2000. *Diabetes Care* 28;2130–2135
- 72 Yorkshire and Humber Public Health Authority (2008). *Diabetes attributable deaths: estimating the excess deaths among people with diabetes*.
www.yhpho.org.uk/resource/view.aspx?RID=9909
- 73 Department of Health (2001). *National service framework for diabetes: standards*.
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4002951
- 74 Department of Health (2006). *Turning the corner improving diabetes care*
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4136141
- 75 NHS Confederation (2007a). *Key statistics on the NHS* London: NHS Confederation
- 76 NDST (2005). *National Diabetes Support Team fact sheet: no 10: Working together to reduce length of stay for people with diabetes*.
www.diabetes.nhs.uk/document.php?o=100
- 77 Yorkshire and Humber Public Health Observatory (2007). *Prescribing for diabetes in England: analysis of volume, expenditure and trends*
www.yhpho.org.uk/resource/view.aspx?RID=9711
- 78 Sampson MJ, Doxio N, Ferguson B et al (2007). Total and excess bed occupancy by age, speciality and insulin use for nearly one million diabetes patients discharged from all English acute hospitals. *Diabetes Research and Clinical Practice* 77 (1); 92–98
- 79 Sampson MJ, Crowle T, Dhatariya K et al (2006). Trends in bed occupancy for inpatients with diabetes before and after the introduction of a diabetes inpatient specialist nurse service. *Diabetic Medicine* 23 (9); 1008–1115
- 80 Kings Fund et al (2000). *Tardis: Type 2 diabetes: accounting for major resource demand in society in the UK*.