

# DIABETES IN ENFIELD

ANNUAL  
PUBLIC  
HEALTH  
REPORT  
2016





# WELCOME

I would like to welcome you to the Annual Public Health Report for 2016. This report focuses on diabetes in Enfield because tackling diabetes is a key challenge in implementing a comprehensive strategy to improve the health of the borough's population.

In Enfield, the number of people with diabetes is increasing each year. At present one in every 14 adults in the borough has the condition and a further 30,000 have a high risk of developing it. Luckily Type 2 diabetes – which is related to lifestyle – is mostly preventable and residents can take simple and practical steps to minimise their risk of contracting it and also improve their general levels of health.

Our national and local partners have set out effective, evidence-based measures intended to improve treatment for patients with diabetes, and improve the prevention of the condition.

The Council is working with its partners such as the NHS in Enfield to make it as easy as possible for residents to live a healthy lifestyle by creating an environment that makes it easier to move more, eat healthily, drink less, and not smoke.

I also welcome the launch of the National Diabetes Prevention Programme and the great commitment from NHS Enfield Clinical Commissioning Group to work on diabetes prevention beyond the ambition of the national programme.

Although both types of diabetes (Type 1 and Type 2) are incurable, the risk of developing diabetic health complications can be minimised by early detection and effective management of blood glucose levels, blood pressure and cholesterol.

However, there is a huge variation in the take up of education programmes for people with diabetes, in the delivery of the recommended care processes, in the achievement of treatment standards, and in outcomes for patients with diabetes across England.

By talking to patients, we know that with structured education and appropriate support, children and adults with diabetes can manage their condition confidently and lead healthy lives.

I would like to congratulate those people who take active measures to control their diabetes and who work with their healthcare team, adopt a suitable lifestyle, monitor their own progress, and take up eye screening and flu jabs. These actions are in their long term interests and help prevent both long-term and acute consequences, but also benefit the wider community by reducing crisis admissions to A&E when diabetic complications arise.

We will continue to work with people with diabetes and with our partners to control this condition across Enfield. We are running many successful initiatives in the borough and you can find out more in the latter pages of this annual report.

I would like to thank Dr. Ahmad and the Public Health team for their hard work in producing this report which will help to guide future work on prevention and management of diabetes, and support people in Enfield to live healthier lives.



**Cllr Krystle Fonyonga**  
Cabinet Member for  
Community Safety &  
Public Health

# FOREWORD

The topic of my 2016/17 Annual Public Health Report is diabetes. Diabetes is a condition which can cause major complications to individuals, is rapidly increasing in numbers and is a significant financial pressure for the NHS and local government. Diabetes contributes to the life expectancy gap, which was the topic of my 2014/15 report.

The report covers many aspects of diabetes, from prevention to a plethora of its consequences, the role of healthy lifestyle and medical management of diabetes, the importance of patient self-care and structured education, how diabetes disproportionately affects Enfield and its deprived communities, and how local and regional partners in Enfield are working together to prevent and manage diabetes.

From a national audit, we know that 20% of all strokes, 21% of all heart attacks, and 32% of all kidney dialysis were related to diabetes, and it is clearly adding to the cardiovascular mortality which is the number one cause of the life expectancy gap seen in Enfield.

There is and has been a lot of good practice in diabetes management. However the growing number of people with diabetes means that we all need to continually aspire to excellence. The report describes some of the excellent work which has already been done in Enfield, including patient information, Conversation Map Tools (a structured patient education programme), an initiative to improve the management of complex diabetes, diabetes prevention and many others. Going forward, the Sustainability and Transformation Plan will be an important programme of work in North Central London.

I'd particularly like to thank Dr Tha Han and indeed all of the Enfield public health team for producing this document and for the sterling work they do on a day to day basis to tackle diabetes.



**Dr. Shahed Nizam Ahmad**  
MSc, MA, MB, BChir  
(Cantab), FFPH

Director of Public Health  
London Borough of  
Enfield

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# WHAT IS DIABETES?

## KEY MESSAGE

Diabetes is a condition where the amount of sugar (glucose) in your blood is too high because the body cannot use it properly. Excess sugar in the blood can damage veins, arteries and nerves in your body.

## There are 3 main kinds of diabetes

### TYPE 1 DIABETES

#### What is it?

Type 1 diabetes occurs when your body doesn't make enough insulin to manage blood sugar. Insulin is the hormone produced by the pancreas that allows sugar (glucose) to enter the body's cells, where it is used as fuel for energy.

#### Who's at risk?

Type 1 diabetes can develop at any age but usually appears before age 40. The most common age for diagnosis is aged 9-14. It is estimated that there are currently 187.7 children with Type 1 diabetes per 100,000 children aged under 15 in England and Wales.<sup>1</sup>

#### What can I do?

Type 1 diabetes can't be prevented but with proper management, people with Type 1 diabetes can have long and healthy lives.

### TYPE 2 DIABETES

#### What is it?

Type 2 diabetes occurs when glucose is unable to enter the cells, either because there is not enough insulin or the insulin receptors are not working properly.

#### Who's at risk?

People aged over 40, people who are overweight or obese, people with a family history of diabetes, and people of Black and Asian origin can be at higher risk of developing Type 2 diabetes.

#### What can I do?

Type 2 diabetes can be delayed or prevented by leading a healthy lifestyle – maintaining a healthy weight and doing exercise. This is especially important if your GP tells you that you are at risk of developing diabetes (pre-diabetes).

### DIABETES IN PREGNANCY

#### What is it?

There are two kinds of diabetes in pregnancy:

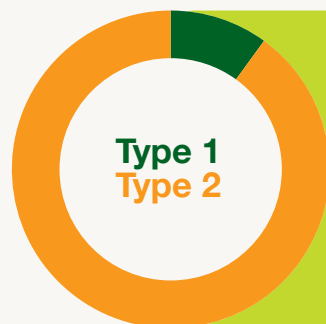
- gestational diabetes is a type of diabetes that is first detected during pregnancy and usually disappears afterwards;
- women who have already been diagnosed with diabetes and become pregnant.

#### Who's at risk?

Your chances of getting gestational diabetes are higher if you are overweight, or have polycystic ovary syndrome.

#### What can I do?

You need to control your blood sugar before, during and after pregnancy. Your GP will help you to do this.



There are 4 million people living with diabetes in the UK. Amongst these adults and children, it is estimated that **10%** have Type 1 diabetes and **90%** have Type 2 diabetes.<sup>2</sup>

Last year, **1 in 15** women who gave birth in Enfield had diabetes.

See page 10 for more about diabetes in pregnancy.



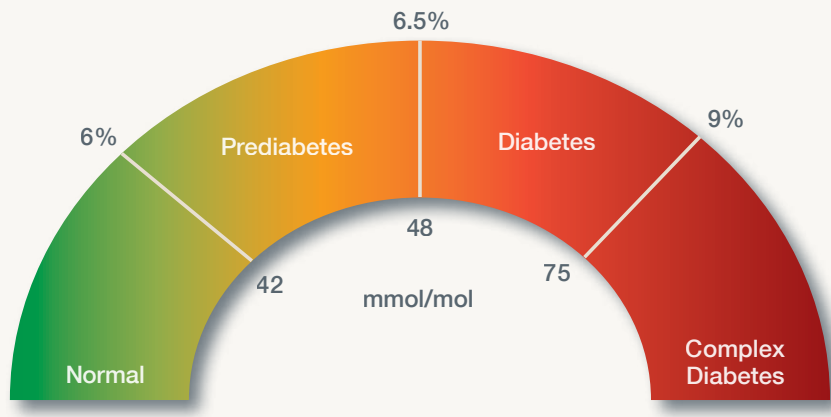
## Prediabetes

In addition to those diagnosed with diabetes, there are a large number of people who are at high risk of developing Type 2 diabetes, referred to as “prediabetes”.

Prediabetes is when the amount of sugar in your blood is above normal although not high enough to be diagnosed as diabetes.

People with prediabetes are **at increased risk** of developing Type 2 diabetes and every year 5%-10% of people with prediabetes become diabetic.<sup>3</sup> However this progression is not inevitable: you can reduce this risk by 40-70% through a **healthy diet** and moderate **physical activity**.<sup>4</sup>

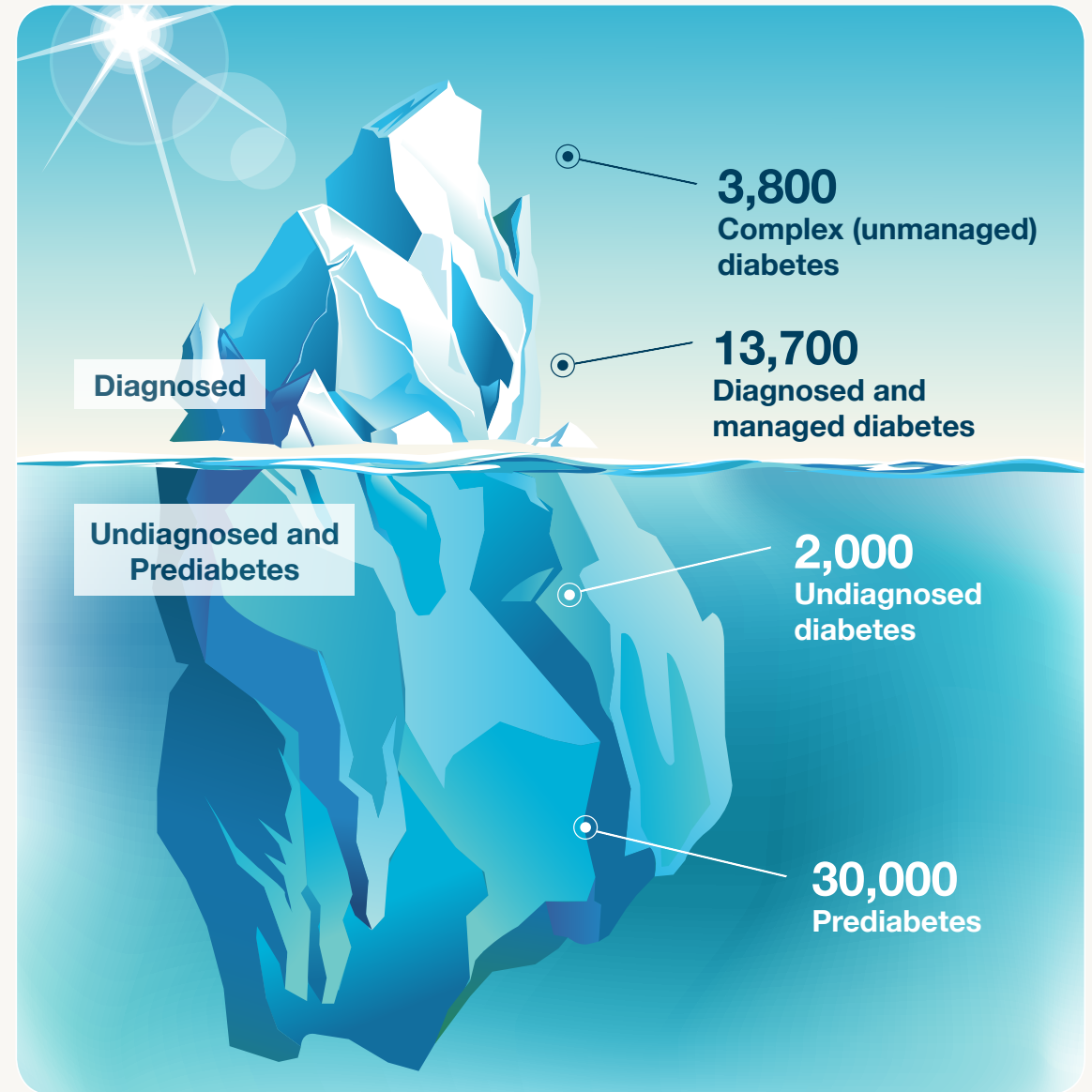
To clinically diagnose diabetes or prediabetes, your doctor will test your HbA1c (glycated haemoglobin), a measure of your average blood sugar level.<sup>5</sup>



Source: Adapted from John et al. (2012)



## Diagnosed diabetes is just the tip of the iceberg. In Enfield:



Sources: Quality and Outcomes Framework (QOF) 2014/15, Health and Social Care Information Centre (HSCIC). Diabetes prevalence model for LAs and CCGs, Public Health England (PHE) Prevalence estimates of non-diabetic hyperglycaemia, PHE

# DIABETES IN ENFIELD

## KEY MESSAGE

There are almost 17,500 adults (1 in 14) diagnosed with diabetes in Enfield and an additional 30,000 people are at risk of developing diabetes.

It is estimated that there are almost 20,000 adults with diabetes in Enfield, although not all of these are diagnosed.

Approximately **17,500** adults (aged 17+) have been diagnosed with diabetes in Enfield (**7.1%**). Enfield has the **7th** highest level (prevalence) of diabetes in London.

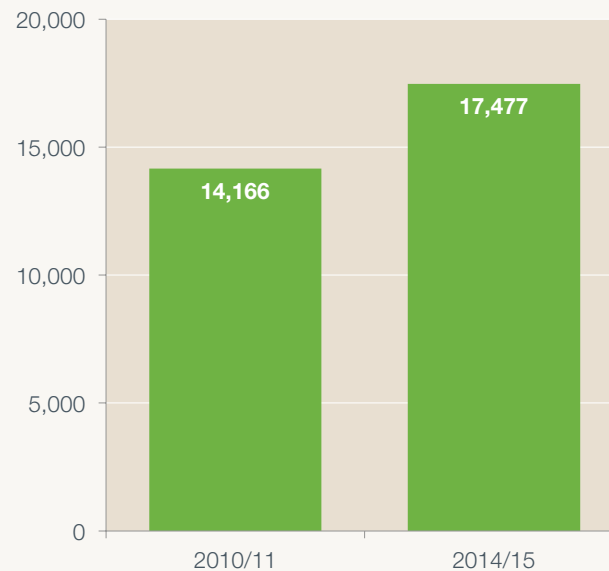
There are also likely to be a number of people with diabetes who are undiagnosed. It is estimated that there are actually over **19,600** adults (aged 16+) with diabetes (diagnosed and undiagnosed) in Enfield. If obesity continues to rise at the current pace, it is estimated that this could rise to **27,000** adults with diabetes by 2030.

It is estimated that there are **30,000** adults (aged 16+) at increased risk of developing diabetes (known as prediabetes) in Enfield.

*Sources: QOF 2014/15, HSCIC. Diabetes prevalence model for LAs and CCGs, PHE. Prevalence estimates of non-diabetic hyperglycaemia, PHE.*

The number of people with diabetes has been rising rapidly and is likely to continue to rise because of obesity.

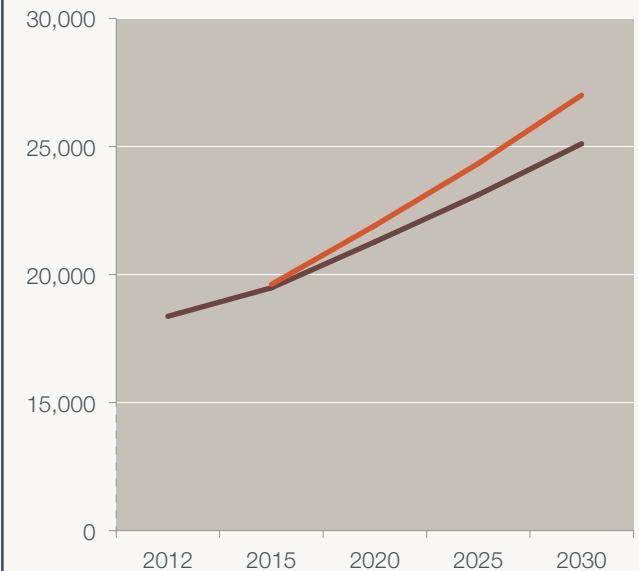
The number of adults (17+) diagnosed with diabetes in Enfield has increased rapidly



Source: QOF, HSCIC

Rising levels of obesity mean that this number is likely to continue to increase rapidly in the future.

An additional 2,000 adults (16+) could develop diabetes if obesity continues to rise in Enfield



— 2010 obesity levels maintained  
— Obesity continues to rise at current rate

Source: Diabetes Prevalence Model, Public Health England



# OBESITY IN ENFIELD

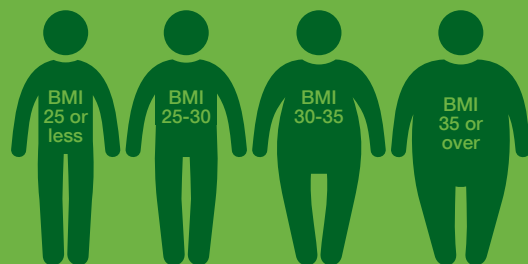
Two thirds of adults (64.8%) are overweight or obese in Enfield



2 in 5 of 10-11 year olds (41.0%) are overweight or obese in Enfield



The level of diabetes is higher in adults with higher BMI.<sup>6</sup>

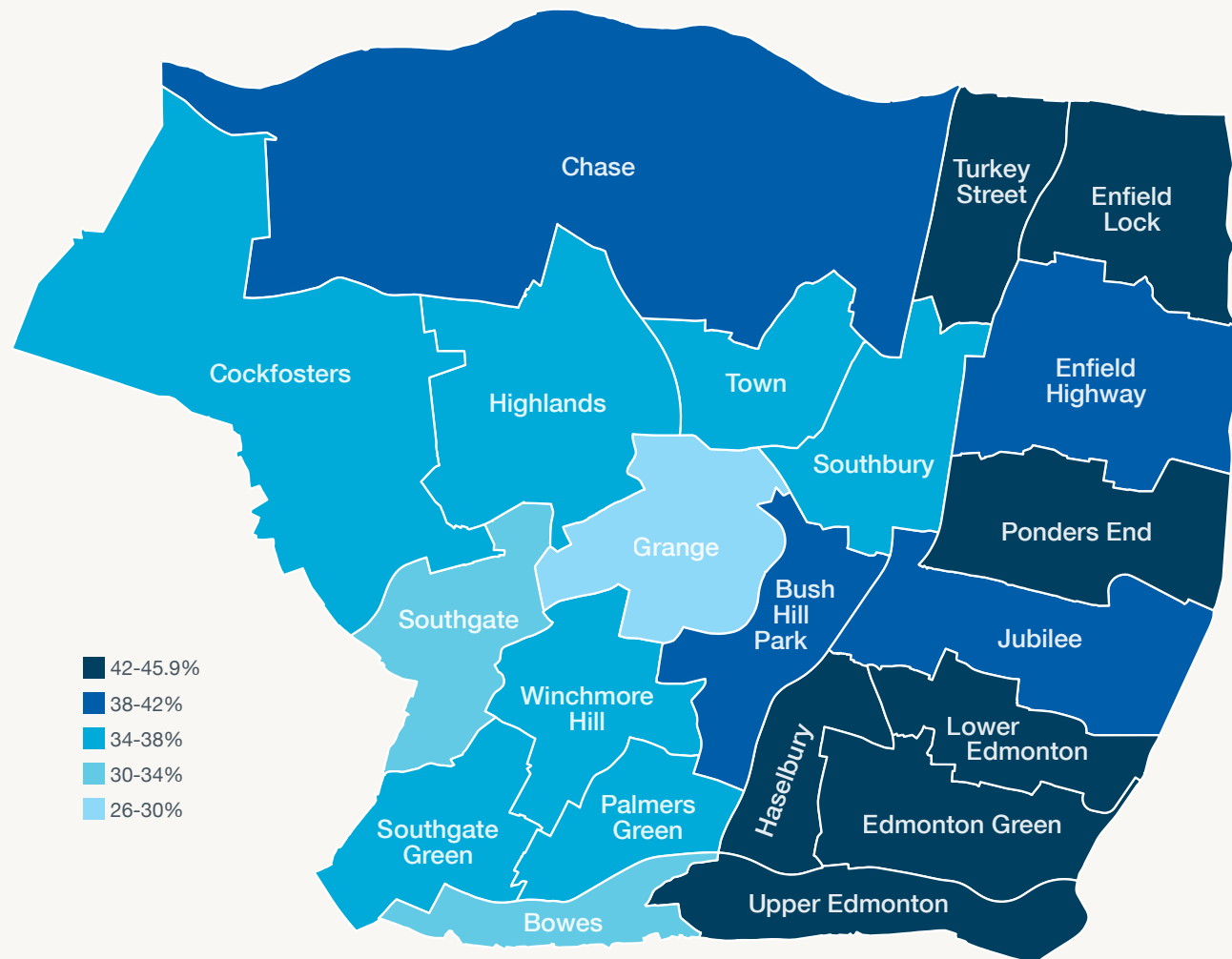


2% have diabetes  
7% have diabetes  
10% have diabetes  
20% have diabetes

In Enfield, as in the rest of the UK, we are starting to see cases of Type 2 diabetes in children and young people.

This map shows the percentage of children aged 10-11 year old who are overweight or obese across Enfield. Levels of obesity are highest in the east of the borough. This overlaps with more deprived parts of Enfield.

Percentage of children aged 10-11 who are overweight or obese, 2011/12-2013/14 (pooled data)



Source: National Child Measurement Programme (NCMP) 2011/12-2013/14, Public Health England

# PREVENTING DIABETES

## KEY MESSAGE

To prevent diabetes, stay **LEAN** and **ACTIVE**. You can calculate your risk of diabetes online using the [Diabetes UK risk calculator](#).

It is estimated that more than half of new cases of Type 2 diabetes can be prevented.

### What are the risk factors for Type 2 diabetes?

You are more likely to develop Type 2 diabetes if you:



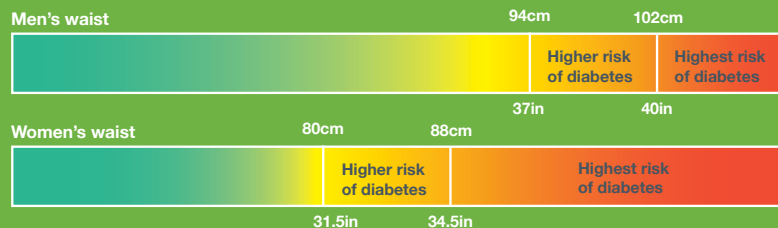
- are **overweight or obese** ... *There is a 7x greater risk of diabetes in obese people<sup>7</sup> or you have a large waist...A 1cm increase in waist circumference increases the risk of Type 2 diabetes by 3.5%<sup>8</sup>*



- **smoke** ... *Smokers are 50% more likely to develop diabetes than non-smokers.<sup>9</sup>*



- drink excess amounts of **alcohol** ... *Recommended guidelines on alcohol can be on [NHS Choices](#).*



If you have any of the risk factors for diabetes, you can **calculate your risk of diabetes** online using the [Diabetes UK risk calculator](#).

### What can I do to prevent Type 2 diabetes?



#### Eat more healthily

Try to eat a balanced diet, and reduce the amount of sweets, chocolate and sugary drinks you consume. In Enfield less than half of the population meet the recommended '5-a-day' portion of fruit and vegetables. Use the [Eatwell Guide](#) to help you.



#### Be more physically active

Reduce time spent sitting or driving, and make physical activity part of your daily life, for example walking or cycling to work. Meeting [physical activity guidelines](#) is associated with a **30-40% reduction in the risk of Type 2 diabetes**. In Enfield 1 in 3 adults are physically inactive.



#### Avoid smoking

If you already smoke, quit. In Enfield the smoking prevalence has been falling for the past few years, from 19.4% in 2010 to 13.6% in 2014.



#### Drink within recommended limits

Higher amounts of alcohol increase the risk of developing Type 2 diabetes. In Enfield, 17.5% of the drinking population (not including abstainers) aged 16 and over report engaging in 'increased risk' drinking (15-35 units of alcohol per week for women and 22-50 for men).



#### Take the opportunity to go for a Health Check if you are invited

Enfield Council commissions the NHS Health Check programme for those aged 40-74 who have not previously been diagnosed with a cardiovascular disease. This is an opportunity to check your blood pressure, cholesterol and blood sugar and to receive useful lifestyle advice and support or treatment to manage these risk factors.

# HEALTHY EATING

## KEY MESSAGE

Eating a healthy diet (in terms of both quantity and quality) can help to reduce the risk of developing Type 2 diabetes, control Type 1 diabetes, and prevent long-term and short-term health consequences.

Eating a healthy diet can help to reduce the risk of developing Type 2 diabetes. If your BMI is above 25 (or 23 if Asian), the first step is to reduce portion size. If you have diabetes, an appropriate diet advised by your doctor or dietician will help manage your diabetes.

## Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group. Practical tips and ideas for recipes for people with diabetes are available on the [Diabetes UK website](#).

### TOTAL CALORIE INTAKE

ALL FOOD + ALL DRINKS

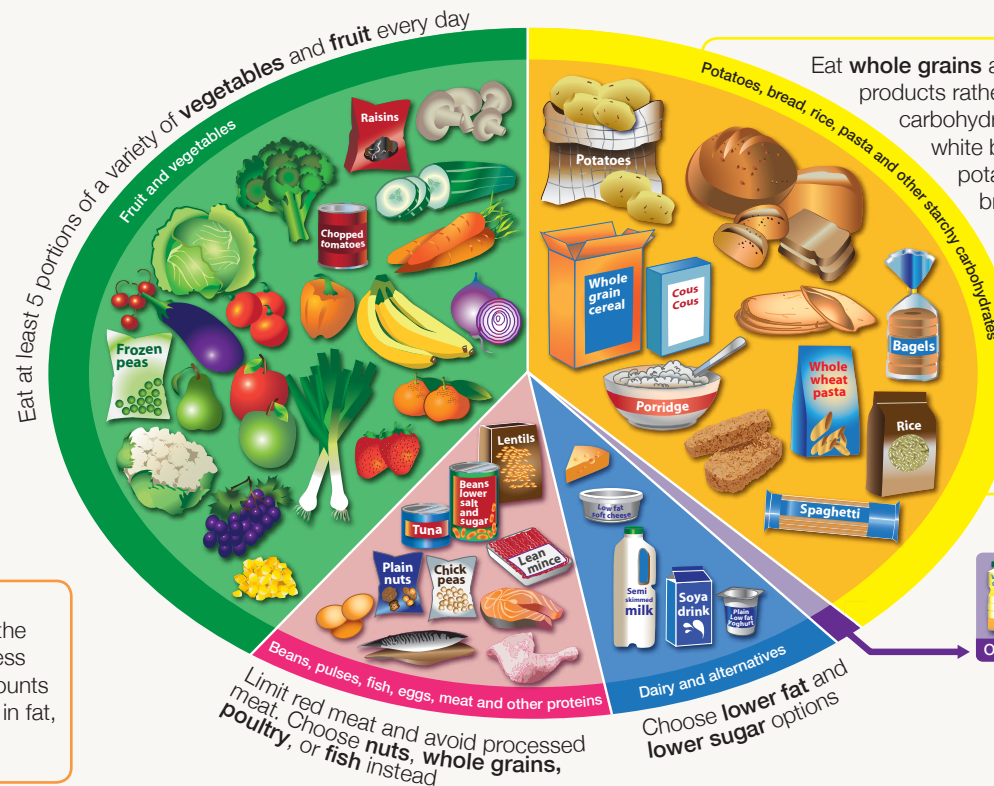
PER DAY:



2000kcal



2500kcal



Eat **whole grains** and whole grain products rather than highly processed carbohydrates. Products such as white bread, white rice, mashed potatoes, bagels, and many breakfast cereals have what's called a high glycaemic index and glycaemic load. That means they cause spikes in blood sugar and insulin levels, which in turn may lead to increased diabetes risk. Salt in them also increases your blood pressure.



Drink **6-8 cups/ glasses of water a day**. Avoid sugary drinks and limit fruit juice and/ or smoothies to a total of 150 ml a day. You can find more information on [Change4Life](#).



**Polyunsaturated fats** such as those found in liquid vegetable oils, nuts, and seeds can help reduce the risk of obesity; trans fats do the opposite. Trans fats are typically found in fried foods from most fast-food restaurants, margarines, and in packaged baked goods.

These are not part of the Eatwell Guide. Have less often and in small amounts foods and drinks high in fat, salt or sugar.

# DIABETES IN PREGNANCY

## KEY MESSAGE

To minimise health risks to the mother and baby, diabetes needs to be controlled **BEFORE, DURING** and **AFTER** pregnancy.



Last year, **1 in 15** women who gave birth in Enfield had diabetes (either pre-existing or gestational)  
*Source: SUS data, NHS Enfield CCG*

## Diabetes in pregnancy can be divided into 2 groups

### GESTATIONAL DIABETES

#### What is it?

A type of diabetes that is first detected during pregnancy and usually disappears afterwards. However, if you have gestational diabetes, you are more than 10 times as likely to develop Type 2 diabetes in later life.<sup>10</sup> Women are tested for gestational diabetes between 24 and 28 weeks of pregnancy.

#### Who's at risk?

Your chances of getting gestational diabetes are higher if you:

- are overweight
- have had gestational diabetes before
- are South Asian, Black Caribbean or Middle Eastern
- have polycystic ovary syndrome

#### What should I do?

Gestational diabetes can often be controlled by diet and physical activity – a dietician will give you advice. You will also need to monitor your blood sugar levels throughout the pregnancy. When your pregnancy is over, it is very important that you **continue to visit your doctor**

**regularly to monitor your blood sugar levels. Without lifestyle intervention**, as many as **1 in 4** women develop diabetes within 5 years.<sup>11</sup>

### PRE-EXISTING DIABETES

#### What is it?

Women who have Type 1 or Type 2 diabetes before they get pregnant. Some women may be aware that they have Type 2 diabetes before they become pregnant, whilst some may be diagnosed during their pregnancy.

#### What should I do?

If you have pre-existing diabetes, the best way to reduce the risk to you and your baby is to ensure that your **diabetes is controlled before you become pregnant**. Your GP or diabetes specialist will give you advice.

Pregnant women with diabetes should take a higher dose of folic acid (5 mg/day), which can be prescribed by your doctor. Taking folic acid helps to prevent your baby from developing birth defects. Diabetic eye screening is very important when you are pregnant, because the risk of serious eye problems is greater.

### Potential complications of diabetes in pregnancy

If diabetes is not adequately managed during pregnancy **the mother is at increased risk of:**

- Having a large baby (which increases the risk of a difficult birth, induced labour or a caesarean section)
- Developing Type 2 diabetes later in life.



Women with pre-existing diabetes are at higher risk of having a miscarriage, and women with Type 1 diabetes may also develop problems with their eyes and their kidneys, or existing problems may get worse.

#### The baby may be at risk of:

- Being stillborn or dying soon after birth
- Having health problems shortly after birth and needing hospital care
- Developing obesity or diabetes later in life



Babies born to mothers with pre-existing diabetes may be at risk of having congenital abnormalities (not developing normally). For more information, see [NHS Choices](#).

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If you have been diagnosed with diabetes, use this handy guide...



**Eat healthily**



**Be more active**



**Don't miss your medication**



**Quit smoking**



**Have regular check-ups**

# LIVING WITH DIABETES

## KEY MESSAGE

There is no cure for diabetes and it progresses without treatment. Patient self-care, structured education and patient-centred care together form the basis of living well with diabetes.

## I have just been told I have diabetes by my GP...

There is **no cure** for diabetes and it **progresses without treatment**. Treatment aims to keep blood glucose levels as normal as possible and it is much easier to prevent problems now than to treat them later.

I will follow dietary and lifestyle advice and if required my doctor will put me on medication(s) to treat diabetes and to reduce the risk of complications. I may need injectable medication and possibly insulin injections. I will ask many questions about them, their side effects, and any precautions I need to take. I will take them at the **right time** and if I feel any side effects, I will get advice from my pharmacist. I can find my nearest GP and pharmacist in Enfield on the [NHS Choices website](#).

If I am a child, my **school** will work together with my parents and healthcare team to ensure I enjoy school like other children.

I will **learn more about my condition**, so I will be in control of my diabetes. I will ask my GP for an electronic copy of the “Living with Diabetes” booklet, and about **Structured Education** for diabetes – in Enfield we call it “**Conversation Map Tools**”. Structured education helps patients manage their diabetes, weight, blood pressure and cholesterol, and **reduces the need to increase the number and dose of medications**. I will join **patient groups**, such as the [Enfield Diabetes Support Group](#), which meets every month, and work with doctors and nurses to keep me healthy.

I will do my best to **eat healthily, be more active and quit smoking**, finding relevant advice about how to make these changes on websites like [One You](#). I will use the **free health kiosks** at my GP surgery to help me better control my **blood pressure and weight**.

If retinopathy (damage to the eye) is detected early enough, treatment can stop it getting worse. In Enfield, retinal screening uptake was below the England average, so I will attend my **retinal screening** when invited even if my eyesight is OK. I will also need to have an **annual flu jab** to protect me from influenza which can make me more ill than other people. My GP practice will tell me more about this and I can ask them any questions I might have.

I will take part in **annual care planning** with my GP where we will agree on my **target HbA1c** and treatment regime. A large UK study found that just by reducing my **HbA1c by 1%**, my risk of heart attack can be **reduced by 16%**.<sup>12</sup> If I am ill for any reason or need to travel, I will consult with a local pharmacist and if required I will see a doctor. I will see a diabetes specialist team when my GP or nurse thinks this is needed. If I need to be in hospital for any reason, I will make sure I have my prescription list with me.

It is important my healthcare team knows about **my mood**. Successful treatment for depression also helps improve blood glucose control.



### Be aware of the symptoms of diabetes

Chloë, a 6-year old girl from Winchmore Hill, was brought by her parents to see her GP with a high temperature and cough that did not get better after a week. Over the last month, she had also been very tired at school and complaining to the teachers that she couldn't see the board properly. Her GP planned to treat her for an upper respiratory tract infection but also suggested doing a urine dipstick whilst at the surgery. The test strip showed glucose in the urine as well as ketones. The doctor immediately referred her to the paediatric unit for further assessment and monitoring of her clinical condition with a provisional diagnosis of diabetes. Thankfully, she made a full recovery without needing to receive aggressive treatment, but many children are not so lucky and are admitted to paediatric intensive care.

### I was almost becoming diabetic, but I brought it to a halt

Rachel is a 44 year old woman from Enfield Chase who has two teenage daughters and a son. Apart from some tiredness she is quite well. Her GP invited her for an NHS Health Check and her blood glucose test showed she was just below the threshold of diabetes – known as prediabetes. He was concerned and advised her to consider losing weight through diet and regular exercise. She learned from the internet that her risk of developing Type 2 diabetes could be halved through diet and intensive exercise. Rachel took the advice and started exercising regularly, reduced her portion sizes and ate more vegetables. She walked and started cycling to work. She finds herself fitter and a year later her blood test returned to normal so she is no longer considered prediabetic.

### Insulin injection should not be a pain

Daphne, a 68 year old woman from Cockfosters with diabetes whose blood glucose was poorly controlled, had been refusing insulin as she thought that the injections would be painful and onerous. A community diabetes specialist nurse persuaded her to practise giving herself the injections under observation for a couple of days. After a few attempts she realised that it wasn't as painful as she thought and felt confident enough to self-manage her insulin therapy. Since then, her blood glucose control has been much better and she has been busy enjoying spending time with her grandchildren and gardening.

### Patient-centred care is at the heart of management

Anita, a 55 year old woman from Turkey Street with diabetes, refused to take additional medication to improve her diabetes control as she was worried about the possibility of hypos. She needed to drive to get work every day so when she was told that the DVLA guidance suggested glucose monitoring when driving on certain medications, she was even more reluctant. Different options were discussed with her GP, including one medication which does not cause hypoglycaemia. She agreed to try the new medication for a period of three months then re-assess. She carefully took the medications and was able to drive with no risk to herself or to other road users.

### Mental wellbeing matters to managing diabetes

Ali is a 45 year old man from South East Enfield with diabetes and a mental illness. He has limited capacity to organise his care but on formal assessment, he was cognitively competent to understand the significance of his physical condition. He declined social support. As a result, his blood glucose level as well as blood pressure and cholesterol were poorly controlled. He lives by himself and has limited social interaction and no relative or friend to help him take his medications. He does not engage in physical activity or eat healthily to tackle his obesity. One day when at the local shop, Ali collapsed, fell into a coma and was taken to hospital by an ambulance.

### Diabetes during and after pregnancy

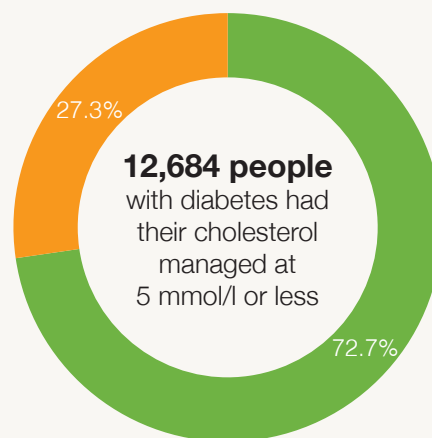
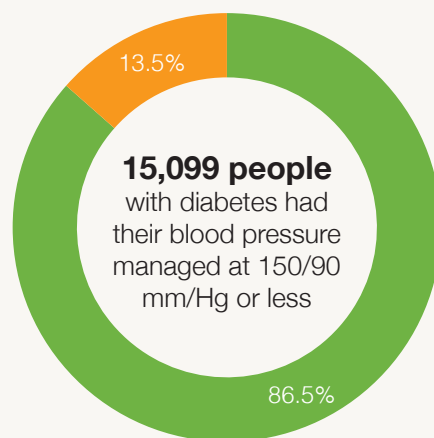
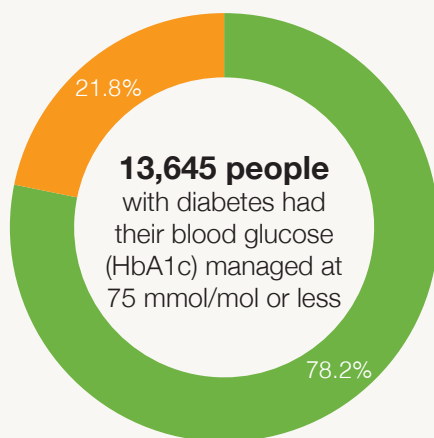
Lola is a 25 year old pregnant woman from Southgate. When she went to her 12-week booking she was asked, as is routine, about her family history of diabetes. She told the midwife that both her father and uncle were diabetic. Lola was then screened using a glucose tolerance test at 26 weeks and the test confirmed gestational diabetes. Lola was treated and monitored closely by the midwife and antenatal diabetes team at the hospital to prevent complications to her and her unborn baby, such as the baby being very large, premature birth, miscarriage and still birth. Happily, her condition was well controlled, she delivered a healthy baby boy at term and her diabetes disappeared. After the birth she had regular blood tests and has started exercising and eating healthily to reduce her risk of developing Type 2 diabetes.

# MANAGEMENT OF DIABETES IN ENFIELD

## KEY MESSAGE

You can manage your diabetes by taking control of your lifestyle (i.e. diet, physical activity, smoking) and following the treatment regime for blood glucose, blood pressure and cholesterol.

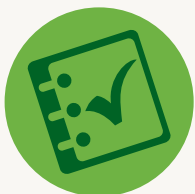
Managing diabetes is essential to lead a long and fulfilling life. In Enfield:



■ Managed ■ Not managed

Source: QOF 2014/15, HSCIC

Patients with diabetes can also benefit from taking up opportunities such as structured education, annual flu vaccination and retinal screening. In Enfield:



**67.1%** of people newly diagnosed with diabetes (842 people) were referred to a **structured education programme** (2014/15). This was below the London average of 75.4%.



**76.7%** of people with diabetes (13,342 people) received a **flu vaccination** (2014/15). This compared to 75.5% in London.



**80.1%** of patients with diabetes (13,539 people) received annual **retinal screening** 2013/14.\* This was below the London average of 82.5%.

\* 2013/14 is the latest data available.



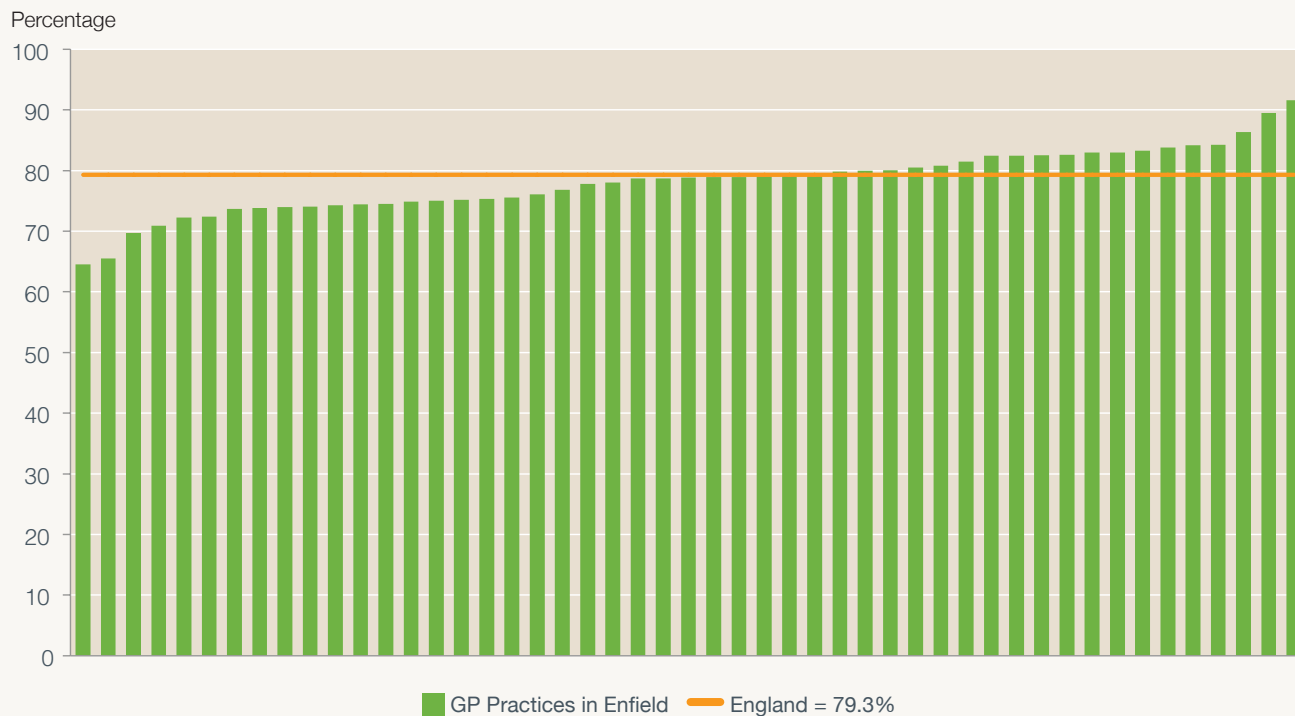
Source: QOF, HSCIC



Across Enfield GP practices, there is wide variation in the level of diabetes management. For example, in 2014/15, the percentage of patients with diabetes who had their blood glucose managed to an adequate level varied from 64.5% to 91.6%. Some variation is naturally expected, however it is important to identify and reduce the unwarranted variation to improve the quality of care people in Enfield receive.

If we can reduce the variation by improving the performance of those practices achieving below the England average to match the England average, there will be an additional 405 patients with better control of blood glucose, 352 patients with better control of blood pressure and 189 patients with better control of cholesterol in Enfield.

### Percentage of patients with diabetes who are managing their blood glucose levels, (75 mmol/mol or less), by GP practice in Enfield (2014/15)

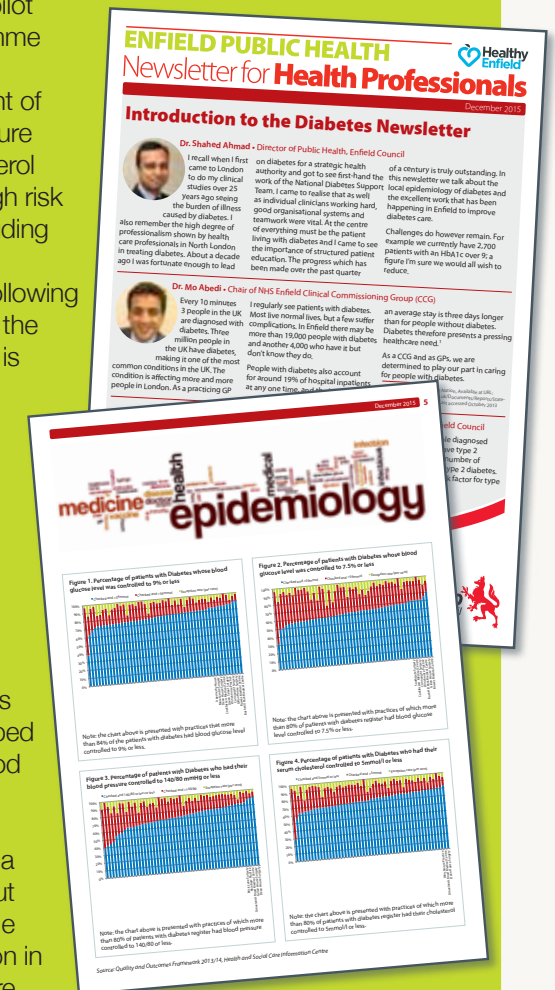


Source: Quality and Outcomes Framework, HSCIC

## Working with GPs to improve the level of management while reducing the unwarranted variation in Enfield

The 'HiLo' pilot is a programme to support management of blood pressure and cholesterol amongst high risk groups including those with diabetes. Following its success, the programme is going to be extended into further large surgeries.

A Public Health newsletter for health professionals was developed to share good practice in Enfield and to stimulate a debate about how to tackle wide variation in diabetes care.



# LONG-TERM CONSEQUENCES OF DIABETES

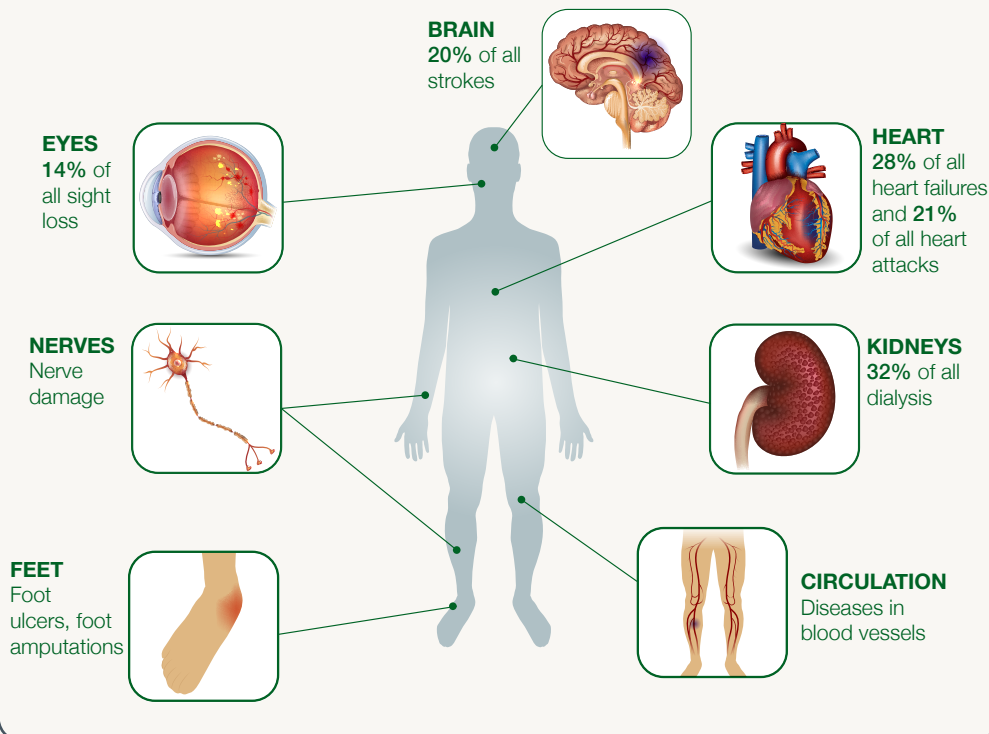
## KEY MESSAGE

If you have diabetes, it is essential that you manage it properly to avoid long-term health consequences such as blindness, stroke, heart attack, heart failure, kidney failure and foot amputation.

There are various long-term consequences of diabetes, but by managing it properly you can avoid them and can live a long and fulfilling life.

### Major consequences related to unmanaged diabetes

In the UK, a substantial proportion of all hospital admissions related to blood vessels and nerves are attributable to diabetes:



### Unmanaged diabetes and average life expectancy

Diabetes can lead to a shorter life expectancy, in large part because of unmanaged diabetes.

The Framingham Heart Study<sup>13</sup> found that...



Women aged 50+ with diabetes live **8.2 years less** than those without.

Men aged 50+ with diabetes live **7.5 years less** than those without.

### Diabetes and mental health

People with diabetes have higher rates of mental health problems such as depression: approximately 30% of people with diabetes experience depressive symptoms.<sup>14</sup>

Conversely, people with depression have an increased risk of developing Type 2 diabetes of approximately 60%.<sup>15</sup>

People with diabetes and mental health problems are less adherent to medical care and suffer more health complications.<sup>16</sup>

### How does Enfield compare?

The latest data shows that amongst people with diabetes in Enfield<sup>13</sup>, there are:

- **5x** as many cases of renal replacement therapy (RRT) and
- almost **3x** as many cases of angina

than would be expected for people without diabetes.

The report also shows that the increased rates of RRT and angina amongst people with diabetes are **significantly higher** in Enfield than the average in England and Wales.

Source: National Diabetes Audit 2012-13, HSCIC

# BENCHMARKING AGAINST NORTH CENTRAL LONDON

## KEY MESSAGE

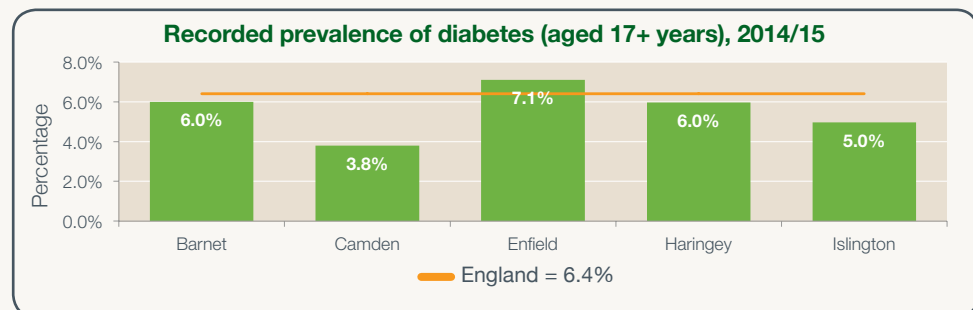
The prevalence of diabetes in Enfield is the highest amongst North Central London (NCL) CCGs. Partners of NCL Strategic Planning Group are working together to deliver sustainable, transformed local health and care services by 2020/21.

Enfield, Barnet, Haringey, Camden and Islington came together to form the North Central London Strategic Planning Group (NCL SPG) and collaboratively to deliver sustainable, transformed local health and care services. This includes CCGs, Local Authorities and Providers (including local hospitals, mental health, social care, and primary care).

Enfield CCG, the Council, North Middlesex University Hospital NHS Trust, Royal Free London Hospital NHS Foundation Trust and Barnet, Enfield and Haringey Mental Health NHS Trust are all members of the NCL SPG.

### Prevalence of diabetes

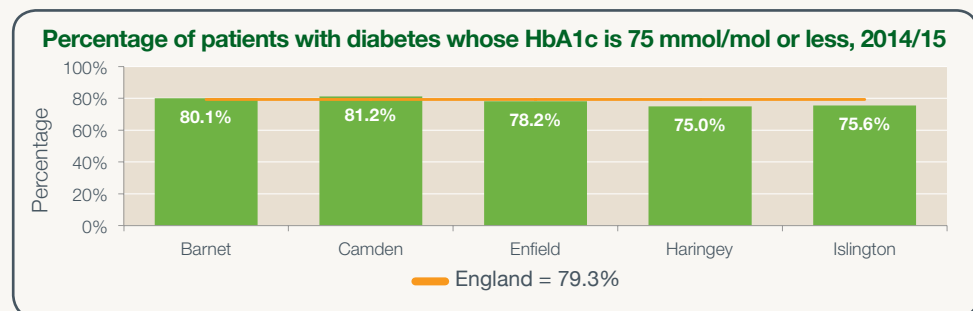
Enfield has the highest recorded prevalence of diabetes amongst NCL CCGs.



Source: QOF, HSCIC

### Management of diabetes: Blood sugar

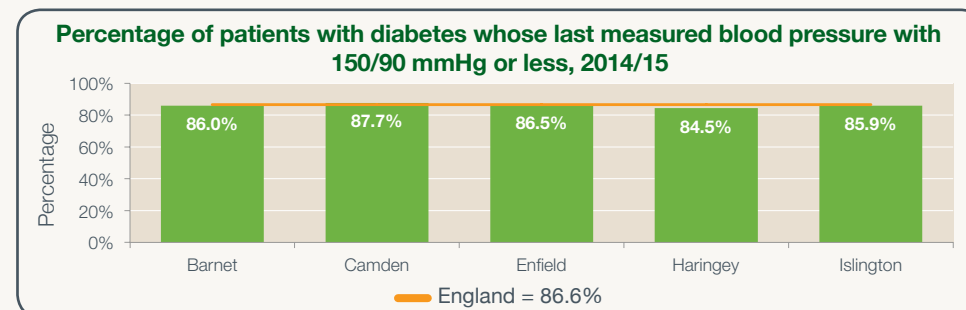
The percentage of patients with diabetes whose blood glucose was managed at 75 mmol/mol or less varied from 75.0% to 81.2% in NCL.



Source: QOF, HSCIC

### Management of diabetes: Blood pressure

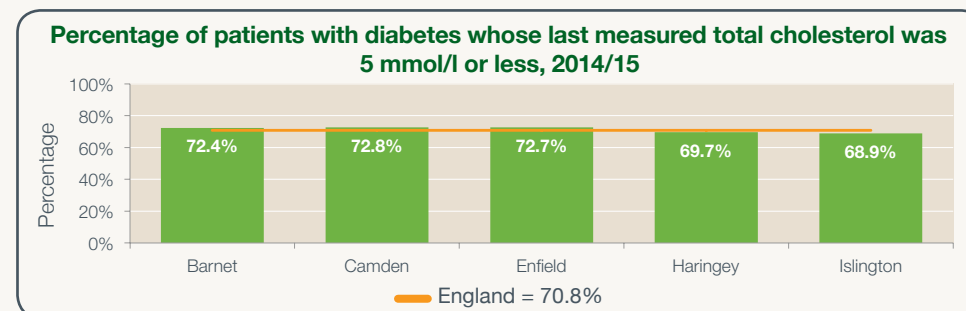
The percentage of patients with diabetes whose blood pressure was managed to 150/90 mmHg or less was similar across NCL.



Source: QOF, HSCIC

### Management of diabetes: Cholesterol

Enfield had one of the highest percentages of patients with diabetes whose cholesterol was managed at 5 mmol/l or less in NCL.



Source: QOF, HSCIC

# WHAT ARE WE DOING ABOUT DIABETES IN ENFIELD?

**Public and voluntary sector partners in Enfield are working together to prevent new cases of diabetes and to improve the quality of care for people with diabetes.**

## TACKLING THE RISK FACTORS

Our health is hugely influenced by various environmental factors. We know that a sedentary lifestyle and easy access to high-density calorific foods are major contributors to the recent increase of obesity and Type 2 diabetes. Environmental change that makes healthier choices easier is therefore crucial in reducing future diabetes cases. In Enfield, several programmes are in place to achieve this:

- ‘Cycle Enfield’ encourages people to make physical activity part of their daily lives. With good infrastructure, cycling can become easier to build into day-to-day activities. For example, in Copenhagen 57% of people cycle every day.<sup>17</sup>
- Enfield has 17 outdoor gyms that provide free access to exercise equipment for a high proportion of the residents in the borough.

There are also other services to support people to lead healthy lifestyles:

- Enfield Stop Smoking service offers a variety of group and one-to-one clinics to help people quit smoking over 6 weeks. In Enfield, 1,582 people quit smoking through this service in 2014/15. The level of smoking in Enfield has been falling for the past few years, from 19.4% in 2010 to 13.6% in 2014.

- Health Trainers provide confidential one-to-one support to people over the age of 18 years who want to make lifestyle changes. Over 1,000 people were supported by Health Trainers in Enfield in 2014/15.
- Health Champions work with the communities at higher risk of cardiovascular disease to encourage them to healthy lifestyle and promote national health campaigns such as FAST, Stoptober and blood pressure awareness.

## RAISING AWARENES AMONGST THE GENERAL PUBLIC AND HEALTH & SOCIAL CARE PROFESSIONALS

- The Council's public health team has delivered several public awareness campaigns about healthy lifestyles and diet in communities which have a higher diabetes risk, as well as alerting GP practices about unwarranted variation and local best practice in managing diabetes.
- The team also work with Enfield Diabetes Support Groups to develop ‘Living with diabetes’ and other information needs for self-management of diabetes.
- The Council's public health team used social marketing tools to target patients in deprived areas to improve self-management and adherence to medication.

## EARLY DIAGNOSIS

- NHS Enfield CCG, in partnership with GPs and the Council's public health team, are working on a programme that will improve the identification of people at increased risk of diabetes (prediabetes) over the next three years and offer them lifestyle advice to reduce the risk of developing diabetes.
- Since 2011/12, over 18,000 health checks have been delivered in Enfield, where people have their blood pressure, cholesterol and blood sugar measured and are given lifestyle advice and support to manage these risk factors.
- Enfield promotes opportunistic diabetes screening by GPs and other primary care providers such as pharmacists.



- ‘Making Every Contact Count’ training has been provided for front-line staff working in health and social care so that they can encourage behaviour change and promote a healthy lifestyle to people accessing their services.

## DIABETES MANAGEMENT

### Structured education

In Enfield, patients with diabetes can access an innovative educational method called Conversation Map Tools that uses interactive group participation to empower them to become actively involved in self-managing their condition. In 2014/15, 845 newly diagnosed patients were referred to this programme in Enfield.

### Eight Care Processes

NHS Enfield CCG, GPs and the Council's public health team are working towards improving the recording and reporting of the eight diabetes care processes (blood pressure, BMI, cholesterol, cardiovascular risk, smoking status, diabetes treatment and emergency complications) that are recommended by the National Institute for Clinical Excellence (NICE).

### Supporting diabetes care

Diabetes is a long term condition so requires ongoing care from a range of health care services. In Enfield, GPs work with North Middlesex University Hospital NHS Trust, the Royal Free London NHS Trust and Enfield community diabetic specialist nurses.

Enfield retinal screening service is provided by North Middlesex University Hospital although this service is directly commissioned by NHS England.

Enfield has developed a diabetes care pathway to provide care to support patients with diabetes at each stage of the disease, working across the Council, NHS Enfield CCG, community and acute diabetes specialist services, and GPs.

### Managing patients at high risk of cardiovascular disease

Enfield has initiated a programme aimed at identifying diabetic (and other) patients on the GP clinical systems who are at risk of high blood pressure and poor lipid control, so that GPs can treat them to reduce their risk of stroke and heart attacks.

### Management of complex cases

A pilot involving hospital diabetologists, GPs and community diabetes specialist nurses was undertaken in the South East Enfield locality. The aim was to facilitate a multidisciplinary approach to better manage complex cases in diabetes.

Enfield Diabetes Support Group

# Living with Diabetes

In collaboration with

NHS Enfield Community Services  
Barnet, Enfield & Haringey Mental Health Trust

NHS Enfield  
Clinical Commissioning Group

ENFIELD Council

# GLOSSARY

## 8 care processes

The Department of Health lists eight care processes that people with diabetes should receive each year. Together, these processes reduce the risk of a person with diabetes developing complications. The eight care process provided for diabetes patients are:

- HbA1c testing
- Blood pressure
- Cholesterol measurement
- Feet examination
- Urine albumin excretion
- Creatinine measurement
- Body mass index (BMI) measurement
- Smoking status

For people aged 12 years and above, an annual eye examination is also recommended.

## Alcohol guidelines

Government guidelines state that there's no safe level of alcohol consumption. Unit guidelines are the same for men and women and both are advised not to regularly drink more than 14 units per week.

## Angina

Angina is chest pain that occurs when the blood supply to the muscles of the heart is restricted. It usually happens because the arteries supplying the heart become hardened and narrowed. The pain and discomfort of angina feels like a dull, heavy or tight pain in the chest that can sometimes spread to the left arm, neck, jaw or back. GPs keep a register of people who have had angina in order to proactively reduce the risk of heart attacks.

## BMI

BMI (Body Mass Index) is a measure of weight in regard to height. It is used to quickly and simply determine if a person is underweight, normal weight, overweight or obese. BMI is calculated differently for children. An online calculator for both adults and children is found here: [www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx](http://www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx)

## Cholesterol

Cholesterol is a fatty substance known as a lipid that is vital for the normal functioning of the body. It's mainly made by the liver, but can also be found in some foods. High levels of cholesterol in the blood increase your risk of serious health conditions. People with high cardiovascular risk (defined as a 20% risk of getting heart disease or stroke in 10 years) need treatment to lower their cholesterol, no matter what the value is.

## Diabetic eye disease

Diabetic retinopathy is damage to the retina (the 'seeing' part at the back of the eye) and is a complication that can affect people with diabetes. Retinopathy is the most common cause of blindness among people of working age in the UK. Everyone over the age of 12 with diabetes should have their eyes checked every year for retinopathy.

## Diabetic foot disease

People with diabetes are at much greater risk of developing problems with their feet, due to the damage raised blood sugars can cause to sensation and circulation. It often starts as a small break in the skin such as a blister, and can quickly develop into a foot ulcer because the person has lost sensation in their feet and can't feel the pain. If left untreated, these problems can cause infections and, at worst, may lead to amputation. However, most foot problems are preventable by keeping an eye on your feet at home and making sure that you get a foot check from a qualified professional at least once a year.

## HbA1c test

This test measures the amount of glucose being carried by the red blood cells in the body and indicates a person's blood glucose levels for the previous two-to-three months. People with diabetes have at least one HbA1c test a year after diagnosis and the test has been recommended to also be used for diagnosing diabetes. A patient with HbA1c value of 48 mmol/mol (6.5%) and above is usually diagnosed as diabetic.

## Heart attack (Myocardial infarction)

A heart attack is a serious medical emergency in which the supply of blood to the heart is suddenly blocked, usually by a blood clot. Lack of blood to the heart can seriously damage the heart muscle. A heart attack is known medically as a myocardial infarction (MI). Symptoms can include:

- chest pain – the chest can feel like it is being pressed or squeezed by a heavy object, and pain can radiate from the chest to the jaw, neck, arms and back
- shortness of breath
- feeling weak and/or lightheaded
- overwhelming feeling of anxiety

### Hyperglycaemia (hyper)

Hypers can happen when your blood glucose levels are too high – usually above 7 mmol/l before a meal and above 8.5 mmol/l two hours after a meal. There are several reasons why this may happen. It may be that you:

- Have missed a dose of your medication
- Have eaten more carbohydrate than your body and/or medication can cope with
- Are stressed
- Are unwell from an infection
- Or from over-treating a hypo

### Hypertension

Hypertension is persistently high blood pressure. Blood pressure is recorded with two numbers. The systolic pressure (higher number) is the force at which your heart pumps blood around your body. The diastolic pressure (lower number) is the resistance to the blood flow in the blood vessels. As a general guide:

- hypertension is usually considered to be 140/90mmHg or higher
- ideal blood pressure is considered to be between 90/60mmHg and 120/80 mmHg.

For people with diabetes blood pressure is classed as 'high' when it is 140/80 mmHg or above, and for people with diabetes who are experiencing complications (for example, kidney disease) 130/80 mmHg.

### Hypoglycaemia (hypo)

Hypoglycaemia means 'low blood glucose levels' – less than 4 mmol/l. This is too low to provide enough energy for your body's activities. Most hypos are mild, but if you have a severe hypo, you will be too ill to treat the hypo yourself. By law you must tell the DVLA if you have a severe hypo while driving or if you have more than one severe hypo in a year. Your GP or diabetes specialist nurse may be able to adjust your medication regime to prevent this. To prevent a hypo:

- Don't miss or delay a meal
- Remember to take your insulin and diabetes medication, and always take them correctly
- Eat extra carbohydrate if you are more active than normal
- Don't drink alcohol on an empty stomach or drink too much alcohol.
- Keep hypo treatment with you at all times.

### Insulin

Insulin is a hormone produced by the pancreas that allows glucose to enter the body's cells, where it is used as fuel for energy so we can work, play and generally live our lives. If you have Type 1 diabetes, your body cannot produce enough insulin. If you have Type 2 diabetes either there not enough insulin or the insulin receptors are not working properly.

### Neuropathy

Neuropathy is one of the long-term complications of diabetes which affects the nerves. High blood glucose levels damage the small blood vessels which supply the nerves thus preventing essential nutrients reaching the nerves. The nerve fibres are then damaged or disappear.

If the nerves that carry sensory information are affected, you can experience symptoms such as:

- Tingling and numbness
- Loss of ability to feel pain
- Loss of ability to detect changes in temperature
- Loss of balance
- Burning or shooting pains – these may be worse at night time.

The main danger of sensory neuropathy for someone with diabetes is loss of feeling in the feet, especially if you don't realise that this has happened. This is dangerous because you may not notice minor injuries, for example caused by walking around barefoot, sharp objects in shoes, friction from badly fitting shoes, or burns from radiators of hot water bottles.

If ignored, minor injuries may develop into infections or ulcers. People with diabetes are more likely to be admitted to hospital with a foot ulcer than with any other diabetes complication.

Other neuropathies include autonomic neuropathy (e.g. loss of bowel control, loss of bladder control, impotence) and motor neuropathy (e.g. muscle wasting).

### Obesity

BMI over 30 for adults (see BMI).

### Overweight

BMI 25-30 for adults (see BMI).

### Physical activity

To stay healthy, adults aged 19-64 should try to be active daily and should do:

- at least 150 minutes of moderate aerobic activity such as cycling or fast walking every week, and
- strength exercises on two or more days a week that work all the major muscles (legs, hips, back, abdomen, chest, shoulders and arms).

To maintain a basic level of health, children and young people aged 5 to 18 need to do:

- at least 60 minutes of physical activity every day – this should range from moderate activity, such as cycling and playground activities, to vigorous activity, such as running and tennis
- on three days a week, these activities should involve exercises for strong muscles, such as push-ups, and exercises for strong bones, such as jumping and running

We all should reduce the time they spend sitting watching TV, playing computer games and travelling by car when we could walk or cycle instead.

### Prediabetes

Prediabetes is a simple term to refer to non-diabetic hyperglycaemia, which is when blood glucose levels are raised to above normal, but are not in the diabetic range. People with prediabetes are at increased risk of developing Type 2 diabetes and other cardiovascular conditions. A UK expert group recommended using HbA1c values between 6.0-6.4% (42-47 mmol/mol) to indicate prediabetes.

### Renal replacement therapy (RRT)

Normally, the kidneys filter the blood, removing harmful waste products and excess fluid and turning these into urine to be passed out of the body. In severe acute kidney failure and in end-stage kidney disease, renal replacement therapy (RRT) is required to perform the work of the kidneys. RRT can be dialysis or kidney transplant.

### Stroke

A stroke is a serious, life-threatening medical condition that occurs when the blood supply to part of the brain is cut off.

The main symptoms of stroke can be remembered using the word 'FAST': Face-Arms-Speech-Time.

- Face – the face may have dropped on one side, the person may not be able to smile or their mouth or eye may have dropped.
- Arms – the person with suspected stroke may not be able to lift both arms and keep them there because of arm weakness or numbness in one arm.
- Speech – their speech may be slurred or garbled, or the person may not be able to talk at all despite appearing to be awake.
- Time – it is time to dial 999 immediately if you see any of these signs or symptoms.

### Structured education programme

A structured education programme is a planned and graded programme for patients with diabetes that is comprehensive in scope, flexible in content, responsive to an individual's clinical and psychological needs, and adaptable to his or her educational and cultural background. NICE recommends that this is offered at the time of diagnosis and then as required on an ongoing basis.

Diabetes education courses make living with diabetes easier. People who have been on a course feel more confident about looking after their condition and are less likely to suffer complications. Diabetes UK includes attending a course as one of the 15 Healthcare Essentials, the essential health checks and services that everyone with diabetes should be getting from their healthcare team every year.

### Symptoms

The early symptoms of diabetes may be subtle and non-specific. The most common symptoms are:

- Unexplained weight loss
- Feeling tired or lacking energy
- Excessive thirst
- More frequent urination
- Tingling or numbness in hands or feet
- Prolonged infections
- Slow healing of skin wounds
- Sudden problems with vision



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# USEFUL INFORMATION

Further information, tips and recipes are available from the following websites:

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**Enfield Diabetes Support Group** – your local group run by people with diabetes for you, your family and friends.

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**Diabetes UK** – offers various information on diabetes, as well as tips and advice on living with diabetes. Includes recipe ideas and support for self-management.

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**Diabetes Risk Calculator** – you can assess your own risk of Type 2 diabetes.

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**NHS Choices** – for information about diabetes and its treatment.

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**Change4Life** – tips, advice and various apps to support children and their families leading healthier lifestyles. Includes recipe and activity ideas.

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**One You** – helps adults get back to healthier lifestyles, supporting them to make simple changes towards a longer and happier life.

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**Enfield Joint Strategic Needs Assessment (JSNA)** – provides data and intelligence on Enfield's Health and Wellbeing status. The Joint Health and Wellbeing Strategy is also available via this link, stating our vision and commitment to improve the health and wellbeing of people in Enfield.

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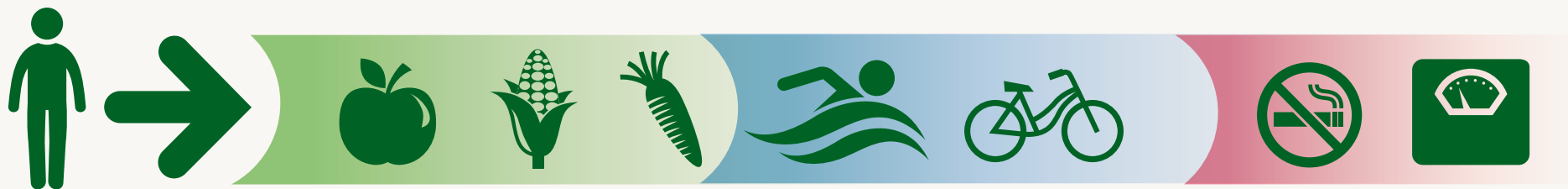
## Care in school helpline

Tel: 0345 123 2399\* Monday-Friday, 9am-7pm – will give you information about your child's rights and support you to improve your child's school experience. Many of the operators are parents of a child with Type 1 diabetes, so they understand the difficulties that parents can face.

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## NICE guidelines

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## Authors

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