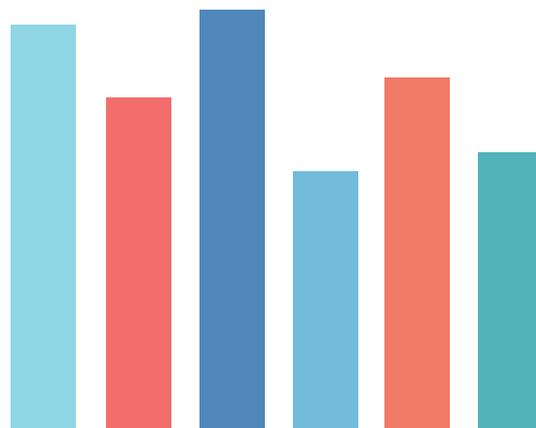
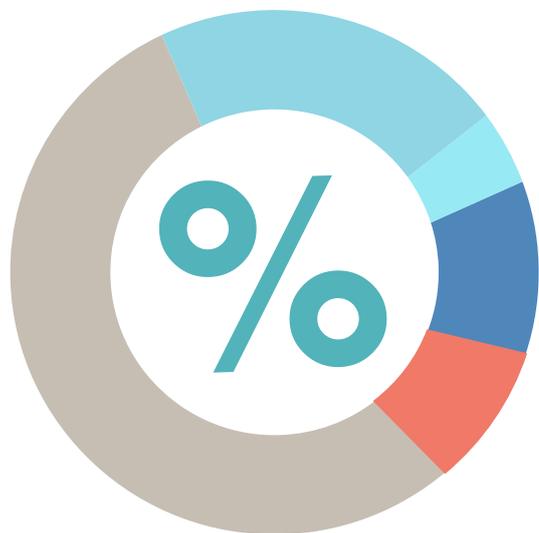


Pregnancy care for women with diabetes 2016

A summary report about the quality of care before and during pregnancy and the outcomes for women with diabetes

Based on findings from the National Pregnancy in Diabetes (NPID) audit 2016 in England, Wales and the Isle of Man



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Women with diabetes



Type 1 diabetes



Type 2 diabetes

Introduction

The 2016 National Pregnancy in Diabetes (NPID) audit report was published in October 2017. The report's findings are based on information collected about women with diabetes in 172 antenatal diabetes services in England, Wales and the Isle of Man whose pregnancies ended between 1 January and 31 December 2016.

The NPID audit provides information about the care of women with diabetes before and during pregnancy and the outcomes for these women and their babies. It does not include information on women who developed gestational diabetes during pregnancy.



The NPID audit is commissioned by the [Healthcare Quality and Improvement Partnership \(HQIP\)](#).

[NHS Digital](#) (formerly known as the Health and Social Care Information Centre) manages the NPID audit, working closely with [Diabetes UK](#). Clinical teams across England and Wales submit the information on which the audit is based. (Further information about the NPID audit and how the data is collected can be found at the back of this report – see [page 21](#).)

The 2016 NPID audit is the fourth audit of care and outcomes for women with diabetes and their babies before and during pregnancy, but comparisons have been made of trends over the last three years. The NPID examined three main questions:

- Were women with diabetes adequately prepared for pregnancy?
- Were the right things done to avoid harm to the mother?
- Were the right things done to avoid harm to the baby?

The NPID audit measured the information it gathered against the latest guidelines on diabetes care in pregnancy published by the National Institute for Health and Care Excellence (NICE). The audit also recorded the type of diabetes the women had, their age, ethnicity and social and economic backgrounds, to see if these factors had an impact on their preparation for pregnancy, how well they did during pregnancy and the outcomes for them and their babies. This year, for the first time, the NPID audit was able to compare the results of the 2016 audit with those from 2014 and 2015.

The findings show that over the last three years there has been little or no improvement in how women prepared for pregnancy, how well they managed their diabetes during pregnancy or in the outcomes for their babies compared with the standards set in the NICE recommendations. They also show that in some parts of the country all of these aspects of care are better than in others. This suggests that there is an opportunity to improve many of these. These factors (ie lack of improvement and local variation) are spelled out more specifically in each section of this report.

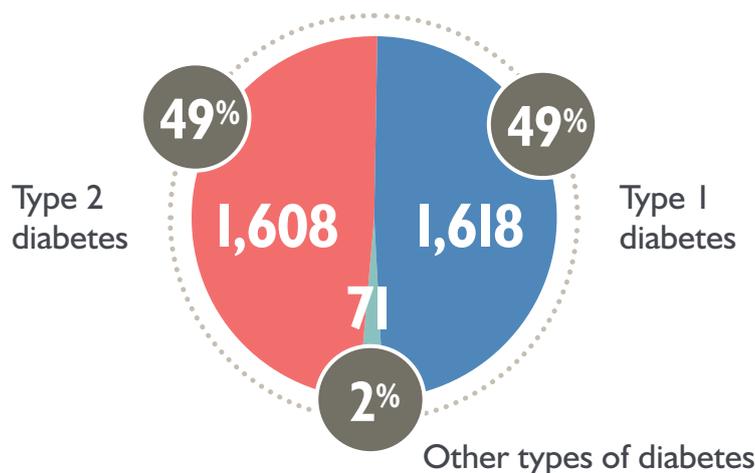
The NPID audit findings

What the findings showed about the women in the audit

Information was collected about 3,297 women whose pregnancies ended between 1 January 2016 and 31 December 2016. Seven of these women had two pregnancies during the year, so there were 3,304 pregnancies in total. There were also 49 twin pregnancies and one triplet pregnancy.

For the first time since the NIPD audits began, almost exactly half of the women (1,608) women had Type 2 diabetes – an increase of 7 percentage points since 2014. Also for the first time, more babies were born to mothers with Type 2 diabetes than Type 1 diabetes.

Percentage of women by diabetes type *



The average age of women with Type 1 diabetes was 30. For women with Type 2 diabetes it was 34. Nearly half of the women with Type 2 diabetes were black, Asian or of mixed ethnicity. Over three quarters of the women with Type 1 diabetes were white.**

The audit also looked at the women's social-economic backgrounds, breaking these down into five categories based on the postcode of their home address. These ranged from 'least deprived' to 'most deprived'. Women with Type 1 diabetes were fairly evenly spread across these five categories. However, women with Type 2 diabetes were much more likely to come from the more deprived areas. Over 40% came from the most deprived group.

* Information on type of diabetes was not available for 28 women. Another 43 had either maturity onset diabetes of the young (MODY), or were recorded as having 'other' diabetes type.

** Information on the women's ethnic background was not stated/unknown for 15% of those with Type 1 diabetes and 11% of those with Type 2.

Preparing for pregnancy

The NICE guidelines recommend that planning and care for women with diabetes starts before pregnancy. This can reduce risks of harm to a mother and her baby. The guidelines include:



achieving best possible blood glucose levels (HbA1c below 48mmol/mol [6.5%])



taking higher strength folic acid supplement (one 5mg tablet a day)



where possible, stopping medical treatments that might be risky during pregnancy

Blood glucose levels before pregnancy

Why it's important

HbA1c levels below 48 mmol/mol (6.5%) help reduce the risk of miscarriage, birth defects in babies, and stillbirth or death soon after birth.

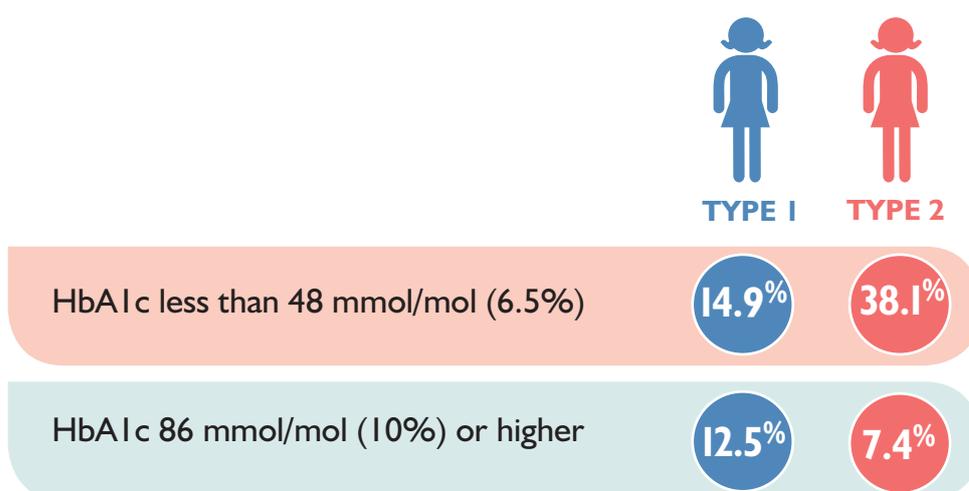
What NICE recommends

NICE guidelines recommend that HbA1c levels should be below 48mmol/mol (6.5%) during the first 12 weeks of pregnancy (also called the first trimester).

If a woman's HbA1c is 86 mmol/mol (10%) or higher, NICE strongly advises against pregnancy.

What the audit showed

Women with Type 2 diabetes were much more likely than women with Type 1 diabetes to have an HbA1c under 48mmol/mol during the first trimester, and less likely to have HbA1c of 86mmol/mol or higher.



Significantly fewer women from more deprived backgrounds had HbA1c below 48mmol/mol compared to women from less deprived backgrounds.

The numbers of women who achieve NICE's recommended target for HbA1c during the first trimester varied greatly between sites. The 2016 findings were similar to findings in 2013–2015.

Higher-strength folic acid supplement



Why it's important

Folic acid helps reduce the risk of brain and spine defects in babies (called neural tube defects). The risk of neural tube defects is higher in babies born to mothers with diabetes.

What NICE recommends

NICE advises that all women with diabetes should take 5mg of folic acid daily, starting well before conception and continuing for the first 12 weeks of pregnancy. This dose requires a prescription and is higher than the usual pregnancy dose of 400mcg (0.4mg) available over the counter.

What the audit showed

- Only 41.8% of women with Type 1 diabetes were taking the recommended 5mg folic acid supplement before pregnancy. The figures were even lower for women with Type 2, of whom only 22.8% had taken the recommended dose.
- 41.4% of women with Type 1 diabetes and over half of those with Type 2 (56.1%) had not taken any form of folic acid supplement before getting pregnant.
- For both Type 1 and Type 2 diabetes, significantly fewer women from deprived backgrounds had taken folic acid before getting pregnant.
- The number of women taking 5mg folic acid varied greatly between services – from none to more than 4 out of 5 mothers with Type 1 or Type 2 diabetes.

Medication review



Why it's important

The only medications for treating diabetes that are known to be safe to take while pregnant are insulin and metformin. Women with diabetes may be on treatment for high blood pressure or high cholesterol to lower their risk of complications of diabetes. These treatments include statins to help lower cholesterol, angiotensin-converting enzyme inhibitors (ACE inhibitors), or angiotensin receptor blockers (ARBs) for high blood pressure. These may cause harm to babies developing in the womb.

What NICE recommends

Women taking tablets other than metformin to control their blood glucose levels should stop doing so before pregnancy starts and use insulin instead during their pregnancy. Women taking ACE inhibitors, ARBs or statins should stop taking these medications before pregnancy or as soon as they know they are pregnant.

What the audit showed

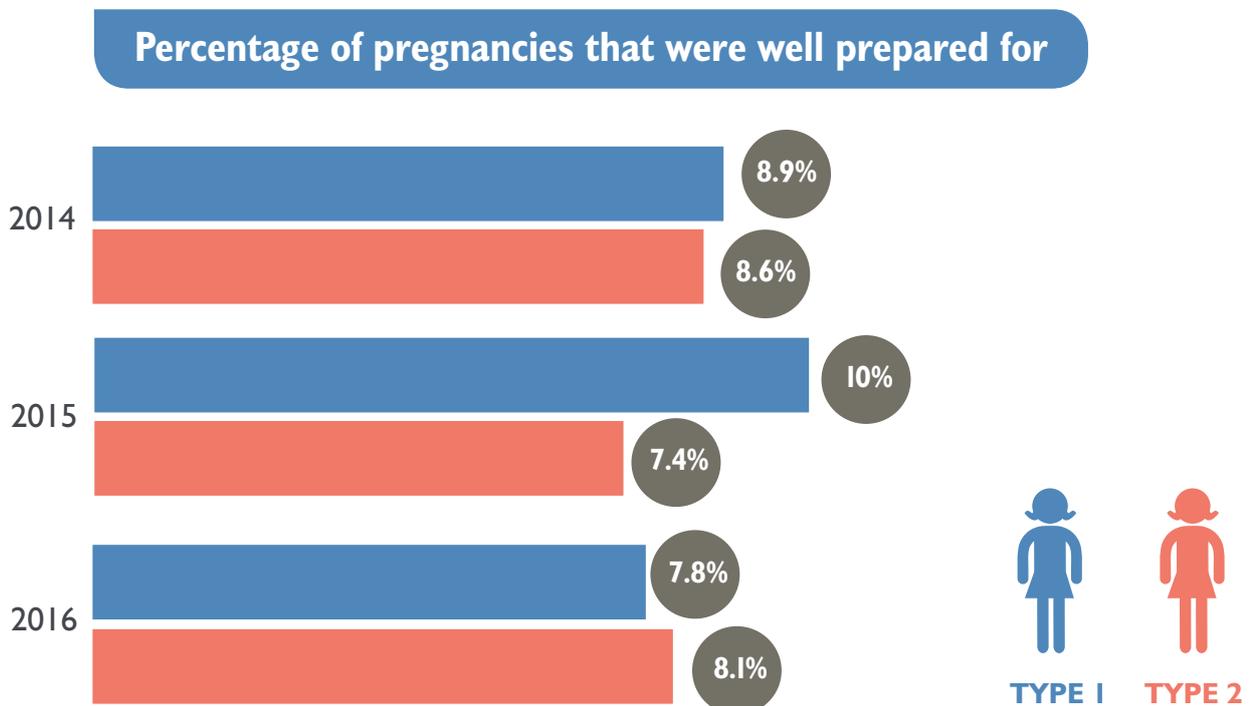
- At the time they became pregnant, 6.5% of women with Type 2 diabetes were taking tablets to lower blood glucose that are potentially harmful during pregnancy
- The number of women with Type 1 diabetes who were taking medications that can harm babies developing in the womb has fallen significantly (from 3.1% in 2014 to 1.8% in 2016)

Were women well prepared for pregnancy?

To be well prepared for pregnancy, women with diabetes should:

- have a first trimester HbA1c below 48 mmol/mol
- be taking 5mg folic acid daily
- stop taking medications that could harm their baby in the womb.

By this definition, only one in twelve of the women in the 2016 audit were 'well prepared'. This is similar for women with Type 1 and Type 2 diabetes, and has not changed significantly since 2014.



The audit also showed that women from the most deprived areas were less well prepared for pregnancy. This highlights the differences between local services and women from differing social backgrounds. It is clear from these findings that there are opportunities to improve pregnancy preparation, for example by improving levels of awareness and support across all groups and publicising the benefits of better pregnancy preparation.

Why preparing for pregnancy with diabetes is important

Most women with diabetes have successful pregnancies and babies that are born safely. However, there are risks, and these sometimes lead to health problems, either for the mother, the fetus or the newborn child.

So it is important that women with diabetes who are pregnant or planning pregnancy have the right care, support and information to help them and their baby stay well. For safe pregnancy with diabetes, planning and care starts before stopping contraception.

Some of the risks to the mother include:



- having a severe low blood glucose episode (hypo)
- problems with eyes and kidneys, which can become worse during pregnancy
- having a large baby, which increases the likelihood of birth problems

Babies may have an increased risk of:



- developing a birth defect (congenital anomaly)
- being stillborn or dying in the 28 days after birth
- health problems (most commonly large babies or premature birth) that may require special or intensive hospital care



HbA1c

Good care starts before conception with careful blood glucose management and a healthy lifestyle. Women should aim for their HbA1c to be below 48 mmol/mol (6.5%) before stopping contraception. If their HbA1c is above 86 mmol/mol (10%), they should use safe, effective contraception and avoid pregnancy until they are able to achieve better blood glucose control.



Folic Acid

Women with diabetes should take a higher than standard dose folic acid supplement (5mg), available on prescription. This should be taken before stopping contraception and for the first 12 weeks of pregnancy. This is because babies of women with diabetes have an increased risk of brain and spinal defects – also called neural tube defects – which may lead to conditions like spina bifida. Folic acid is known to help reduce the risk of these problems.



Make contact with healthcare team before pregnancy

Women with diabetes who are thinking about having a baby should make contact with their healthcare team as soon as they can. This will help them to make sure they are confident about the things they can do to reduce any risks to themselves and their baby.



Make contact with your antenatal team early in pregnancy

Women with diabetes who have already conceived should make contact with the antenatal team straight away. Again, this will help them to find out what they need to do to reduce risks to themselves and their baby.

Treatment and care during pregnancy

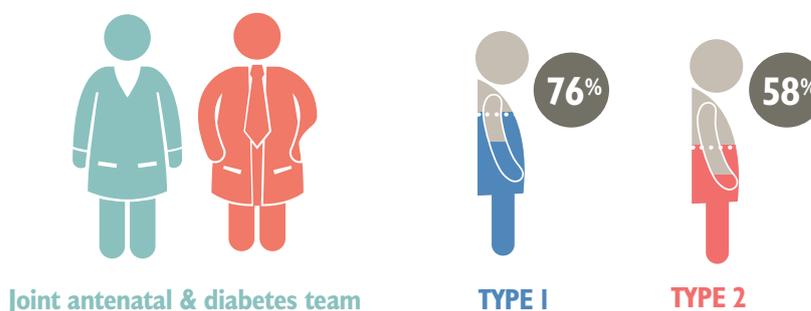
First antenatal appointment

NICE guidelines recommend that all pregnant women with diabetes should have an appointment with a joint diabetes and antenatal team at the earliest opportunity.



The 2016 audit showed that three quarters of the women with Type 1 diabetes (76%) had their first contact with a joint diabetes and antenatal team before the tenth week of their pregnancy. By contrast, only slightly more than half the women with Type 2 diabetes (58%) had their first contact within 10 weeks.

First appointment within 10 weeks



The audit showed significant variation between services. Among women with Type 1 diabetes, those who had contact with the antenatal diabetes team in the first 10 weeks of pregnancy ranged from 100% in some clinics to as few as 25% in others. For women with Type 2 diabetes the range was even more extreme – from 100% to only 10%.

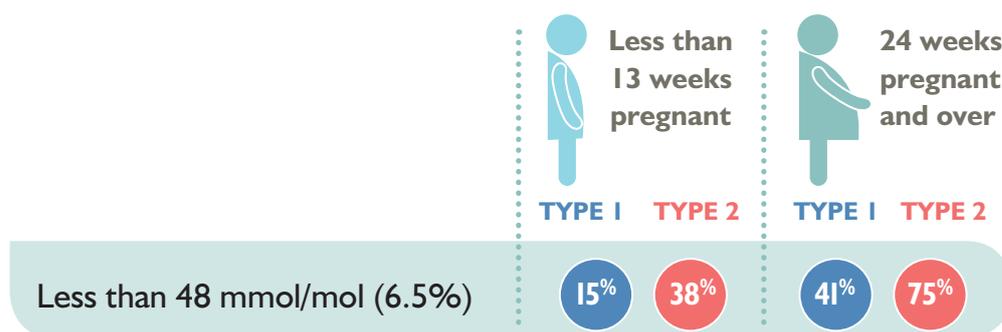
Keeping checks on blood glucose

Ensuring best possible glucose control throughout pregnancy is essential. In order to reduce risks to mother and baby, pregnant women with diabetes should aim for an HbA1c of less than 48 mmol/mol. To help them achieve this, they should have regular contact every 1–2 weeks with their joint diabetes and antenatal team throughout pregnancy to get support and advice around managing glucose levels, monitoring for risks and managing problems.



The audit collected information on HbA1c at the women’s first and the last appointment during pregnancy.

HbA1c in early and late pregnancy



The picture on page 9 shows that HbA1c levels fell as pregnancy progressed, both for women with Type 1 and for women with Type 2 diabetes. For women with Type 1 diabetes, just over 41% had an HbA1c below 48mmol/mol at 24 weeks or later, compared to just under 15% in the first trimester. For women with Type 2 diabetes, 75% had an HbA1c below 48 mmol/mol at 24 weeks or later, compared to 38% in the first trimester. These results from the 2016 audit have not changed significantly since 2014.

HbA1c naturally falls during pregnancy because of biological changes in the body. As a result, it is not possible to say exactly how much of the fall shown in these results was due to better blood glucose management. However, women with Type 1 diabetes were significantly less likely to achieve HbA1c below 48mmol/mol if they came from more deprived areas. There was also significant variation between services – most notably for women with Type 1 diabetes, for whom successfully achieving third trimester HbA1c below 48 mmol/mol ranged from 0% in some services, to 82% in others.

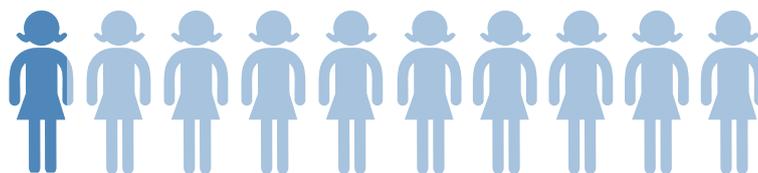
Hospital admissions for severe hypoglycaemia during pregnancy

Hypoglycaemia carries significant preventable risks for pregnant women and their babies. NICE recommends that women with diabetes should aim for an HbA1c of less than 48 mmol/mol (or 6.5%). This requires close monitoring and careful management of blood glucose levels. Lower blood glucose levels will increase the number of hypos and their severity.

The 2016 audit found that nearly 1 in 10 women with Type 1 diabetes went into hospital* with hypoglycaemia during their pregnancy.

At least one admission for hypoglycaemia

TYPE 1 DIABETES



Nearly 1 in 10 women

* This data includes admission to hospital where hypoglycaemia was recorded by the hospital. There may have been additional reasons for admission. The data only includes hypoglycaemia when the person was treated as an in-patient.

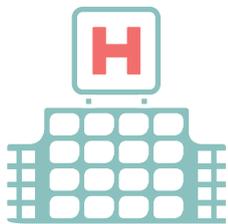
Hospital admissions for diabetic ketoacidosis (DKA) during pregnancy

Diabetic ketoacidosis (DKA) occurs when the body has no insulin to use and switches to using fat as a fuel instead. This process produces acidic ketones. High blood glucose and ketones can cause severe illness and even death. Like hypoglycaemia, the risk of DKA should be avoidable.

44 of the women with Type 1 diabetes in the 2016 audit (2.7%) were admitted to hospital with DKA during their pregnancy.

At least one admission for DKA

TYPE 1 DIABETES



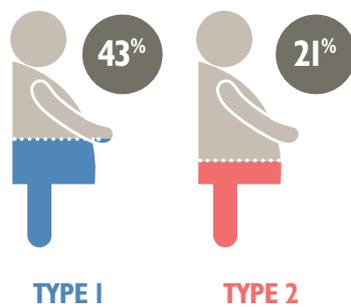
Timing and mode of birth

Duration of pregnancies

More than half of births took place between 37 and 38 weeks. For mothers with Type 1 diabetes, one in twenty births took place after 38 weeks (a significant reduction from the results of the 2014 audit, down from 5.9% to 4.8%). One in eight births took place after 38 weeks to mothers with Type 2 diabetes.

Babies born before 37 weeks are called 'preterm'. The audit showed that a higher proportion (43%) of babies born to women with Type 1 diabetes were preterm compared to those born to women with Type 2 diabetes (21%).

DELIVERY < 37 WEEKS (PRETERM BABIES)



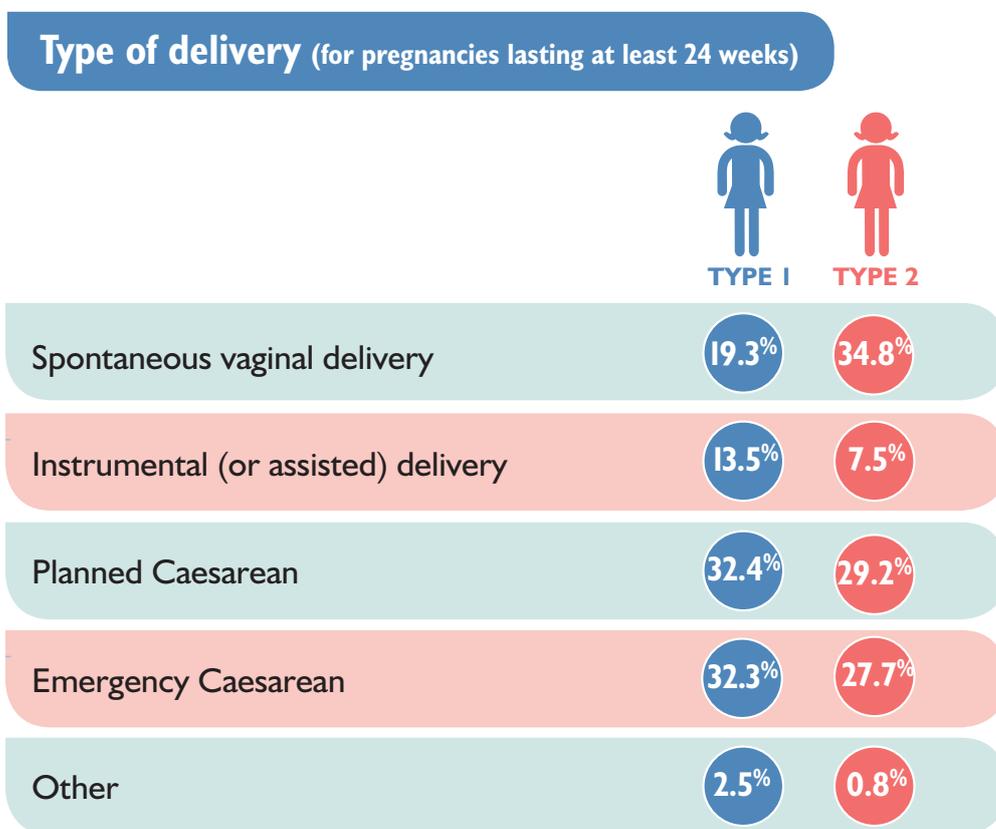
Onset of labour

The timing of birth for women with diabetes is important because if the pregnancy continues too long there is an increased risk of problems for mother and baby. The NICE guidelines recommend that all women with diabetes should have their labour induced, or have a Caesarean section, between 37 and 38 weeks plus six days of pregnancy. If there are complications, NICE recommends that this may need to happen sooner than 37 weeks.

The 2016 NPID audit showed that less than one in six women went into spontaneous labour. The rest were either induced or had a Caesarean section. Women with Type 1 diabetes were more likely (just over 32%) to have a Caesarean section before going into labour than women with Type 2 diabetes (almost 30%).

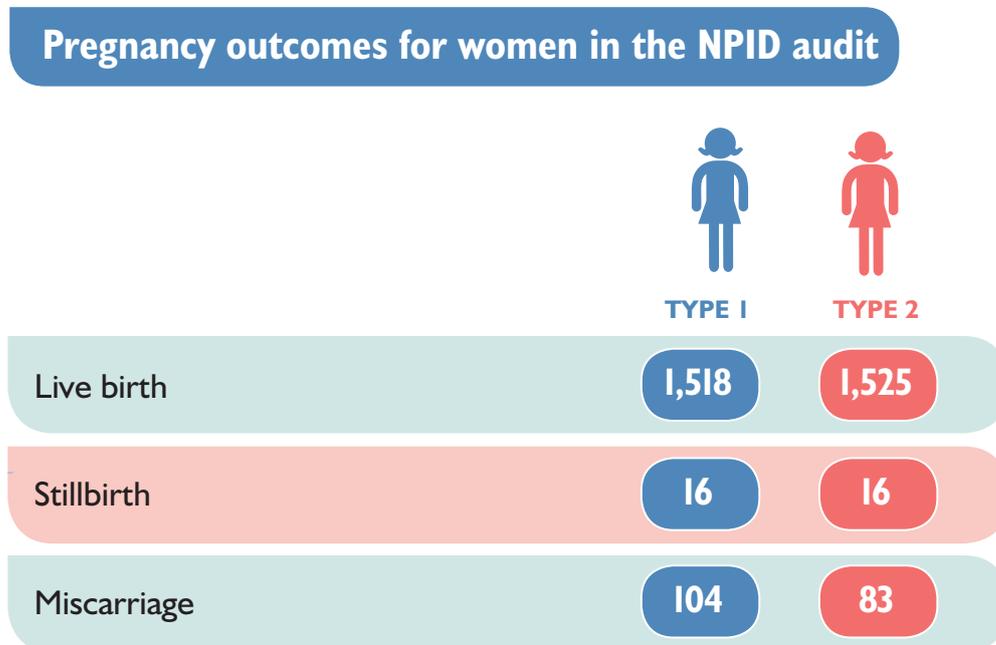
Type of delivery

Caesarean section was the most common mode of delivery. Just under 65% of women with Type 1 diabetes and 57% of women with Type 2 diabetes had a Caesarean (planned or emergency).



Pregnancy outcomes

Almost all (99.0%) of the registered births (which includes both live births and stillbirths) recorded in the NPID audit in 2016 were live births. This is slightly less than the equivalent percentage for registered births in England and Wales to women in the general population (ie women who do not have diabetes). Of these, 99.6% were live births.



Some miscarriages and terminations early in pregnancy may not be included if they happened before women had their first appointment.

Stillbirths and neonatal deaths

Although almost all pregnancies in women with diabetes end successfully, women with diabetes have a higher chance than women in the general population of having a stillborn child or a child that dies within the first 28 days of life (called a neonatal death).

Among women in the general population in England and Wales, the stillbirth rate is 4 out of every 1,000 births. For women with diabetes (both Type 1 and Type 2) it is 10 out of every 1,000 births.

It is important to be cautious about making comparisons between the NPID audit rates and other rates. For example, women in the NPID are generally a bit older than women in the national figures (the risk of stillbirth and neonatal death increases for older mothers).

The NPID results also showed that women with Type 1 diabetes whose pregnancy resulted in a stillbirth or neonatal death had significantly higher HbA1c during the first 12 weeks of their pregnancy.

Congenital anomalies

Most of the key stages in the development of a baby's organs (heart, lungs and nervous system) happen very early in pregnancy (before 10 weeks). If this goes wrong, it may result in the baby having an abnormality. This is called a congenital anomaly. Examples include congenital heart disease or spina bifida.

The 2016 NPID audit shows that women whose babies developed a congenital anomaly had, on average, higher HbA1c levels during the first 12 weeks of their pregnancy.

The importance of blood glucose levels in early pregnancy

The table below shows the median HbA1c levels in the first 12 weeks of pregnancy and the outcome of their pregnancy. (The 'median' is the middle value in a range of values when they are all put in order.)

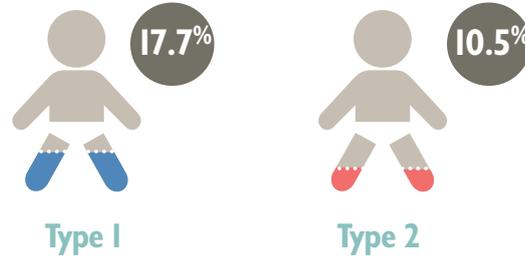
Median HbA1c in first 12 weeks		
	 TYPE 1	 TYPE 2
Baby without complications	60 mmol/mol	51 mmol/mol
Stillbirth or neonatal death	72 mmol/mol	54 mmol/mol
Miscarriage	68 mmol/mol	59 mmol/mol
Anomaly	68.5 mmol/mol	59 mmol/mol

These findings show how important it is for all women with diabetes to get the support they need to achieve the best possible blood glucose levels as a part of getting ready for pregnancy and early pregnancy.

Birthweight

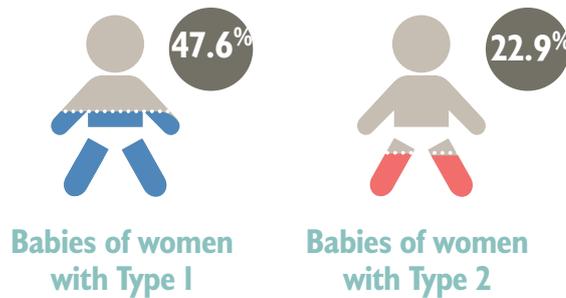
Macrosomia (babies born weighing 4kg/just under 9lbs, or more) is a recognised complication of pregnancy for the babies of women with diabetes.

BIRTHWEIGHT OF 4KG (JUST UNDER 9LBS) OR MORE



In the general population, only 10% of babies will be large for gestational age (LGA).^{*} Women with diabetes are more likely to have an LGA baby. The picture below shows that the percentage of LGA babies born to women with Type 1 and Type 2 diabetes is much higher.

LGA BABIES



^{*} 'Gestational age' is the term used to describe the length of a pregnancy from the date of the mother's last menstrual period.

What is an LGA baby?



For all women, the weight of their baby will depend on the length of the pregnancy. Other factors, such as the mother's height and weight, can also affect the baby's size.

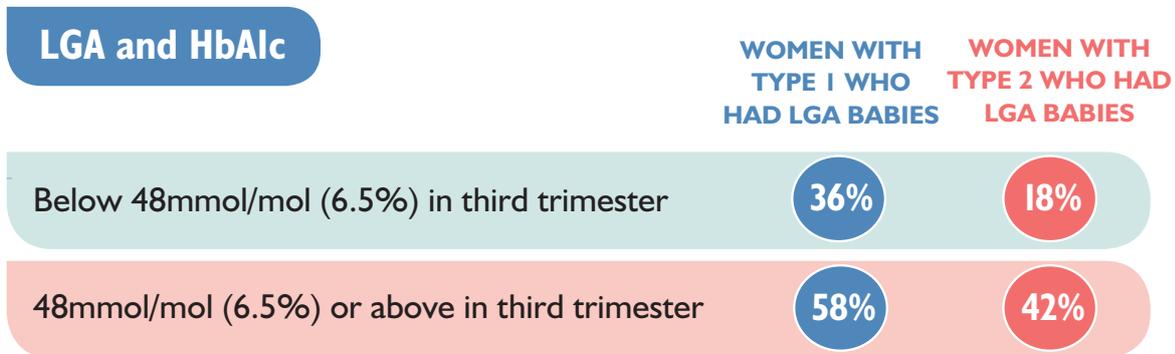
Instead of using just the weight of the baby, the audit takes into account these other factors. It uses the term large for gestational age (LGA). LGA is used to describe babies who are born weighing more than the usual amount for the number of weeks of pregnancy.

LGA babies have birthweights greater than the 90th percentile for their gestational age, meaning that they weigh more than 90% of all babies of the same gestational age.

What risks are associated with having an LGA baby?

Most babies who are LGA are delivered normally without any problems; however, there is an increase in the risk of problems during birth and the need for help delivering the baby.

Having an LGA baby is a risk for women with diabetes, even those women who have good blood glucose control throughout pregnancy. However, any attempt to lower HbA1c to below 48mmol/mol during pregnancy will help reduce the risk of having a LGA baby. The babies of women whose HbA1c was 48mmol/mol or above during their third trimester were more likely to be LGA compared with babies of women with lower blood glucose levels in late pregnancy.

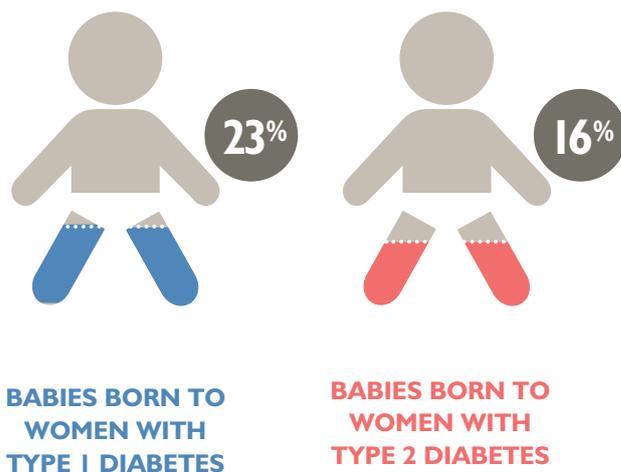


Care of newborns

NICE guidelines recommend that babies born to women with diabetes should stay with their mothers unless the baby is unwell, or needs close observation or special medical care.

For babies born at 37 weeks or later, the NPID audit found that the majority of babies did not need special or intensive care. However, 23% of babies born at 37 weeks or later to women with Type 1 diabetes and 16% of those born to women with Type 2 diabetes were admitted to a special care baby unit or intensive care. The audit found that babies were more likely to be admitted if the mother had an HbA1c of 48mmol/mol or above after 24 weeks.

Babies born 37 weeks or later who needed specialist care



Improving pregnancy preparation and pregnancy care for women with diabetes

Recommendations for healthcare professionals

The NPID audit findings highlight areas of healthcare that can give women with diabetes the best chance of both a healthy pregnancy and a healthy baby.

These are the recommended actions for all who provide healthcare to women with diabetes.

Review the NPID findings

This summary includes only national results. The 2016 audit highlighted significant variations in how effectively individual services measured up to NICE guidelines. All hospitals should look at their local findings, which can be downloaded from [NHS Digital's website](#).

This will help identify any areas a local team can work on to improve outcomes.

Diabetes and maternity services are recommended to work collaboratively to:

✓ Improve preparation for pregnancy by:

- raising awareness of the issues around pregnancy in women with diabetes
- informing women about the importance of, and options for, safe and effective contraception
- promoting access to pregnancy preparation support
- tailoring initiatives so that they take account of ethnicity, age and social deprivation and how these factors can influence how successfully women prepare for pregnancy
- tailoring approaches to offer individual women the right information at the right time.



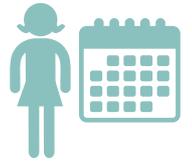
✓ Improve early contact with specialist support by:

- creating clear pathways for rapid referral to specialist teams, and publicising these to primary care and family planning services and to women themselves
- working proactively with women to help them achieve safe blood glucose levels during pregnancy.



Primary care, family planning and community teams are recommended to:

- ✓ develop a clear plan for all women with diabetes to ensure awareness of the importance of pregnancy preparation and of safe, effective contraception
- ✓ make discussion about pregnancy a normal part of consultations, including care and support planning consultations
- ✓ making use of [information prescriptions](#)
- ✓ have a clear understanding of how to use referral pathways for specialist support.



Specialist diabetes services are recommended to:

- ✓ routinely discuss pregnancy with all appropriate women
- ✓ access, where needed, new technologies to support blood glucose management
- ✓ develop skills in supporting self-management
- ✓ lead or identify leadership for quality improvement in antenatal diabetes care.



Recommendations for women with diabetes

It's important to remember that most women with diabetes have a safe pregnancy. Good preparation is the first and most important way to keep your risks low. This will put you in a good position to enjoy a safe pregnancy and birth.

If you are woman with diabetes thinking about having a baby:



- Talk to someone from your diabetes healthcare team before you stop contraception. Ask for information and advice – you need to know how pregnancy will affect your diabetes, and how diabetes might affect your pregnancy.



- Ask your healthcare team to refer you to a structured diabetes education course, such as DAFNE (for Type 1 diabetes) or DESMOND (for Type 2 diabetes).



- Try to keep your blood glucose on target. If your HbA1c is more than 86 mmol/mol (or 10%) you should take safe, effective contraception to avoid an unplanned pregnancy – the ideal pre-pregnancy HbA1c level is below 48 mmol/mol (or 6.5%). If you need help to achieve these levels, ask for help from your diabetes team.



- Start taking 5mg folic acid to help prevent your baby having neural tube defects – you can get this on prescription from your doctor.

When you get pregnant:



Try to keep your blood glucose levels on target (below 48mmol/mol)

You have a greater chance of having a healthy baby if your blood glucose levels are good throughout pregnancy. The **first four to six weeks** are especially important for your baby's development. This means being aware of when you might have conceived and being prepared to act immediately.



Make sure you are referred

Make sure you are referred to your local diabetes and antenatal team and go to all the recommended antenatal appointments and health checks.



Continue to take higher dose folic acid

Continue to take 5mg folic acid until the end of week 12 of your pregnancy.



Make sure you get all the checks you need

It's your right to have them. These include:

- eye screening – at around the time of your first antenatal clinic visit and again at 28 weeks if your first test is normal
- kidney tests
- baby scans and blood tests during pregnancy
- general checks during pregnancy on your baby's development



Check your medication

Some medicines are not suitable for pregnant women.

Some tablets for Type 2 diabetes may harm your baby. You may need to switch to insulin injections to control your blood glucose, but you can usually return to tablets after pregnancy. Your doctor will tell you whether you need to change your medication.

If you take blood pressure tablets or medication to lower cholesterol, such as statins or ACE inhibitors, tell your doctor or diabetes nurse immediately – these tablets may damage your baby's development.

Your local team will offer you regular support



Women with diabetes can find out more about the guidelines for antenatal and pregnancy health checks on the [NICE website](#).

The [Diabetes UK](#) website has good information about diabetes and pregnancy.

The [Women With Diabetes](#) website also has useful advice.



The [Go Folic](#) website has some helpful advice about folic acid and pregnancy.

Recommendations for women with diabetes



Further information

What is the NPID audit?

The NPID audit is a national clinical audit (or survey) about the care and health of women with diabetes who become pregnant.

The reason we collect this information and produce a report is to:

- highlight where pregnancy care is good and meets national guidelines
- show where care needs to improve

The findings will help hospitals raise the overall standard of care they provide for women with diabetes, from pre-conception through to the end of their pregnancy.

Specifically, the NPID audit looks at:

- how well women with diabetes are prepared for pregnancy
- whether the treatment and care given to women reduces the risk of certain complications during pregnancy
- whether treatment and care minimises the risk of the baby developing abnormally, or dying before or shortly after birth

Hospitals collect information for the audit all year round. A report will now be produced every other year which looks at the data collected in the preceding two years.

All women whose information was collected for the audit gave their permission for us to use personal data from their maternity records and hospital care they received during pregnancy.

You can read more about the audit methods and data collection on [page 23](#).

Why audit pregnancy care for women with diabetes?

Pregnancy in women with diabetes should result in a happy outcome for women and their babies. Good outcomes depend on being well prepared for pregnancy, achieving good blood glucose control during pregnancy, and having the right checks and specialist care.

All hospitals should follow national guidelines on standards of care. The National Institute for Health and Care Excellence (NICE) produces the guidelines for diabetes in pregnancy. Doctors, nurses and other healthcare staff should follow these guidelines to make sure that the care they give to women with diabetes provides the best possible chance of a healthy pregnancy and a healthy baby.

The NPID audit measures how well these standards are achieved. The main aim is to check that women with diabetes have information, support and care before and during pregnancy that minimises the risk of health complications for the woman, her fetus, and her new-born baby(s).

Findings from the NPID audit are sent to every hospital that has taken part. Hospital managers and staff are asked to look at areas where their care is below standard, and to develop plans to improve these services.

The full audit findings are also publicly available – you can find them on the [NHS Digital](#) website.

About this summary report

This report summarises the main findings of the NPID audit report for 2016. It is a document for everyone – people with diabetes, healthcare professionals, and anyone interested in diabetes and pregnancy.

Before writing this summary report, Diabetes UK talked to people with diabetes to find out what NPID audit information they wanted to see, and how best to present the findings.

In this report we explain:



The NPID audit only focuses on women who were already diagnosed with diabetes before they became pregnant. It does not include information about women who develop diabetes during pregnancy.

At the back of the report we have listed contact details for organisations if you want to find out more. There is also a glossary explaining some of the words and terms used in this report.

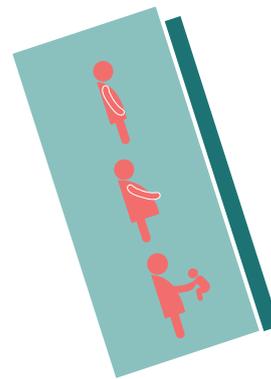
How the NPID audit collects information

The National Pregnancy in Diabetes (NPID) audit collects data year-round from joint diabetes and antenatal teams in England, Wales and the Isle of Man.

1 Doctors or nurses running diabetes antenatal clinics collect information on pregnant women with diabetes. This only includes information that is normally collected and recorded as part of pregnancy healthcare notes. For example, information about diabetes treatment, other medications, and the results of HbA1c, blood pressure and eye screening tests.



3 Women with diabetes attending a clinic get a leaflet to explain what the audit is about. They have the choice of agreeing or refusing to have their information included in the NPID audit. Only if they agree is their information used.



2 The NPID audit also collects information about how many pregnancies there are among women with diabetes, how many babies are born healthy and how many women have problems with their pregnancy or diabetes.

A full list of the information collected for the audit is available on the [NPID audit website](#).

4 Hospitals collect information for the NPID audit on a continuous basis. Each year there is a deadline for hospitals to send the information they have collected for the NPID audit. All the information from England, Wales and the Isle of Man goes to NHS Digital using a secure website. NHS Digital analyse all the data and include it in national and regional reports. They also publish them on the [NPID audit website](#).

Where to go for more information

The National Pregnancy in Diabetes (NPID) audit

Information about the NPID audit and copies of the full reports are available on NHS Digital's website <http://content.digital.nhs.uk/npid>

Diabetes UK

For more information about diabetes, including living with diabetes, go to www.diabetes.org.uk/Guide-to-diabetes or call Diabetes UK's Helpline on 0845 120 2960 for advice and support.

For information about getting involved in making a difference to diabetes treatment and care, go to www.diabetes.org.uuk/Get__involved/Campaigning/Diabetes-Voices

To find out more about Diabetes UK's activities in your area, go to www.diabetes.org.uk/In_Your_Area

Family Planning Association

For all you ever wanted to know about contraceptive methods, plus an easy-to-use tool to find the best contraceptive methods for you, go to the Family Planning Association website fpa.org.uk

National Institute for Health and Care Excellence (NICE) guidelines

For more information about how NICE develops guidelines, go to www.nice.org.uk

For guidelines about diabetes care in pregnancy, go to [NICE Guidelines NG3](#)

Healthcare Quality Improvement Partnership (HQIP)

To find out more about clinical audits – and patient involvement in national clinical audits – visit the HQIP website at www.hqip.org.uk/involving-patients

Patient Advice and Liaison Service (PALS)

If you have a question about local health services or an enquiry about health matters, you can contact PALS. Find more information about your local PALS at www.nhs.uk

Community Health Councils (CHC) in Wales

If you need help and advice about NHS Services in Wales, you can contact CHC. Find out more at www.wales.nhs.uk/sitesplus/899.home

NHS Choices (England)

NHS Choices provides information your health, including finding and using NHS Services in England. Find out more at www.nhs.uk

NHS Wales

NHS Wales provides information about your health, including finding and using NHS Services in Wales. Find out more at www.wales.nhs.uk

Glossary: explanation of terms used in this report

Audit

A way of gathering information and measuring local NHS organisations' performance and quality of care against national standards, from which come recommendations for improvements.

Blood glucose

The main sugar the body makes from the food we eat. Glucose travels in the bloodstream, providing energy to all our body's living cells. However, our cells cannot use glucose without the help insulin.

Body mass index (BMI)

A measure of a person's weight relative to their height, which shows if they are overweight or underweight.

Caesarean section

A surgical operation that involves making an opening in the mother's abdomen and womb, and removing the baby through it.

Cholesterol

A fatty substance, mainly made in the body from fat in the food we eat. A build up of too much cholesterol in the blood can cause narrowing of the arteries.

Complications of diabetes

Harmful effects that may happen when a person has diabetes.

Some effects, such as hypos, can happen at any time. Others develop when a person has had diabetes for a long time. These include damage to the eye (retinopathy), blood vessels (angiopathy), nervous system (neuropathy), and kidneys (nephropathy). Studies show that keeping blood glucose levels as close as possible to those of a person without diabetes may help prevent, slow, or delay harmful effects to the eyes, blood vessels, kidneys and nerves.

Congenital anomaly

Abnormal development of the baby's limbs, spine or internal organs. Most congenital anomalies develop during the early stages of pregnancy.

Diabetes

Diabetes is the shortened name for diabetes mellitus. Diabetes happens when the body cannot use blood glucose as energy, resulting in high glucose levels in the blood. This is usually either because the body has too little insulin or is unable to use insulin. See also Type 1 diabetes and Type 2 diabetes.

Diabetic retinopathy

A condition related to diabetes where there is damage to small blood vessels that supply the eye, affecting sight.

Fetus

The developing baby in the womb, from eight weeks after conception through to birth.

Folic acid

Folic acid, also called vitamin B9, is important for developing a healthy baby. It reduces the risk of neural tube defects, such as spina bifida.

Gestation

The period of a baby's growth in the womb, from conception to birth.

Gestational age

'Gestational age' is the term used to describe the length of a pregnancy from the date of the mother's last menstrual period.

HbA1c

The HbA1c (pronounced H B A one C) test uses a blood sample to measure a person's average blood glucose level over the previous two to three months. The result is given in mmol/mol or as a percentage.

Hypoglycaemia

Hypoglycaemia (or hypo) means 'low blood glucose levels', which are less than 4 mmol/l. Below this level the body no longer has enough energy available.

Induced labour or induction of labour

An induced labour is one started deliberately and artificially by using medication or rupturing membranes.

Insulin

A hormone produced by the pancreas that helps glucose in the blood to enter the body's cells, where it is converted into energy. Without insulin, the body cannot use glucose properly and blood glucose levels rise.

Median

The middle value of a range of values when they are all put in order.

Metformin

A medication to help lower blood glucose levels.

Miscarriage

The loss of a pregnancy before 24 weeks. Most miscarriages occur during the first 12 weeks of pregnancy.

National Institute for Health and Care Excellence (NICE)

NICE is the independent regulatory body providing national guidance to the NHS on new and existing medicines, treatment and care.

Neonatal

Anything about a newborn baby – for example, neonatal care is care of newly-born infant.

Neural tube defect

Abnormal development of the brain or spinal cord, such as spina bifida, which can develop in the baby during early pregnancy.

Spontaneous Vaginal Delivery

This is when a pregnant woman goes into labour without the use of drugs or help to induce labour, and delivers her baby in the normal manner, without forceps, vacuum extraction or a caesarean section.

Statins

Medication to reduce the cholesterol made by the body and so lower the cholesterol levels in the blood. They help to prevent heart disease but are not safe to take during pregnancy.

Stillbirth

The birth of a dead baby at 24 weeks' gestation or later. All stillbirths are registered, with a cause of death.

Trimester

Pregnancy lasts about 40 weeks, counting from the first day of a woman's last normal period. The first trimester is weeks one to 12, the second trimester weeks 13 to 28, and the third trimester is weeks 29 to 40.

Type 1 diabetes

Type 1 diabetes develops when the body destroys its own insulin-producing cells. When this happens a person needs regular insulin, given either by injection or an insulin pump.

Type 2 diabetes

A condition in which the body either makes too little insulin, or cannot use the insulin it produces to turn blood glucose into energy. Diet and exercise is often enough to control Type 2 diabetes effectively, but some people also need diabetes medication or insulin.

We welcome your views on how we can improve this report.

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