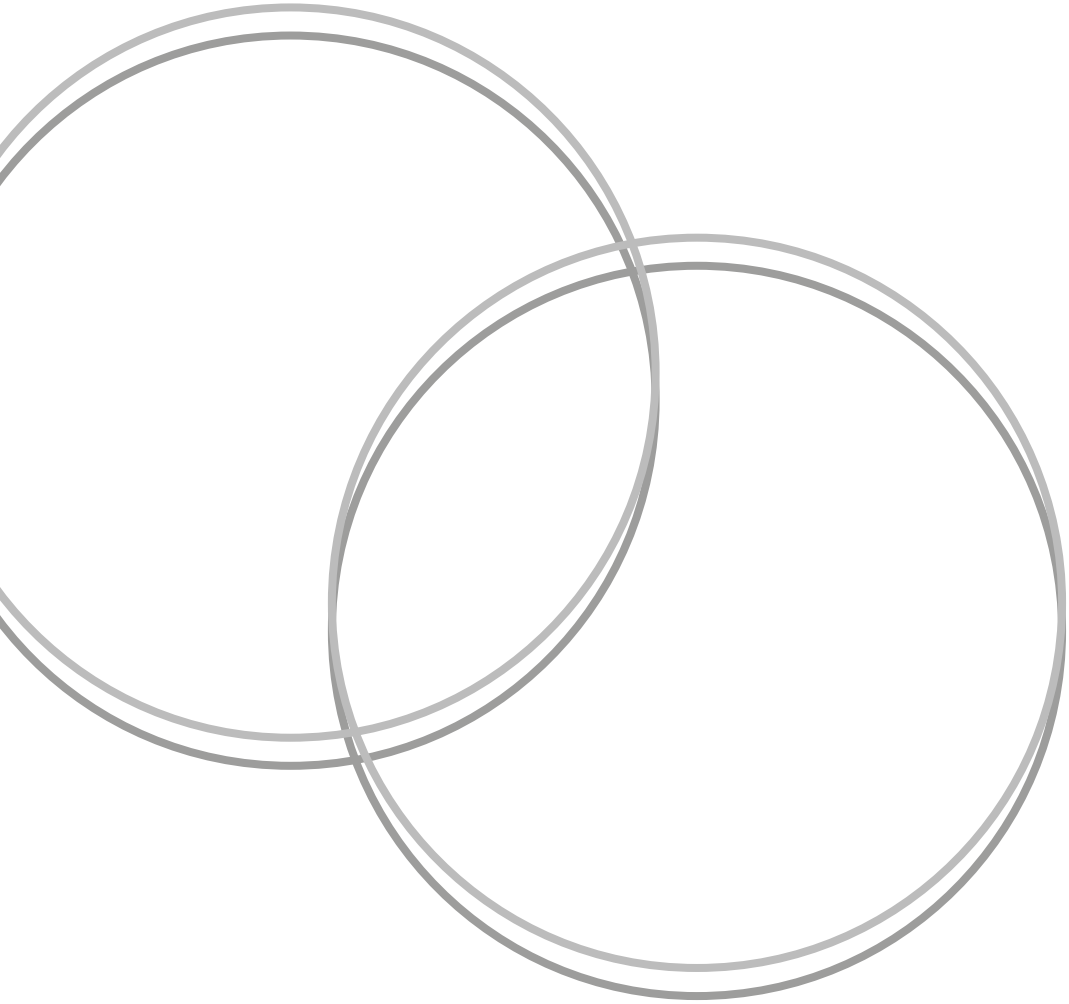
NHS
Oxford University Hospitals
NHS Foundation Trust

Pregnancy and Type 2 Diabetes

Information leaflet



This information leaflet is for people with type 2 diabetes that want to become pregnant or who are currently pregnant.

Most pregnant people with type 2 diabetes will go on to have a straightforward pregnancy and a healthy baby, but there are some complications you should be aware of which will be explained in this leaflet.

General information about type 2 diabetes and pregnancy

- Good blood glucose control is the best way to keep you healthy and ensure the best outcome for your baby (blood glucose is a type of sugar found in the blood).
- Pregnancy increases your blood glucose and can makes blood glucose control more difficult.
- Blood glucose monitoring before and during pregnancy is essential.
- If you have type 2 diabetes and are not already taking medication, you are likely to need treatment during pregnancy. This treatment will be a drug called metformin (taken as a tablet) and/or a hormone called insulin (given by injection) as your pregnancy progresses.
- If you have type 2 diabetes, we recommend that you are closely monitored during your pregnancy. We offer you appointments every 1 to 2 weeks.
- A higher body mass index (BMI) is known to increase the chance of complications during pregnancy. If you have a higher BMI (are overweight) prior to pregnancy, it will be beneficial for you to try to lose weight before conceiving (getting pregnant).
- Regular exercise and a balanced diet are particularly important before and during pregnancy.

What do I need to think about before getting pregnant?

Good blood glucose control is always important for a person with diabetes, however when planning a pregnancy, this is especially important. This ensures your baby has the best chance of developing normally. We therefore recommend that you have an HbA1c test. This is a test that checks the level of HbA1c (a type of haemoglobin) in your blood and it gives a good indication of how well your diabetes is being controlled.

Your GP or diabetes doctor will discuss appropriate targets for your blood glucose with you. If your readings are not at this level, they will suggest what you can do to help achieve this. In some situations, they will advise you not to get pregnant until your blood glucose level is under control. Your GP or practice nurse can refer you to the hospital preconception clinic to discuss your plans to become pregnant. This will help us to optimise the diabetes treatment we offer you.

We recommend that you have a blood test to check your HbA1c levels before pregnancy or in early pregnancy. We would like your HbA1c to be below 48mmol/l as this reduces the chance of complications for you and your baby.

How will my pregnancy affect my type 2 diabetes?

There are several ways pregnancy can affect your type 2 diabetes:

- Pregnancy can make you less aware of low blood glucose (hypoglycaemia), particularly during the first trimester (first 12 weeks of pregnancy). The symptoms you normally get with a low blood glucose such as shakiness, dizziness, sweating, hunger, irritability or moodiness, anxiety or nervousness, headache, may be less noticeable than before.
- Your blood glucose will increase throughout pregnancy. At the end of pregnancy some people are on twice or three times as much insulin as they were taking before pregnancy.
- Pregnancy can cause diabetic eye problems (diabetic retinopathy) to progress. You will therefore be offered eye screening on at least two occasions during your pregnancy.
- Pregnancy can cause diabetic nephropathy (kidney problems associated with diabetes) to worsen. You will therefore be offered regular blood tests to check your kidney function.

How will my type 2 diabetes affect my pregnancy?

There are several ways in which type 2 diabetes can affect your pregnancy:

First trimester (the first 12 weeks of pregnancy)

In the first trimester, if blood glucose is poorly controlled this can result in your baby not developing as expected. These deviations from normal development are called congenital malformations or birth defects. They can range from a cleft lip (when the lip does not join completely before birth) to more major conditions such as an abnormal heart structure. The higher the level of HbA1c is at conception, the higher the chance is of a congenital malformation developing.

Second and third trimesters (from week 12 of pregnancy onwards)

Poor glucose control in the second and third trimester means your baby receives more glucose across the placenta afterbirth. In response to this they can grow more quickly and so there is an increased chance of having a baby that is larger than average. Giving birth to a baby that is larger than average can lead to complications such as shoulder dystocia (difficulty in delivering the shoulders after the baby's head is born).

There is also an increased chance of stillbirth in later pregnancy in people with diabetes.

These issues mean that the medical team may advise an induction of labour (starting labour artificially) between 37 weeks and 38 weeks and 6 days of pregnancy. A caesarean section may be recommended if we think the baby might be very large, or if there are other concerns about the baby (such as position the baby is in) that make the chance of a successful vaginal birth less likely. A caesarean section is an operation to deliver your baby through a cut made in your abdomen (tummy) and uterus (womb).

After the birth of your baby

After the birth, there is a chance that your baby will develop a low blood glucose level. This may be prevented by feeding your baby soon after delivery, but some babies require a short time on the Neonatal (newborn) Baby Unit where they can receive glucose as an infusion ('drip') into a vein.

At your 36 week antenatal appointment, your midwife will discuss hand expressing colostrum with you. Colostrum is the energy-rich breast first milk that you produce before your main milk supply establishes (comes in) which is usually happens around day 3 to 4 after the birth of your baby. Hand expressing is a way of collecting small volumes of colostrum before the birth. This can then be given to your baby after birth (in addition to your baby feeding at the breast) and may be helpful to keep their blood glucose at normal levels.

Blood glucose monitoring

This is the most important thing to be doing in pregnancy.

This can be hard as it is required daily for your whole pregnancy. The target range for blood glucose during pregnancy is also narrower and so requires more careful monitoring than usual. Good blood glucose control really does make an important difference to the wellbeing of your baby. We recommend that you monitor your blood glucose throughout your pregnancy.

Are my diabetes medications safe in pregnancy?

Metformin has been used in pregnancy for many years and we are confident it is safe to use in pregnancy.

Other medications such as glibenclamide are less commonly used in pregnancy. Medications such as gliclazide, and newer medications for type 2 diabetes are not recommended in pregnancy.

If you are taking tablets for your diabetes other than metformin, please discuss this with your GP or hospital diabetes doctor prior to conception (getting pregnant).

Metformin

What is metformin?

Metformin is a medication which makes your body more sensitive to your own insulin.

How is it taken?

Each tablet is 500mg (milligram) and the usual maximum dose is 4 tablets a day. The tablets should be taken during or straight after meals with a glass of water. Metformin will be started at a low dose and the medical team in the pregnancy diabetes clinic will increase the dose based on your blood glucose readings and if you are experiencing any side effects.

Does metformin have any side effects?

Most people do not experience any problems with taking metformin. However, side effects may include nausea, tummy pain, bloating or diarrhoea. These are usually mild and temporary and are not usually a reason for needing to stop taking the medication. The chance of experiencing side effects is reduced by starting at a low dose and increasing gradually. Your hospital diabetes team will advise you on this.

Insulin

What is insulin?

Insulin is a hormone (chemical) naturally produced in the pancreas (an important gland in your tummy) which controls your blood glucose levels.

How do I take it?

Insulin is given by injection under the skin, with a very thin needle. If you need insulin, the diabetes team will teach you how to store insulin, draw up the correct dose and inject the insulin.

Insulin is stored in a device which looks like a pen, with a very small needle at one end, which is used to administer the medication into your abdomen (tummy), buttocks or thighs.

Why have I been given different types of insulin?

There are many different types of insulin, but the two main types of insulin we use in pregnancy are:

Long-acting insulin (for example, insulin glargine, also known as Lantus®), which is usually injected at night

Short-acting insulin (for example, insulin aspart, also known as Novorapid®) which is injected at mealtimes.

You may not require both types of insulin, this will depend on the pattern of your raised blood glucose readings.

Are there any side effects?

The injections are not usually painful, but it is recommended that you regularly change injection site to prevent any damage to the tissues beneath the injection sites. Sometimes people can find the thought of injecting insulin a little overwhelming, so please make sure you discuss any concerns you may have at your hospital visits.

Taking insulin can also cause hypoglycaemia.

What is hypoglycaemia?

Hypoglycaemia is when your blood glucose level falls to an abnormally low level. Symptoms include shakiness, dizziness, sweating, mood changes and headache. If you experience symptoms like this, check your blood glucose if you can easily do this. If it is less than 4mmol/l, take some food or drink that contains glucose (e.g. 4 to 5 jelly babies, or fruit juice). If checking your blood glucose immediately is difficult, then assume that it is low and take some food or drink that contains glucose (sugar).

When you are first given insulin you will also be given a single use glucagon injection kit. Glucagon is a hormone which does the exact opposite of insulin and puts your blood glucose up. This is to be given to you by others if your glucose becomes so low you are too sleepy to eat or drink something with glucose in it.

How will this affect my pregnancy and birth?

It is normal for the dose of insulin to increase during your pregnancy as your baby and placenta (afterbirth) grows. If you are on insulin during pregnancy, it is possible you will need an insulin infusion (through a drip into the back of your hand or in your arm) during labour and birth.

Can I drive if I am taking insulin?

It is recommended you test your glucose level before you drive and only drive if it is above 5mmol/l. It is recommended that you inform both the DVLA and your insurance company of your situation.

Are there any restrictions on work if I am taking insulin?

There are some occupations where being on insulin causes potential health and safety issues, for example if you operate heavy machinery. Some occupations require you to notify your employer if started on insulin. You are advised to discuss the diagnosis and insulin treatment with your line manager and complete a risk assessment if needed.

Is it safe to use insulin in pregnancy?

Most types of insulin are safe and appropriate to use in pregnancy. We have less experience of newer formulations such as Abasaglar® so we prefer to use alternatives to this if possible.

Do I need to take aspirin?

Pregnant people with diabetes have a higher chance of developing pre-eclampsia. This is a condition caused by the placenta (afterbirth) not working as well it should, which results in high blood pressure and protein in the urine and can make both you and your baby unwell. All pregnant people with diabetes are therefore advised to take low-dose aspirin (75mg to 150mg once a day) from week 12 to week 36 of pregnancy, as this reduces the chance of pre-eclampsia developing.

Do I need to take folic acid?

People with diabetes are also recommended to take high dose of folic acid (5mg) before and during pregnancy. This increases the chance of your baby developing normally and specifically reduces the chance of the baby developing an abnormality called a neural tube defect. The neural tube is a structure that develops into the baby's brain and spinal cord. A neural tube defect is when part of the neural tube does not develop or close properly (such as in spina bifida for example). This high dose cannot be bought over the counter and must be prescribed by your GP.

We recommend you take 5mg folic acid for 3 months before conception (getting pregnant) and for the first 12 weeks of your pregnancy to help reduce the chance of your baby developing a neural tube defect.

What about other medications you may be taking?

If you are taking cholesterol lowering medications such as statins (simvastatin, atorvastatin for example) or blood pressure tablets called ACE inhibitors (such as ramipril for example), you will be advised to stop these in pregnancy due to the potential effects they may have on your baby. We recommend that you discuss all the medications you take with your GP before getting pregnant so that you can be advised on changing to alternatives if needed.

What happens after giving birth?

Your blood glucose control will quickly return to how it was before you were pregnant, so the treatment you take after your baby is born will be less than what you were taking during pregnancy. You will be advised of the exact medications and doses that you need to take before the birth of your baby by your hospital doctor. Breastfeeding can result in lower blood glucose levels, so if you are taking insulin after giving birth and breastfeeding, the dose of insulin you will be advised to take will be about two-thirds of your pre-pregnancy dose. Your hospital doctor will discuss this with you.

We ask that you continue to monitor your blood glucose for the first 24 hours after having your baby to ensure that your readings return to a normal level.

Where can I find more information?

Website:
www.diabetes.org.uk/guide-to-diabetes/life-with-diabetes/pregnancy

Website:
www.nhs.uk/conditions/pregnancy-and-baby/diabetes-pregnant

How to contact us

Maternity Assessment Unit

Telephone: **01865 220 221**

The Diabetes Midwives

Telephone: **01865 851 039**
(Monday to Friday 8am to 5.30pm)

You can also email the diabetes midwives:
Email: **diabetes.midwives@oxnet.nhs.uk**

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

We would like to thank the Oxfordshire Maternity and Neonatal Voices Partnership for their contribution in the development of this leaflet.

Author: Consultant Obstetric Physician
October 2024
Review: October 2027
Oxford University Hospitals NHS Foundation Trust
www.ouh.nhs.uk/information

Leaflet reference number: OMI 106803